Proteomic analysis of descending thoracic aorta identifies unique and universal signatures of aneurysm and dissection

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ABSTRACT

Objectives: Very few clinical predictors of descending thoracic aorta dissection have been determined. Although aneurysms can dissect in a size-dependent process, most descending dissections will occur without prior enlargement. We compared the proteomic profiles of normal, dissected, aneurysm, and both aneurysm and dissected descending thoracic aortas to identify novel biomarkers and further understand the molecular pathways that lead to tissue at risk of dissection.

Methods: We performed proteomic profiling of descending thoracic aortas with four phenotypes: normal (n = 46), aneurysm (n = 22), dissected (n = 12), and combined aneurysm and dissection (n = 8). Pairwise differential protein expression analyses using a Bayesian approach were then performed to identify common proteins that were dysregulated between each diseased tissue type and control aorta and to uncover unique proteins between aneurysmal and dissected aortas. Network and Markov cluster algorithms of differentially expressed proteins were used to find enriched ontology processes. A convex analysis of mixtures was also performed to identify the molecular subtypes within the different tissue types.

Results: The diseased aortas had 71 common differentially expressed proteins compared with the control, including higher amounts of the protein thrombospondin 1. We found 42 differentially expressed proteins between the aneurysm and dissected tissue, with an abundance of apolipoproteins in the former and higher quantities of extracellular matrix proteins in the latter. The convex analysis of mixtures showed enhancement of a molecular subtype enriched in contractile proteins within the control tissue compared with the diseased tissue, in addition to increased proportions of molecular subtypes enriched in inflammation and red blood cell expression in the aneurysmal compared with the dissected tissue.

Conclusions: We found some overlapping differentially expressed proteins in aneurysmal and nonaneurysmal descending thoracic aortas at risk of dissection compared with normal aortas. However, we also found uniquely altered molecular pathways that might uncover mechanisms for dissection. (JVS−Vascular Science 2022;3:85-181.)

Clinical Relevance: Diseases of the descending thoracic aorta such as aneurysms and dissections carry a high degree of morbidity and mortality. At present, a complete understanding is still lacking of the genetics that drive these diseases and why some aortic segments dissect in the presence or absence of an aneurysm. We compared and contrasted the whole proteome expression of descending aortas from patients with normal, dissected, aneurysmal, and aneurysmal with dissected pathology aortic tissue. We uncovered potential tissue markers that might serve as future targets for therapy or predictors of disease progression.

Keywords: Aneurysm; Descending thoracic aorta; Dissection; Proteomics
Acute aortic syndromes are among the deadliest forms of cardiovascular disease. In particular, type A aortic dissections carry a high risk of mortality. In contrast, most patients with type B dissections will survive hospitalization, although the rates of morbidity and mortality have continued to be high.\(^1\) Predicting which patients will be at risk of acute dissection is extremely difficult. The aortic size has continued to be one of the few risk factors routinely used in clinical practice. Pathologically, aneurysms of the thoracic aorta result from medial degeneration. This destruction causes the wall to thin, grow, and weaken, which is thought to increase the likelihood of dissection under pressure.\(^2\) However, many recent studies have shown that a significant number of both type A and B dissections will occur at sizes well below the current guidelines for surgical management. More than 80% of type B dissections can occur at diameters <5.5 cm, with little to no enlargement at all.\(^3,4\) The pathology underlying these nonaneurysmal dissections is much less understood. In addition, aneurysms will often be mostly silent, resulting in few clinical symptoms. At times, they will be identified incidentally on diagnostic imaging or through a family history. Nonaneurysmal aortas at risk of dissection go almost completely undetected.\(^5\) As such, novel screening methods are desperately needed to help predict which patients are at risk of acute dissection.

In the present study, we surveyed the proteome of descending thoracic aortas from four different populations: normal descending thoracic aorta, type B aortic dissection (TBAD), descending thoracic aortic aneurysm (TAA), and combined type B dissection with aneurysm (TADA). Our goal was to identify a molecular signature that could be used to better understand the underlying pathology and, ultimately, predict the patients at risk of dissection, regardless of the presence of an aneurysm. The proteins unique to each pathology compared with the control tissue and the overlapping differentially expressed proteins from all disease states were identified using a pairwise Bayesian approach. We also identified a unique set of proteins and molecular subtypes that distinguished TBAD from TAA, which might provide insight into the mechanism of how aortic tissue dissects in the presence or absence of an aneurysm.

**METHODS**

**Patients and tissue samples.** We prospectively enrolled 42 patients undergoing aortic surgery for aneurysm repair or chronic aortic dissection. Normally discarded descending thoracic aortic tissue was extracted from the operating room and flash frozen for later use. An additional 46 normal descending thoracic aortas were taken at autopsy <24 hours after death from individuals in accordance with approved procedures and institutional review board approval described in detail previously.\(^6\) The University of Texas Medical Center review board approved the procedures for aneurysm and dissection sample acquisition (principal investigators, D.M.M. and A.A.). The patient demographics, including sex, were obtained from the electronic medical records (Table I). The cause of death for the control patients is listed in Supplementary Table I.

**Sample preparation and mass spectrometry.** The flash frozen tissue samples were pulverized over a bath of liquid nitrogen into a fine powder. The tissue powder was solubilized in a 6 M urea 0.1% RapiGest (Waters, Milford, Mass) lysis buffer, and the proteins were extracted using high pressure cycling on a barocycler instrument (Pressure Biosciences, Easton, Mass) with 45 × 60-second cycles consisting of 50 seconds at high pressure (40 PSI) followed by 10 seconds at normal atmospheric pressure. The protein concentration of the lysates was determined, and 50 µg of protein was allocated, reduced with 10 mM dithiothreitol, alkylated with 100 mM iodoacetamide, and digested with 1:20 trypsin/protein ratio using sequencing grade trypsin/LysC mix (Promega, Madison, WIs) in the presence of 10% acetonitrile. The digested peptides were partially dried, and the pH of the residual solution was adjusted to <2 with the addition of 10% formic acid (FA). Digested peptides were partially dried, and pH was lowered to <2 with the addition of 10% FA. The acidified samples were desalted on Waters C18 desalting plates (Waters) according to the manufacturer's protocol. Desalted peptides were dried and resuspended at 1 µg/µL in 0.1% FA in high-performance liquid chromatography–grade water and mixed 1:1 with a 120 dilution of indexed retention time standard peptides (Biogynosys, Schlieren, Switzerland) for a final loading concentration of 0.5 µg/µL.

A total of 4 µg of peptide was loaded onto a 15-cm C18 reverse-phase column attached to an Eksigent 415 HPLC system operating in microflow mode equipped with an Ekspert nanoLC 400 autosampler. The peptides were first loaded onto a trap column (10 × 0.3 mm, C18CL, 5 µm, 120Å; Sciex, Framingham, Mass) for 3 minutes at
Table I. Patient demographics

| Aortic pathology | Age, years | Male sex | White race | CAD | COPD | HTN | PVD | CVA | Family history |
|------------------|------------|----------|------------|-----|------|-----|-----|-----|----------------|
| Control (n = 46) | 41.95 ± 8.08 | 76       | 72         | NA  | NA   | NA  | NA  | NA  | NA             |
| TAA (n = 22)     | 45.45 ± 7.96  | 86       | 45         | 20  | 10   | 100 | 0   | 0   | 0              |
| TBAD (n = 12)    | 43.5 ± 11.49 | 75       | 33         | 0   | 0    | 50  | 0   | 0   | 25             |
| TADA (n = 8)     | 48.13 ± 8.08  | 75       | 38         | 0   | 0    | 100 | 16.7| 0 | 16.7          |

10 μL/min of solvent A (0.1% FA in water) followed by separation on an analytical column (ChromXP C18CL, 150 × 0.3 mm, 3 μm, 120Å, Sciex) at a flow rate of 5 μL/min using a linear AB gradient of 3% to 35% solvent B (0.1% FA in acetonitrile) for 60 minutes, 35% to 85% solvent B for 2 minutes, holding at 85% solvent B for 5 minutes, followed by reequilibration at 3% solvent B for 7 minutes. Mass spectra were collected in data independent acquisition mode, with the instrument looping through an initial MS1 scan of 250 ms (range, 400-1250 m/z), followed by acquisition of 100 MS2 scans of 30 ms (range, 100-1800 m/z) from peptide ions filtered through mass windows of variable width. The total cycle time was 3.3 seconds, allowing for a minimum of 10 sampled points across a given chromatographic peak for subsequent quantification of peptide MS2 fragments. Source gas 1 was set to 15 PSI, gas 2 was set to 20 PSI, and curtain gas was set to 25 PSI. The source temperature was set to 100°C, and source voltage was set to 5500 V.

Peptide library, normalization, and imputation. The peptide peak groups were extracted from a customized library consisting of an existing library of pooled human vascular lysates described previously6 (available at: http://www.peptideatlas.org/PASS/PASS01066) merged with the Q1 pseudospectra files extracted from the sample-specific DIA files (generated as described) using the DIA-Umpire signal extraction module.7 The groups were searched and formatted as a peptide library as described in detail previously.8 Peptide groups containing up to six fragment ions were extracted from the library using the openSWATH workflow9 and implemented in-house, as described previously.6,10 In brief, the peptide peak groups were extracted from the raw data and the identifications scored according to multiple metrics. Decoy peak groups in the peptide assay facilitate modeling of the peptide score distributions and assignment of false discovery. The TRIC algorithm then aligns the peptide identifications across the experiment.11 The fragment level intensities from each file were normalized to the total extracted MS2 signal intensity of that file (eg, akin to normalization to total protein in a Western blot), and normalized MSSTATS software was used to aggregate the fragment level data into protein intensities.12

Differential protein expression. Differential protein analysis was performed on log-transformed abundances using the LIMMA package in R studio.13 A log2 fold change of 1.0 and an adjusted P value of < .05 (false discovery rate) was used for the cutoff parameters. A complete list of all pairwise analyses is presented in Supplementary Tables II and III.

Protein networks, heatmaps, and principal component analysis. Protein networks were constructed using the STRING interaction network, and their visualization was customized in cytoscape.14,15 Clustering was performed using the MCL method with an inflation parameter set to 3. Gene ontology was conducted on clusters, and enrichments were considered significant at P < .05 (false discovery rate). Heatmaps and principal component analysis were conducted in R studio using the package ggplots.16

Application of convex analysis of mixtures across the DIA-MS protein data from unselected specimens. To explore the underlying heterogeneity in molecular subtypes present within the tissue homogenates (eg, lysates reflecting multiple contributing cell types), we implemented the convex analysis of mixtures (CAM) pipeline,17,18 the methods and function of which have been described in detail previously.10 Pertinent modifiable settings were the elimination of signals outside of a 5%- to 95%-interval of total intensity and k for the minimum descriptive length parameterization set to 2 to 10 putative subtypes. The most likely subtype number was determined from the minima of the minimum descriptive length plot, and the CAM workflow was then used to determine the protein markers of each subtype by first predicting the expression proportions for each protein across the six subtypes and identifying the proteins with dominant or exclusive predicted expression in one subtype relative to the others. Finally, the algorithm was used to estimate the relative proportions of each subtype present in each sample from the dataset. Marker protein gene ontology analysis was performed using the ShinyGO online.
### Table II. Common differentially expressed proteins between thoracic aneurysms, dissections, and aneurysms with dissection compared with control

| Protein symbol | Protein name | Direction of expression | CAM subtype marker |
|---------------|--------------|-------------------------|--------------------|
| IGDCC3        | Immunoglobulin superfamily DCC subclass member 3  | Down                 |                    |
| GLD2          | Poly(A) RNA polymerase GLD2                        | Down                 |                    |
| FABP1         | Fatty acid-binding protein 1                        | Down                 | S4                 |
| CELSR3        | Cadherin EGF seven-pass G-type receptor 3          | Down                 | S4                 |
| FURIN         | Furin                                                | Down                 |                    |
| MB            | Myoglobin                                            | Down                 |                    |
| XDH           | Xanthine dehydrogenase                              | Down                 | S4                 |
| DCN           | Decorin                                              | Down                 |                    |
| GSS           | Glutathion synthetase                                | Down                 |                    |
| MYO18A        | Unconventional myosin-XVIIIa                         | Down                 | S4                 |
| ACAN          | Aggrecan core protein                                | Down                 | S4                 |
| OR4C3         | Olfactory receptor family 4 subfamily C member 3    | Down                 |                    |
| PPM1F         | Protein phosphatase Mg2+/Mn2+ dependent 1F           | Down                 |                    |
| CA3           | Carbonic anhydrase 3                                 | Down                 |                    |
| DES           | Desmin                                               | Down                 |                    |
| CKM           | Creatine kinase M-type                               | Down                 |                    |
| KRT73         | Keratin 73                                           | Down                 | S4                 |
| LSM7          | U6 SnRNA-associated Sm-like protein LSM7             | Down                 | S4                 |
| TPM2          | Tropomyosin beta chain                               | Down                 | S4                 |
| APP           | Amyloid-beta A4 protein                              | Down                 | S4                 |
| ERC2          | ERC protein 2                                        | Down                 |                    |
| RNASE1        | Ribonuclease pancreatic                              | Down                 |                    |
| MFGE8         | Lactadherin                                          | Down                 | S4                 |
| CATSPERG      | Cation channel sperm associated auxiliary subunit gamma | Down   | S4                 |
| SBSPON        | Somatomedin-B and thrombospondin type-1 domain-containing protein | Down |                    |
| FAM198B       | Golgi associated kinase 1B                           | Down                 | S4                 |
| SPON1         | Spondin-1                                            | Down                 |                    |
| SON           | Protein SON                                          | Down                 | S4                 |
| FILIP1L       | Filamin A interacting protein 1 like                 | Down                 | S4                 |
| LGALS3BP      | Galectin 3 binding protein                           | Down                 |                    |
| ADGRE5        | Adhesion G protein-coupled receptor E5              | Down                 |                    |
| DKK3          | Dickkopf-related protein 3                           | Down                 |                    |
| TPM1          | Tropomyosin alpha-1 chain                            | Down                 | S4                 |
| CFP           | Properdin                                            | Down                 | S4                 |
| SPARCL1       | SPARC-like protein 1                                 | Down                 | S4                 |
| CCN3          | Cellular communication network factor 3              | Down                 |                    |
| CKB           | Creatine kinase B-type                               | Down                 | S4                 |
| SOD3          | Extracellular superoxide dismutase Cu-Zn             | Down                 | S4                 |
| FABP4         | Fatty acid-binding protein 4                         | Down                 |                    |
| COL18A1       | Collagen type 18 alpha 1 chain                       | Down                 | S4                 |
| THSD1         | Thrombospondin type 1 domain-containing protein 1    | Down                 | S4                 |
| VW4           | Von Willebrand factor A domain-containing protein 1  | Down                 | S4                 |
| TINAGL1       | Tubulointerstitial nephritis antigen-like precursor  | Down                 | S4                 |
| ACAT1         | Acetyl-coenzyme A acetyltransferase 1                | Down                 |                    |
| RHOB          | Ras homolog family member B                          | Down                 |                    |
| ITCA7         | Integrin alpha-7                                     | Down                 | S4                 |
The top five nonredundant gene ontology biological process enrichments for each subtype were used to summarize the overall functional enrichment profile and infer the hypothesized subtype identity.

Histologic findings. Representative tissue samples from the diseased groups were fixed in formaldehyde and embedded in paraffin for sectioning. The samples were sliced in 5-μm sections and stained with hematoxylin and eosin, trichrome, and elastin (ELN)-Van Giessen. The images were captured using the ECHO Revolve microscope (ECHO, San Diego, Calif).

Western blot. Protein lysates were reduced in loading buffer, run on acrylamide gels, and transferred to polyvinylidene fluoride membrane. The membranes were subsequently probed with antibodies against thrombospondin 1 (THBS1; 1:500; sc-59887; Santa Cruz Biotechnology, Dallas, Tex), beta-tubulin (1:1000; Thermo Fisher, Waltham, Mass), and ELN (1:500; sc-166543; Santa Cruz Biotechnology).

RESULTS
Aneurysms and dissections share differentially expressed proteins. After quality measure and removing peptides not present in ≥50% of the samples, 1872 peptides were left. We performed differential protein analysis between the normal descending aorta tissue and each aortic pathology. At a log2 fold change cutoff of 1.0 and an adjusted P value of <.05, the number of differentially expressed proteins was 107 for TADA, 416 for TAA, and 272 for TBAD. A total of 71 proteins were shared among the three comparisons: 12 upregulated and 59 downregulated (Table II and Fig 1). Network analysis with MCL clustering generated 14 clusters of at least two proteins (Fig 2, A). One main cluster consisted of nine proteins. The top five biological process gene ontology enrichments for proteins in this cluster were positive regulation of endothelial cell apoptotic process, negative regulation of chemotaxis, regulation of mononuclear cell migration, peptide cross-linking, and integrin-mediated signaling pathway. The top molecular function enrichments

| Protein symbol | Protein name                                      | Direction of expression | CAM subtype marker |
|----------------|--------------------------------------------------|-------------------------|--------------------|
| SYNM           | Synemin                                          | Down                    |                    |
| GALM           | Galactose mutarotase                             | Down                    |                    |
| CRYAB          | Alpha-crystallin B chain                         | Down                    |                    |
| FLNC           | Filamin-C                                        | Down                    |                    |
| RILPL1         | Rab interacting lysosomal protein like 1         | Down                    |                    |
| ANXA5          | Annexin A5                                       | Down                    |                    |
| CT1orf54       | Chromosome 11 open reading frame 54              | Down                    |                    |
| LHPP           | Phospholysine phosphohistidine inorganic pyrophosphate phosphatase | Down | S4 |
| VIM            | Vimentin                                         | Down                    | S4                 |
| ALDH1B1        | Aldehyde dehydrogenase 1 family member B1       | Down                    | S4                 |
| PSIP1          | PC4 and SFRS1-interacting protein                | Down                    |                    |
| ANXA4          | Annexin A4                                       | Down                    | S4                 |
| ACTN2          | Alpha-actinin-2                                  | Down                    | S4                 |
| PFKL           | ATP-dependent 6-phosphofructokinase              | Up                      | S2                 |
| SLC2A1         | Solute carrier family 2                          | Up                      |                    |
| FERM1T3        | Ferritin family homolog 3                        | Up                      |                    |
| LMAN2          | Lectin mannose binding 2                         | Up                      |                    |
| THBS1          | Thrombospondin 1                                 | Up                      |                    |
| PRTN3          | Myeloblastin                                     | Up                      | S6                 |
| ELANE          | Neutrophil elastase                              | Up                      |                    |
| S100A8         | S100 calcium binding protein A8                  | Up                      | S6                 |
| SH3RF2         | SH3 domain containing ring finger 2              | Up                      |                    |
| FANCA          | FA complementation group A                        | Up                      | S6                 |
| c8orf74        | Chromosome 8 open reading frame 74               | Up                      | S6                 |
| COL3A1         | Collagen type 3 alpha 1 chain                    | Up                      | S2                 |

CAM, Convex analysis of mixtures.
included integrin binding, growth factor binding, and heparin binding. Finally, the top five cellular component enrichments included platelet alpha granule lumen, collagen trimer, endoplasmic reticulum lumen, extracellular matrix, and collagen-containing extracellular matrix (Fig 2, B). With 15 edges, THBS1 had the highest degree within this cluster and within the network. THBS1 was significantly upregulated in each disease group compared with the control. We validated this finding with Western blotting on representative samples from each pathology (Fig 2, C).

Unique proteins for aneurysms and dissections uncover classic genes associated with degenerative aortas. We next examined the differentially expressed proteins between the aortic pathologies. No proteins had met our predetermined cutoffs when comparing TADA to either TAA or TBAD. There were, however, 42 differentially expressed proteins between TAA and TBAD (Table III and Fig 3, A and B). Of these 42 proteins, 8 had higher expression in TBAD and 36 in TAA. Network analysis with MCL clustering generated six clusters with at least two proteins (Fig 4, A). The three largest clusters contained 12, 7, and 4 nodes. In the largest cluster, the nodes with the highest degree included apolipoprotein A1 (n = 14), apolipoprotein A-II (n = 13), apolipoprotein B (n = 13), and alpha-2-HS-glycoprotein (n = 12), all of which were upregulated in the TAA group compared with the TBAD group. Gene ontology for biological process, molecular function, and cellular component had enrichments for lipoprotein and cholesterol processes. The cluster with second highest number of nodes included fibrillin 1, ELN, collagen type 1 alpha 1 chain, and collagen type 4 alpha 2 chain, all of which were upregulated in the TBAD group compared with the TAA group. The top five biological process gene ontology enrichments were collagen-activated tyrosine kinase receptor signaling pathway, aortic valve morphogenesis, protein trimerization, negative regulation of angiogenesis, and negative regulation of transforming growth factor-beta (TGFβ) receptor signaling pathway. Enrichments in molecular function and cellular component also emphasized extracellular matrix, collagen, and integrin processes (Fig 4, B). ELN expression was validated using Western blotting (Fig 2, C). The cluster with four nodes included the hemoglobin subunit beta and hemoglobin subunit zeta proteins. Representative histologic images from all photographs of diseased aortic tissue are shown in Fig 4, C.

**CAM identifies smooth muscle and inflammatory subtypes.** The CAM approach uses unsupervised deconvolution of heterogeneous expression data (eg, homogenized arterial tissues with multiple cell types contributing to proteomic expression) to estimate detectable subtypes and their component marker proteins. The CAM workflow identified the presence of at least six putative expression subtypes (Fig 5, A). Of these, subtypes S2, S4, and S6 had marker proteins that overlapped with the differentially expressed proteins shared among all disease comparisons, and subtypes S1 and S3 had marker proteins overlapping with the differentially expressed proteins between the aneurysm and dissection groups (Tables II and III). The proportion of each subtype present in each sample was also estimated using CAM, and these estimated proportions showed clear trends across the experimental groups that were consistent with the overlap between the subtype marker proteins and differentially expressed proteins. Specifically, subtypes S2 and S6 demonstrated elevated proportions in all three disease groups and subtype S4 demonstrated a clear reduction in the disease groups relative to the control (Fig 5, B). Subtypes S1 and S3 were more elevated in the aneurysm conditions relative to dissection. Gene ontology analysis of the marker proteins for each subtype indicated enrichment of the immune and inflammation pathways in subtype S1, endoplasmic reticulum-related proteins in subtype S2, pathways associated with red blood cells in subtype S3, contractile and cell adhesion pathways in subtype S4, and neutrophil-related pathways in subtype S6 (Fig 5, C). Subtype S5 did not exhibit sufficient pathway enrichment for clear interpretation.

**DISCUSSION**

Thoracic aortic dissection has continued to be one of the highest causes of morbidity and mortality among the cardiovascular diseases. However, few reliable risk factors are available, with the exception of aortic size.
Recent studies, however, have indicated that many descending thoracic aortas will dissect without any evidence of prior aneurysm growth and, of even greater concern, do so at less than the recommended thresholds currently set for surgical intervention.\textsuperscript{3,4} These clinical findings beg the question of whether dissections with and without an aneurysm represent two different types of diseases. We found at least some evidence to suggest that certain proteins may be differentially expressed in these two conditions.

### Table III. Differentially expressed proteins between thoracic aneurysms and dissections

| Protein symbol | Protein name                                      | Log\textsubscript{2}FC | Adjusted \( P \) value | CAM subtype marker |
|----------------|--------------------------------------------------|--------------------------|--------------------------|-------------------|
| COL1A1         | Collagen type 1 alpha 1 chain                     | -1.9                     | 0.0211                   |                   |
| ELN            | Elastin                                           | -1.5                     | 0.0497                   |                   |
| FBNI           | Fibrillin 1                                       | -1.6                     | 0.0353                   | S2                |
| COL4A2         | Collagen type 4 alpha 2 chain                     | -1.3                     | 0.0569                   |                   |
| NPNT           | Nephronecin                                       | -1.4                     | 0.0436                   |                   |
| LOXL1          | Lysyl oxidase 1                                   | -1.3                     | 0.0421                   |                   |
| LAMB2          | Laminin subunit beta 2                            | -1.3                     | 0.0316                   | S3                |
| EMILIN1        | Elastin micrifi bril interfa cer 1                | -1.3                     | 0.343                    |                   |
| FUC1A          | Alpha-L-fucosidase 1                              | 1.1                      | 0.0369                   |                   |
| ECHI           | Enoyl-coenzyme hydratase 1                        | 1.1                      | 0.0369                   |                   |
| GSH1           | Glutamine cysteine ligase                         | 1.1                      | 0.0228                   |                   |
| APOA2          | Apolipoprotein A-II                               | 1.1                      | 0.0344                   | S1                |
| LAP3           | Leucine aminopeptidase 3                          | 1.1                      | 0.0228                   |                   |
| A1AT           | Alpha-1 antitrypsin                               | 1.1                      | 0.0244                   |                   |
| RBP4           | Retinol binding protein 4                         | 1.1                      | 0.0498                   |                   |
| FETUA          | Alpha-2-HS-glycoprotein                           | 1.1                      | 0.0228                   |                   |
| CA2            | Carbonic anhydrase 2                              | 1.1                      | 0.0394                   | S3                |
| ICJ            | Immunoglobulin J polypeptide                      | 1.1                      | 0.0435                   | S1                |
| SERPINA7       | Serpin family A member 7                          | 1.2                      | 0.03                     | S1                |
| APOD           | Apolipoprotein D                                  | 1.3                      | 0.0244                   |                   |
| HBB            | Hemoglobin subunit beta                           | 1.3                      | 0.0344                   | S3                |
| APOI1          | Apolipoprotein L1                                 | 1.4                      | 0.0369                   |                   |
| HBA            | Hemoglobin subunit alpha                          | 1.4                      | 0.0316                   | S3                |
| CA1            | Carbonic anhydrase 1                              | 1.4                      | 0.0211                   | S3                |
| PRTG           | Progenin                                          | 1.5                      | 0.0369                   | S3                |
| TNR6C          | Trinucleotide repeat containing adaptor 6C       | 1.5                      | 0.0435                   |                   |
| APOC2          | Apolipoprotein C-II                               | 1.6                      | 0.042                    |                   |
| ADGRF1         | Adhesion G protein-coupled receptor F1            | 1.6                      | 0.0228                   | S3                |
| APOC3          | Apolipoprotein C-III                              | 1.6                      | 0.0228                   |                   |
| IGKVSD-15      | Immunoglobulin kappa variable 3D-15              | 1.6                      | 0.0344                   | S1                |
| APOB           | Apolipoprotein B                                  | 1.6                      | 0.0211                   |                   |
| HKDC1          | Hexokinase domain containing 1                    | 1.7                      | 0.0435                   |                   |
| HBAZ           | Hemoglobin subunit zeta                           | 1.7                      | 0.0376                   | S3                |
| KANL3          | KAT8 regulatory NSL complex subunit 3             | 1.7                      | 0.0228                   | S3                |
| PG52           | Decorin                                           | 1.8                      | 0.0211                   |                   |
| ELF4G3         | Eukaryotic translation initiation factor 4        | 1.8                      | 0.0344                   | S1                |
| CYP27B1        | Cytochrome p450 family 27 subfamily B member 1    | 1.8                      | 0.0368                   |                   |
| ERC2           | ELKs/RAB6-interacting/CAST family member 2       | 1.9                      | 0.0344                   |                   |
| APOA1          | Apolipoprotein A1                                 | 2.1                      | 0.0183                   | S1                |
| IGLL5          | Immunoglobulin lambda like polypeptide 5          | 2.1                      | 0.0228                   | S1                |
| IDNK           | Gluconokinase                                     | 2.6                      | 0.0183                   | S3                |
| HSFI           | Heat shock transcription factor 1                 | 2.6                      | 0.0353                   | S3                |

CAM, Convex analysis of mixtures; \( \log_2 \text{FC} \), \( \log_2 \) fold change.\textsuperscript{a}False discovery rate.
Degenerative aortic syndromes are enriched in extracellular matrix proteins. **A**, String network of overlapping proteins from Fig 1. Relative expression (average Z-scores for a given protein within each experimental group) of each protein in control (C), aneurysm (A), aneurysm with dissection (AD), and dissection (D) is displayed in that order as node bar charts, where orange indicates a relative increased expression and blue, a relative decreased expression. The largest cluster is highlighted in red. **B**, Biological process (Top), molecular function (Middle), and cellular component (Bottom) ontology analysis for the largest cluster in the network highlighted in red. **C**, Biomarker protein expression levels by Western blotting for representative samples from control and diseased tissue samples.
Thoracic aneurysms and dissections have a unique set of differentially expressed proteins. A, Heat map of the 43 differentially expressed proteins between aneurysmal and dissection tissue. Relative expression for each protein shown for aneurysmal, dissection, and aneurysm with dissection tissue, where red indicates a relative increase and blue, a relative decrease. B, Principal component analysis using the 43 differentially expressed proteins segregating the control and aortic disease tissue. PC: Principal component; TAA, thoracic aorta aneurysm; TADA, thoracic aorta dissection and aneurysm; TBAD, type B aortic dissection.
**Fig 4.** Aneurysm and dissection tissue have unique biological pathways. **A,** STRING protein network of differentially expressed proteins between aneurysms and dissection tissue. The two largest clusters are highlighted in red and yellow. Relative expression (average Z-scores for a given protein within each experimental group) of each protein in control (C), aneurysm (A), aneurysm with dissection (AD), and dissection (D) displayed in that order as node bar charts, where orange indicates a relative increased expression and blue, a relative decreased expression. The two largest clusters are highlighted in red and yellow. **B,** Biological process (Top), molecular function (Middle), and cellular component (Bottom) ontology analysis for the two largest clusters highlighted in A. Red bars indicate the largest cluster and yellow bars, the second largest cluster. **C,** Histologic staining from representative samples of diseased tissue.
differences in the pathways that govern these two diseases, as indicated by the differential protein expression analysis between the TAAs and TBADs. No proteins, however, were significantly altered comparing TADA to TBAD or TAA. This finding was consistent with the CAM results, which showed that within most subtypes TADA was clustered between TBAD and TAA, with the exception of perhaps subtype S1, for which TADA clustered more closely with TAA than with TBAD. The inability to distinguish TADA from TBAD and TAA might have been because TADAs share a signature with both TAA and TBAD or because TADAs represent a mixture of signatures, such that each aorta behaves more like TAA or TBAD. Thus, given the low sample size, the differential expression and CAM were unable to identify significant distinguishing features. We favored the latter theory because the TADAs tended to cluster with either TAA or TBAD using principle component analysis. In addition, we lacked information regarding whether the TADA samples represented atherosclerotic aneurysms that had dissected or dissected tissue that had degenerated into an aneurysm or pseudoaneurysm.

Fig 5. Convex analysis of mixtures (CAM) identified molecular subtypes for aortic disease. A, Minimum distance length plot generated in CAM for K = 2 to 10 potential sources, with minima indicated for 6 sources. B, Box plot of CAM-estimated subtype proportions present in each of the experimental samples, separated by disease category. C, Gene ontology enrichment analysis of the top representative biological process annotations for each subtype. Subtype 5 was omitted owing to the lack of enriched pathways. ER, Endoplasmic reticulum; TAA, thoracic aorta aneurysm; TADA, thoracic aorta dissection and aneurysm; TBAD, type B aortic dissection.
The results of our analyses have shown that the normal tissue was molecularly different from the pathologic tissue. However, we also sought to determine whether any similarities were present between the different types of pathologic aortas. We found 71 proteins that were similarly differentially expressed between each pathology and normal tissue, representing 66%, 17%, and 21% of the differentially expressed proteins from TADA, TAA, and TBAD, respectively. Clearly, some common features exist among aneurysms at risk of dissection, aneurysms that dissect, and aortas without aneurysms that dissect. A network analysis of these 71 proteins generated one main cluster. THBS1 was at the center of this cluster, with a degree of 15. THBS1 was one of the few upregulated proteins in disease tissue compared with the normal tissue, and prior studies have demonstrated a pathologic role for increased THBS1 expression in both aneurysms and dissections. In the Fbln4SMKO aneurysm mouse model, THBS1 is upregulated and causes disruption of the actin cytoskeleton and ELN-contractile apparatus. Deletion of this gene prevents aneurysm formation. In humans, THBS1 is upregulated in the aortas and plasma of patients with acute dissection and might play a role in smooth muscle cell apoptosis and macrophage activation. Thus, THBS1 might be a useful diagnostic marker for all types of aortic degenerations. In addition, THBS1 enzyme-linked immunosorbent assay kits are commercially available and have been used by others to easily detect plasma levels in patients, indicating the practicality of using this protein as a biomarker. Further work in animal models is needed to determine whether THBS1 can be used to predict aneurysms at risk of dissection.

The proteome we analyzed represents a homogenate of multiple underlying cell types. Unsupervised deconvolution by CAM provided provisional insight into how the proteome is organized in terms of the molecular or cellular subtypes. When the proteins in our CAM were screened for those with the gene ontology annotation “contractile,” and their expression was compared across the six subtypes, subtypes S2 and S4 demonstrated a clear enrichment for contractile protein expression (Supplementary Fig). Nevertheless, subtype S4 was more abundant in normal tissue, and subtype S2 was more abundant in diseased tissue. Recent studies using single cell–based omics have shown different populations of smooth muscle cells with unique genetic signatures. Subtypes S4 and S2 could represent two such unique populations of smooth muscle cells, and the shift in abundance of these two populations could be a phenotype of aortic disease. Infiltration of different cells, such as immune cells, from the blood also likely occurs. Subtypes S1 and S6 were enhanced in disease tissue compared with the control tissue, and this group was enriched in inflammatory proteins. Although subtype S6 was enriched for markers of neutrophils and was predicted to be upregulated in all three disease states, subtype S1 was marked by monocyte and IgG (eg, B cell) proteins, and its upregulation appeared limited to the cases with aneurysms. This suggests differences could exist in the nature of the inflammatory involvement between TAA and TBAD, favoring unique involvement of monocyte and B cell infiltration in the etiology of aneurysms but not dissections. Alternatively, this could reflect shifting proportions due to the loss of smooth muscle cells without a large amount of additional infiltration or, even, phenotype switching of smooth muscle cells to phagocytic or monocyte-like cells. This will require significant additional study but presents one intriguing novel hypothesis to explain the differences between these two disease presentations in the descending aorta.

We also uncovered 42 differentially expressed proteins that could distinguish TAA from TBAD. These proteins were enriched in many canonical genes associated with aneurysms and dissections. Only eight proteins were upregulated in the TBAD cohort compared with the TAA group, and seven of these eight genes formed the second largest cluster in the network of all dysregulated proteins. The central node of this cluster was fibrillin 1, and the network was enriched in many processes linked to dissection, including collagen, integrin, and TGFβ signaling. These findings highlight the delicate balance governed by TGFβ signaling in maintaining the exact amount of extracellular matrix (ECM) content. Upregulation of TGFβ signaling can lead to both ECM destruction and deposition. Our findings suggest that aortas that dissect without aneurysm formation might have fragile media owing to excessive ECM composition and that aneurysms will be marked by a paucity of at least certain ECM components. These findings are consistent with those from previous studies, which have shown that patients with thoracic aortic dissection tend to have increased collagen content and patients with aneurysms tend to have a loss of ELN and collagen. Atherosclerosis can also be an important initiator of aneurysm formation. The largest cluster in the network of differentially expressed proteins contained 12 proteins, all upregulated in TAA compared with TBAD. Of these 12 proteins, 7 were apolipoproteins. Previous studies have demonstrated upregulation of apolipoproteins in thoracic aortic aneurysm samples compared with normal aortas. This finding was also consistent with the CAM results, because subtype S1, which is enriched in cholesterol and inflammatory proteins, was enhanced in TAA compared with TBADs. This could signify a shift toward more inflammatory cells in aneurysm tissue compared with dissected tissue, which is known to occur after TGFβ-mediated metalloproteinase destruction of ECM. Finally, the third largest cluster included hemoglobin proteins, which have also been shown to be upregulated in proteomic studies of
abdominal and thoracic aortas. Similarly, subtype 3 in the CAM profile, which was enriched in red blood cell markers, was enhanced in aneurysmal tissue. The significance of this trend is unclear but might represent mural thrombus, a stress response and upregulation of fetal proteins, a response to hypoxia locally, or contamination from the destruction of red blood cells in the turbulent flow that occurs in aneurysms. The utility of using these targets to predict acute dissection can be elucidated from experimental serum proteomics in animal models of dissection with and without aneurysms and prospective proteomic analysis of patients with and without aneurysms.

The present study had some limitations. First, we were unable to obtain significant background information such as the comorbidities of the donor control patients. Furthermore, the proportion of white patients was greater in the control group than in the disease groups \( (P = .03, \chi^2 \text{analysis}) \), although we did not observe significant differences in the differential protein analysis when race was added as a covariate (data not shown). Also, the donor control patients were slightly younger than the patients with aortic disease, although the difference was not statistically significant \( (P = .18, \chi^2 \text{analysis}) \). In addition, although no significant sex differences were present between all groups in our study \( (P = .78, \chi^2 \text{analysis}) \), men were overrepresented. As such, additional studies with female patients will be important to uncover potential sex differences. Finally, for the most part, TBAD and TADA represent aortic dissections that do not degenerate to aneurysms and those that do degenerate to aneurysms, respectively. However, we did not have sufficient clinical information to fully rule out a sample in the TADA group representing an aneurysm that had subsequently dissected. We also failed to detect significant differences between TADA and TBAD and TADA and TAA. This was likely in part due to the heterogeneous nature of TADA patients and the low sample size. Nevertheless, we have uncovered significant candidate proteins that could be used as biomarkers for degenerative diseases of the descending aorta and the risk of acute dissection pending serum validation.

CONCLUSIONS

We have presented a novel comparison of proteomic profiles from normal human descending thoracic aorta and tissue with aneurysmal growth, dissection, and aneurysm with dissection. Although most of the currently available proteomic profiles of the human aorta are from the ascending thoracic and abdominal segments, we have added profiles from the descending thoracic aorta. Because patients with diseases of the descending aorta have different treatment and diagnostic algorithms compared with diseases of other segments, we sought to share some of the protein signatures that could help explain these clinical differences. We were able to identify THBS1 as potential biomarker of degenerative diseases of the aorta such as aneurysms and dissections. A comparison between patients with TAA and TBAD highlighted the crucial balance of TGFβ signaling in ECM deposition and destruction and provided a potential mechanism for how this pathway could be responsible for two different types of pathology that can lead to the same clinical outcome, namely dissection.

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AUTHOR CONTRIBUTIONS

Conception and design: LS, DG, DM, DH, AA, SP
Analysis and interpretation: LS, AO, DG, DM, DT, RH, DH, YW, AA, SP
Data collection: DG, DM, AA, SP
Writing the article: LS, SP
Critical revision of the article: LS, AO, DG, DM, DT, RH, DH, YW, AA, SP
Final approval of the article: LS, AO, DG, DM, DT, RH, DH, YW, AA, SP
Statistical analysis: LS, SP
Obtained funding: DM, DH, AA, SP
Overall responsibility: SP

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Appendix

Supplementary Table I. Cause of death in control tissue

| Cause of death | %  |
|----------------|----|
| Drug overdose  | 43.50 |
| Cardiovascular | 34.80 |
| Asphyxia       | 8.70  |
| Trauma         | 6.50  |
| Pneumonia      | 4.30  |
| Other          | 2.20  |

Estimated Subtype-Specific Protein Expression Distribution (%)

Supplementary Fig. Convex analysis of mixtures (CAM) showing that subtypes 2 and 4 comprised the highest percentage of expressed contractile proteins. Heatmap displaying the proportion of the expression of all CAM genes with the gene ontology annotation “contractile” attributed to each subtype.
### Supplementary Table II. Complete differential expression analysis between aortic pathologies and normal aorta

| Gene    | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|---------|---------------------|------------------|---------------------|------------------|---------------------|------------------|
| A1BG    | 0.2                 | .548             | 0.2                 | .827             |                     |                  |
| A2M     | .6                  | .087             | .8                  | .203             |                     |                  |
| AAMDC   | −1.2                | <.001            | −1.1                | .458             |                     |                  |
| AARS1   | 0.2                 | .651             | 0.2                 | .951             |                     |                  |
| ABCA13  | −1.14               | <.001            | 0.9                 | .59              |                     |                  |
| ABCCB   | −0.5                | .332             | −0.4                | .829             |                     |                  |
| ABCD1   | −0.5                | .381             | −0.9                | 0.2              |                     | .914             |
| ABCF1   | 0.5                 | .323             | −1.1                | 0.7              |                     | 0.469            |
| ABHD14B | −0.7                | .029             | −1.2                | .678             |                     |                  |
| ABI3BP  | −1.13               | <.001            | −0.9                | 0.2              |                     | .147             |
| ACAAI   | 0.1                 | .872             | −0.5                | 0.538            |                     |                  |
| ACAA2   | −0.6                | .109             | −1.1                | 1.157            |                     |                  |
| ACADM   | −0.3                | .418             | −0.6                | 0.209            |                     |                  |
| ACADVL  | 0.2                 | .563             | −0.6                | 0.759            |                     |                  |
| ACAN    | −2.7                | <.001            | −1.7                | 0.002            |                     |                  |
| ACAT1   | −1.15               | <.001            | −1.8                | <.001            | −1.3               | .01              |
| ACAT2   | −0.2                | .737             | −0.7                | 0.949            |                     |                  |
| ACLY    | 0.2                 | .593             | 0.1                 | 0.851            |                     |                  |
| ACO1    | −0.8                | .003             | −0.9                | 0.369            |                     |                  |
| ACO2    | −0.3                | .444             | −0.7                | 0.444            |                     |                  |
| ACOT9   | 0.1                 | .864             | −0.1                | 0.582            |                     |                  |
| ACPI    | −0.7                | .004             | −1.4                | 0.39             |                     |                  |
| ACSF2   | −1.2                | .009             | −0.8                | 0.933            |                     |                  |
| ACSL1   | −0.3                | .585             | −0.4                | 0.369            |                     |                  |
| ACTA1   | −1                  | .001             | −1                  | 0.458            |                     |                  |
| ACTBL2  | −1.1                | <.001            | −0.5                | 0.504            |                     |                  |
| ACTN1   | −0.7                | .002             | −0.2                | 0.879            |                     |                  |
| ACTN2   | −1.14               | <.001            | −1.5                | <.001            | −1                 | .02              |
| ACTN3   | 0.2                 | .829             | −0.6                | 0.84             |                     |                  |
| ACTN4   | −0.9                | .001             | −0.7                | 0.754            |                     |                  |
| ACTR10  | 0.2                 | .554             | 0.2                 | 0.276            |                     |                  |
| ACTR1A  | −0.3                | .467             | −0.8                | 0.829            |                     |                  |
| ACTR2   | −0.1                | .85               | 0.2                 | 0.967            |                     |                  |
| ACTR3   | −0.1                | .735             | −0.1                | 0.991            |                     |                  |
| ACYP2   | −1.1                | .002             | −1.3                | 1.188            |                     |                  |
| ADAM17  | −1                  | .004             | −0.8                | 0.866            |                     |                  |
| ADAMTS2 | −0.8                | .153             | −2.6                | 0.242            |                     |                  |
| ADAMTS4 | 0.3                 | .644             | 1.4                 | 4.98             |                     |                  |
| ADAMTS6 | 0.8                 | .602             | −0.3                | 0.827            |                     |                  |
| ADARP1  | 0.1                 | .959             | −0.3                | 1.76             |                     |                  |
| ADD1    | −0.3                | .604             | −1                  | 0.364            |                     |                  |
| ADD3    | 0.1                 | .938             | −0.2                | 0.924            |                     |                  |
| ADGRF1  | 0.8                 | .025             | −0.9                | 0.787            |                     |                  |
| ADH1B   | −0.9                | .061             | −0.8                | 0.893            |                     |                  |
| ADH5    | −0.9                | .001             | −1.1                | 0.369            |                     |                  |
### Supplementary Table II. Continued.

| Gene         | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|--------------|-------------------|------------------|-------------------|------------------|-------------------|------------------|
| ADIPOQ       | −0.5              | .225             | −0.2              | .683             | 0.8               | .315             |
| ADIRF        | −0.9              | .028             | −0.7              | .213             | −0.3              | .829             |
| ADSL         | 0.3               | .214             | 0.1               | .893             | −0.1              | .999             |
| ADSS1        | −0.3              | .594             | 0.9               | .051             | 0.9               | .245             |
| AEBP1        | 0.3               | .349             | 0.3               | .542             | 0.4               | .613             |
| AFM          | 0.3               | .459             | −0.8              | .024             | 0.5               | .495             |
| AGL          | −0.3              | .389             | −0.4              | .4               | 0.1               | .917             |
| AGRN         | −0.7              | .02              | −0.9              | .025             | −0.5              | .501             |
| AGT          | 0.1               | .965             | −0.8              | .02              | 0.2               | .767             |
| AHCY         | 0.1               | .912             | −0.4              | .181             | −0.1              | .988             |
| AHCYLI       | 0.1               | .942             | −0.4              | .259             | 0.1               | .988             |
| AHNK         | −0.6              | .013             | −0.5              | .089             | −0.7              | .179             |
| AHSN         | −0.4              | .144             | −1.5              | <.001            | −0.4              | .449             |
| AIFM1        | −0.2              | .606             | −0.6              | .059             | −0.5              | .283             |
| AIMP2        | 0.2               | .483             | 0.2               | .723             | 0.3               | .681             |
| AIP          | −0.5              | .149             | −0.3              | .525             | −0.1              | .959             |
| AK1          | −0.8              | <.001            | −0.8              | .001             | −0.7              | .028             |
| AK2          | −0.7              | .052             | −1.6              | .001             | −1                | .173             |
| AK3          | 0.1               | .932             | −0.4              | .375             | −0.5              | .46              |
| AK4          | −1.1              | .001             | −0.6              | .15              | −0.7              | .363             |
| AK7          | 0.7               | .109             | −0.5              | .402             | −0.2              | .87              |
| AKAPI2       | 0.1               | .806             | −0.4              | .395             | 0.2               | .847             |
| AKR1A1       | −0.4              | .129             | −1                | .003             | −0.1              | .879             |
| AKR1B1       | −0.2              | .516             | −0.8              | .002             | −0.2              | .713             |
| AKR7A2       | 0.1               | .806             | −0.7              | .1               | −0.4              | .666             |
| AKR7A3       | 1.2               | .043             | 0.8               | .364             | 1                 | .48              |
| ALAD         | −0.1              | .916             | −0.7              | .076             | −0.2              | .88              |
| ALB          | −0.2              | .749             | −1.2              | .003             | 0.1               | .986             |
| ALCAM        | −0.1              | .794             | 0.4               | .291             | 0.5               | .521             |
| ALDH1A1      | −0.9              | <.001            | −1.1              | <.001            | −0.6              | .171             |
| ALDH1B1      | −1.7              | <.001            | −1.4              | .001             | −1.2              | .031             |
| ALDH1L1      | −1.1              | <.001            | −1.2              | .001             | −0.9              | .097             |
| ALDH2        | −1                | .001             | −1.2              | .001             | −0.7              | .241             |
| ALDH6A1      | −1.1              | .001             | −1.2              | .004             | −0.7              | .352             |
| ALDH7A1      | −1                | .001             | −1.2              | .001             | −0.6              | .283             |
| ALDH9A1      | −0.6              | .032             | −1                | .006             | −0.3              | .676             |
| ALDOA        | −0.4              | .046             | −0.4              | .11              | −0.2              | .746             |
| ALDOC        | −0.5              | .02              | −0.3              | .36              | 0.1               | .957             |
| ALMS1        | 0.7               | .021             | 0.2               | .78              | 0.6               | .423             |
| ALOX15B      | −0.7              | .057             | −0.9              | .053             | −0.6              | .45              |
| AMBP         | −0.3              | .338             | −0.7              | .051             | −0.2              | .851             |
| AMICO2       | 1.2               | .006             | 0.7               | .241             | 1.1               | .18              |
| AMN          | −1.9              | <.001            | −2                | .002             | −1.7              | .071             |
| AMPD2        | 0.5               | .099             | 0.7               | .103             | 0.4               | .602             |
| ANG          | −0.4              | .339             | −0.3              | .46              | 0.1               | .986             |
| ANGPTL2      | −0.7              | .046             | −0.6              | .204             | −0.5              | .626             |

(Continued on next page)
| Gene      | TAA/normal Log2FC | Adjusted P value | TBA/D/normal Log2FC | Adjusted P value | TAD/normal Log2FC | Adjusted P value |
|-----------|-------------------|------------------|---------------------|------------------|------------------|------------------|
| ANK1      | 1.3               | <.001            | 0.4                 | .306             | 0.4              | .614             |
| ANKRD31   | −2.2              | <.001            | −1.9                | .006             | −1               | .406             |
| ANKS5     | −2.3              | .001             | −1.7                | .034             | −1.2             | .384             |
| ANP52B    | −0.6              | .221             | −0.8                | .179             | −0.1             | .999             |
| ANTXR1    | −0.2              | .742             | 0.5                 | .208             | −0.3             | .772             |
| ANXA1     | −0.4              | .054             | −0.2                | .584             | −0.2             | .721             |
| ANXA11    | −0.9              | <.001            | −0.6                | .032             | −0.8             | .05              |
| ANXA2     | −0.4              | .176             | −0.4                | .202             | −0.2             | .762             |
| ANXA3     | −0.3              | .531             | 0.1                 | .9               | 0.2              | .784             |
| ANXA4     | −1.3              | <.001            | −1                  | .001             | −1               | .012             |
| ANXA5     | −1.5              | <.001            | −1.5                | <.001            | −1.2             | .137             |
| ANXA6     | −1                | <.001            | −0.7                | .019             | −0.7             | .137             |
| ANXA7     | −0.5              | .027             | −0.4                | .189             | −0.5             | .217             |
| AOC3      | −1.4              | .001             | −0.3                | .65              | −0.3             | .819             |
| APIB1     | 0.1               | .937             | −0.4                | .15              | −0.5             | .264             |
| AP2A1     | −0.2              | .536             | −0.3                | .547             | 0.1              | .998             |
| AP2A2     | −0.2              | .69              | −0.6                | .334             | −0.4             | .713             |
| AP2B1     | −0.4              | .18              | −0.8                | .024             | −0.5             | .364             |
| AP2M1     | 0.3               | .499             | 0.1                 | .946             | 0.4              | .637             |
| AP3B1     | 0.4               | .188             | −0.2                | .747             | 0.2              | .807             |
| AP3B2     | −0.7              | .126             | −0.3                | .63              | 0.2              | .894             |
| AP3S1     | −0.3              | .552             | −0.2                | .801             | 0.1              | .959             |
| APCS      | −1.9              | <.001            | −2.1                | <.001            | −1.3             | .059             |
| APEH      | −0.3              | .493             | −0.9                | .045             | −0.7             | .293             |
| APEX1     | 0.2               | .576             | 0.7                 | .106             | 0.7              | .266             |
| APMAP     | 0.6               | .002             | 0.5                 | .038             | 0.5              | .262             |
| APOA1     | −0.3              | .287             | −1.3                | .001             | −0.3             | .729             |
| APOA2     | −0.1              | .828             | −1.2                | .017             | 0.6              | .584             |
| APOA4     | −0.9              | <.001            | −1.3                | <.001            | −1               | .023             |
| APOB      | 0.8               | .021             | −0.9                | .05              | 0.7              | .356             |
| APOC1     | −0.1              | .964             | −0.8                | .07              | −0.2             | .844             |
| APOC2     | 0.4               | .372             | −1.2                | .017             | 0.6              | .584             |
| APOC3     | 0.1               | .877             | −1.6                | .001             | 0.3              | .792             |
| APOD      | 0.7               | .012             | −0.6                | .127             | 0.5              | .432             |
| APOE      | 0.5               | .144             | −0.6                | .204             | 0.5              | .468             |
| APOF      | 0.1               | .905             | −0.4                | .27              | −0.1             | .889             |
| APOH      | −0.9              | .001             | −1.1                | .001             | −0.7             | .165             |
| APOL1     | 0.7               | .061             | −0.8                | .084             | 0.7              | .362             |
| APOM      | 0.8               | .004             | −0.2                | .627             | 0.5              | .378             |
| APP       | −1.9              | <.001            | −1.8                | <.001            | −1.9             | .001             |
| APPL1     | −0.1              | .941             | −0.1                | .862             | −0.2             | .773             |
| APRT      | 0.3               | .277             | −0.6                | .053             | 0.2              | .762             |
| AQP1      | −0.5              | .114             | −0.6                | .122             | 0.1              | .979             |
| ARCN1     | 0.3               | .217             | −0.1                | .944             | −0.1             | .941             |
| ARF4      | 0.7               | .01              | 0.3                 | .455             | 0.7              | .244             |
| ARFS      | −0.2              | .554             | 0.5                 | .223             | −0.1             | .998             |
| Gene          | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|--------------|-------------------|------------------|-------------------|------------------|-------------------|------------------|
| ARFIP1       | -1                | <.001            | -11               | .001             | -0.7              | .154             |
| ARGI         | -1.9              | <.001            | -11               | .012             | -1.7              | .01              |
| ARHGAP1      | -0.5              | .003             | -0.6              | .009             | -0.2              | .714             |
| ARHGAP11A    | 1.4               | .009             | 1                 | 1.74             | 1.5               | 1.47             |
| ARHGAP31     | -0.8              | 1.55             | -1                | 1.74             | 0.5               | 1.725            |
| ARHGAP40     | -0.6              | .08              | -0.8              | .055             | -0.3              | .729             |
| ARHGAP9      | -1.1              | .081             | -1.1              | .187             | 0.2               | .907             |
| ARHGDA       | -0.7              | .001             | -0.8              | .002             | -0.3              | .48              |
| ARHGDB       | 0.6               | .004             | 0.5               | .09              | 0.3               | 0.692            |
| ARHGEF37     | -2.1              | <.001            | -1.5              | .024             | -0.9              | 4.52             |
| ARL6IP5      | 0.2               | 0.438            | 0.4               | 0.095            | 0.3               | 0.521            |
| ARL8B        | -0.8              | 2.06             | -0.2              | 0.872            | -0.1              | 0.995            |
| ARM5C        | -0.1              | 0.909            | -0.5              | 0.642            | -0.7              | 0.729            |
| ARNTL2       | -1                | 0.042            | -1.6              | 0.012            | -1                | 0.369            |
| ARPC1A       | -0.7              | 0.009            | -0.6              | 0.056            | -0.3              | 0.656            |
| ARPC1B       | 0.4               | 0.064            | 0.4               | 0.151            | 0.3               | 0.521            |
| ARPC2        | 0.2               | 0.548            | 0.2               | 0.605            | 0.2               | 0.768            |
| ARPC3        | 0.1               | 0.847            | -0.1              | 0.813            | -0.1              | 0.959            |
| ARPC4        | 0.2               | 0.408            | -0.2              | 0.651            | 0.2               | 0.679            |
| ARPC5        | -0.4              | 0.279            | -1.1              | 0.003            | -0.4              | 0.656            |
| ARPC5L       | -1.2              | 0.001            | -1.6              | 0.001            | -0.8              | 0.294            |
| ASAHI        | 0.2               | 0.604            | -0.6              | 0.058            | 1                 | 0.988            |
| ASNA         | -0.3              | 0.336            | -0.7              | 0.021            | -0.2              | 0.777            |
| ASPH         | -0.5              | 0.241            | -0.7              | 0.191            | -0.8              | 0.412            |
| ASPN         | 1.3               | 0.001            | -0.1              | 0.946            | 1.2               | 0.118            |
| ASPN         | -1.1              | 0.001            | -1                | 0.013            | -0.6              | 0.46             |
| ATAD2B       | 0.5               | 0.318            | 0.2               | 0.847            | 1                 | 3.044            |
| ATIC         | 0.1               | 0.747            | -0.2              | 0.701            | 0.3               | 0.676            |
| ATL3         | -0.2              | 0.524            | 0.3               | 0.523            | 0.2               | 0.829            |
| ATOX1        | -1                | 0.001            | -1.5              | 0.001            | -0.9              | 0.142            |
| ATP1A1       | 0.4               | 0.238            | 0.6               | 0.189            | 0.6               | 0.46             |
| ATP2A2       | -0.3              | 0.542            | 0.3               | 0.593            | -0.1              | 0.994            |
| ATP2B4       | -0.3              | 0.479            | 0.1               | 0.955            | -0.3              | 0.789            |
| ATP5A1A      | -0.3              | 0.138            | -0.5              | 0.032            | -0.3              | 0.365            |
| ATP5A1B      | -0.4              | 0.091            | -1                | 0.002            | -0.6              | 0.283            |
| ATP5A1C      | 0.1               | 0.8              | -0.5              | 0.067            | -0.1              | 0.912            |
| ATP5A1D      | -0.3              | 0.323            | -0.7              | 0.026            | -0.3              | 0.555            |
| ATP5ME       | -1                | 0.002            | -0.8              | 0.045            | -0.3              | 0.75             |
| ATP5MF       | 1.1               | 0.026            | 1                 | 1.07             | 0.9               | 3.85             |
| ATP5MG       | -0.7              | 0.046            | -0.9              | 0.048            | -0.4              | 0.676            |
| ATP5PB       | -0.2              | 0.586            | -0.7              | 0.11             | 0.1               | 0.944            |
| ATP5PD       | -0.7              | 0.002            | -0.9              | 0.003            | -0.6              | 0.177            |
| ATP5PF       | -0.5              | 0.105            | -1.1              | 0.005            | -0.4              | 0.546            |
| ATP5PO       | -0.2              | 0.427            | -0.8              | 0.01             | -0.4              | 0.492            |
| ATP6V1A      | 0.1               | 0.937            | -0.7              | 0.043            | -0.2              | 0.864            |
| ATP6V1B2     | -0.1              | 0.924            | -0.7              | 0.055            | -0.2              | 0.778            |

(Continued on next page)
| Gene       | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|------------|-------------------|------------------|-------------------|------------------|-------------------|------------------|
| ATP6V1E1   | 0.5               | 0.71             | –0.3              | 0.355            | 0.2               | 0.771            |
| ATP6V1H    | 0.3               | 0.25             | –0.2              | 0.619            | –0.1              | 0.994            |
| ATP8A1     | –0.2              | 0.875            | –0.7              | 0.395            | –0.2              | 0.907            |
| ATR        | –0.3              | 0.414            | 0.4               | 0.432            | 0.8               | 0.255            |
| AXIN1      | –0.1              | 0.916            | –0.3              | 0.854            | 1.1               | 0.562            |
| AZGP1      | –0.5              | 0.135            | –1.3              | 0.001            | –0.3              | 0.734            |
| B2M        | 0.4               | 0.153            | –0.5              | 0.097            | 0.2               | 0.731            |
| BAG2       | –1.1              | 0.001            | –0.4              | 0.374            | –0.6              | 0.446            |
| BANF1      | –1.6              | <.001            | –2.1              | <.001            | –1.1              | 0.132            |
| BASP1      | 0.1               | 0.881            | 0.3               | 0.434            | 0.2               | 0.792            |
| BBS9       | 0.2               | 0.55             | 0.4               | 0.285            | 0.4               | 0.498            |
| BCAM       | –1.2              | <.001            | –0.5              | 0.202            | –0.4              | 0.589            |
| BCAP31     | 0.8               | 0.096            | 0.4               | 0.555            | 1.1               | 0.212            |
| BCL10      | 0.4               | 0.333            | 1                 | 0.023            | 0.5               | 0.488            |
| BDH2       | –1.2              | 0.003            | –1.2              | 0.02             | –0.9              | 0.309            |
| BGN        | –1.3              | 0.001            | –1.3              | 0.011            | –0.8              | 0.345            |
| BLM        | –0.1              | 0.979            | –0.6              | 0.449            | 0.3               | 0.85             |
| BLMH       | 0.5               | 0.266            | –0.2              | 0.817            | –0.2              | 0.869            |
| BLVRA      | 0.2               | 0.604            | –0.1              | 0.745            | 0.1               | 0.967            |
| BLVRA      | 0.5               | 0.06             | –0.4              | 0.204            | 0.3               | 0.589            |
| BNC2       | –0.3              | 0.46             | –0.3              | 0.476            | 0.1               | 0.939            |
| BPGM       | 0.6               | 0.123            | –0.5              | 0.361            | 0.1               | 0.939            |
| BPNT1      | –1.4              | 0.001            | –1.7              | 0.001            | –1.4              | 0.052            |
| BRK1       | –0.1              | 0.971            | –0.2              | 0.731            | 0.1               | 0.959            |
| BSG        | –1                | 0.052            | 0.1               | 0.939            | 0.2               | 0.917            |
| C11orf54   | –1.4              | <.001            | –1.6              | <.001            | –1.2              | 0.03             |
| C11orf96   | –1.3              | 0.002            | –0.6              | 0.334            | –0.2              | 0.889            |
| C1orf98    | –0.2              | 0.657            | –0.4              | 0.347            | –0.1              | 0.919            |
| C1QA       | –1.2              | 0.003            | –0.6              | 0.335            | –0.4              | 0.73             |
| C1QB       | –0.7              | 0.07             | –0.4              | 0.549            | –0.4              | 0.677            |
| C1QC       | –0.9              | 0.032            | –0.8              | 0.165            | –0.5              | 0.677            |
| C1R        | 0.2               | 0.604            | 0.1               | 0.924            | 0.2               | 0.841            |
| C1S        | 0.3               | 0.207            | –0.1              | 0.96             | 0.4               | 0.431            |
| C2         | –0.5              | 0.16             | –0.7              | 0.156            | 0.4               | 0.715            |
| C2orf23    | –0.4              | 0.41             | 0.1               | 0.966            | 0.4               | 0.761            |
| C2orf78    | –1.6              | 0.001            | –0.5              | 0.398            | –1.7              | 0.034            |
| C3         | 0.1               | 0.957            | –0.6              | 0.043            | 0.2               | 0.762            |
| C4A        | 0.2               | 0.537            | –0.1              | 0.901            | 0.6               | 0.315            |
| C4B        | 0.4               | 0.196            | –0.1              | 0.962            | 0.4               | 0.542            |
| C4BPA      | 0.3               | 0.342            | –0.5              | 0.179            | 0.3               | 0.668            |
| C4BPB      | 0.8               | 0.038            | –0.6              | 0.196            | 0.6               | 0.475            |
| C5         | 0.1               | 0.965            | –0.4              | 0.24             | 0.2               | 0.781            |
| C6         | –0.4              | 0.109            | –0.4              | 0.27             | –0.1              | 0.883            |
| C7         | –0.6              | 0.031            | –0.5              | 0.213            | –0.4              | 0.582            |
| C8A        | –0.3              | 0.276            | –0.1              | 0.854            | 0.3               | 0.655            |
| C8B        | 0.1               | 0.899            | –0.1              | 0.825            | 0.5               | 0.487            |
### Supplementary Table II. Continued.

| Gene     | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|----------|-------------------|-----------------|--------------------|-----------------|--------------------|-----------------|
| C8G      | 0.5               | 1.29            | -0.9              | 0.019           | -0.2              | 0.871           |
| C8orf74  | 2                 | <.001           | 2.9               | <.001           | 2                 | 0.013           |
| C9       | -0.6              | 0.32            | -0.5              | 0.219           | -0.3              | 0.676           |
| CA1      | 0.6               | 0.06            | -0.9              | 0.019           | -0.1              | 0.997           |
| CAI23    | -1.9              | 0.001           | -0.9              | 0.211           | -2.1              | 0.032           |
| CA2      | 0.3               | 0.433           | -0.9              | 0.014           | -0.4              | 0.649           |
| CA3      | -1.8              | <.001           | -2.4              | <.001           | -2.1              | 0.004           |
| CAB39    | -0.3              | 0.561           | -0.4              | 0.443           | -0.4              | 0.677           |
| CACNA2D1 | -1.1              | 0.001           | -0.8              | 0.054           | -0.7              | 0.345           |
| CACYBP   | -0.3              | 0.336           | -0.3              | 0.434           | -0.4              | 0.593           |
| CALD1    | -1.1              | 0.002           | -0.9              | 0.045           | -0.6              | 0.446           |
| CALR     | -0.1              | 0.873           | -0.1              | 0.82            | 0.1               | 0.949           |
| CALU     | -0.3              | 0.272           | -0.5              | 0.6             | -0.6              | 0.194           |
| CAMK2G   | -0.9              | 0.004           | 0.2               | 0.785           | -0.5              | 0.46            |
| CAND1    | 0.4               | 0.175           | 0.4               | 0.218           | 0.8               | 0.15            |
| CANX     | 0.6               | 0.003           | 0.6               | 0.007           | 0.5               | 0.153           |
| CAP1     | -0.6              | <.001           | -0.8              | 0.001           | -0.7              | 0.025           |
| CAP2     | -1.4              | <.001           | -1.1              | 0.005           | -0.9              | 0.129           |
| CAPG     | 0.3               | 0.413           | -0.5              | 0.17            | -0.3              | 0.759           |
| CAPN1    | 0.1               | 0.872           | -0.1              | 0.708           | 0.1               | 0.903           |
| CAPN2    | -0.6              | 0.011           | -0.4              | 0.196           | -0.1              | 0.967           |
| CAPN5    | -0.6              | 0.002           | -0.7              | 0.003           | -0.5              | 0.206           |
| CAPZ1    | 0.6               | 0.01            | 0.1               | 0.872           | 0.2               | 0.851           |
| CAPZ2    | -0.7              | 0.002           | -1.1              | 0.001           | -0.6              | 0.177           |
| CAPZ2B   | 0.1               | 0.912           | 0.2               | 0.431           | 0.2               | 0.783           |
| CARD10   | 1.6               | 0.001           | 0.7               | 0.289           | 0.6               | 0.653           |
| CASKIN2  | -0.8              | 0.024           | -0.9              | 0.053           | -0.5              | 0.553           |
| CASP8    | -0.4              | 0.277           | 0.2               | 0.759           | 0.3               | 0.762           |
| CAST     | -0.1              | 0.762           | -0.6              | 0.036           | -0.4              | 0.481           |
| CAT      | 0.5               | 0.038           | -0.1              | 0.924           | 0.2               | 0.807           |
| CATSPERG | -2.8              | <.001           | -2.5              | <.001           | -1.7              | 0.048           |
| CAV1     | -0.5              | 0.279           | 0.3               | 0.606           | 0.3               | 0.762           |
| CAV2     | 0.6               | 0.063           | 1                 | 0.008           | 1.2               | 0.031           |
| CAVIN1   | -1.1              | 0.002           | -0.9              | 0.053           | -0.3              | 0.771           |
| CAVIN2   | 0.9               | 0.002           | 0.5               | 0.141           | 0.2               | 0.783           |
| CAVIN3   | -1                 | 0.002           | -0.5              | 0.328           | -0.2              | 0.881           |
| CBLN2    | -0.7              | 0.012           | -0.9              | 0.009           | -0.3              | 0.754           |
| CBR1     | -0.6              | 0.022           | -0.9              | 0.008           | -0.3              | 0.691           |
| CBR3     | -1.3              | 0.002           | -1.1              | 0.045           | -1                | 0.253           |
| CCAR1    | -0.4              | 0.467           | -1.8              | 0.001           | 0.1               | 0.967           |
| CCDC158  | -1.1              | 0.007           | -0.9              | 0.107           | -0.4              | 0.739           |
| CCDC194  | -1.5              | 0.001           | -0.6              | 0.252           | -0.7              | 0.444           |
| CCDC25   | 3.7               | 0.001           | 2.2               | 0.116           | 0.8               | 0.771           |
| CCDC6    | -1.5              | <.001           | -1.2              | 0.001           | -0.6              | 0.272           |
| CCDC69   | 0.1               | 0.912           | 0.7               | 0.336           | 0.6               | 0.677           |
| CCDC80   | 0.8               | 0.004           | 0.6               | 0.104           | 0.7               | 0.281           |

(Continued on next page)
| Gene       | Log$_2$FC TAA/normal | Adjusted $P$ value | Log$_2$FC TBAD/normal | Adjusted $P$ value | Log$_2$FC TADA/normal | Adjusted $P$ value |
|------------|----------------------|-------------------|-----------------------|-------------------|-----------------------|-------------------|
| CCN3       | −1.9                 | <.001             | −1.9                  | <.001             | −1.5                  | .021              |
| CCS        | −0.5                 | .199              | −1.1                  | .022              | −1.1                  | .153              |
| CCT2       | −0.1                 | .746              | −0.4                  | .119              | −0.2                  | .725              |
| CCT3       | −0.1                 | .856              | −0.4                  | .294              | 0.1                   | .954              |
| CCT4       | 0.5                  | .017              | 0.5                   | .054              | 0.4                   | .309              |
| CCT5       | 0.1                  | .951              | −0.3                  | .452              | −0.2                  | .839              |
| CCT6A      | −0.2                 | .531              | −0.1                  | .916              | −0.2                  | .77               |
| CCT7       | 0.5                  | .027              | 0.3                   | .374              | 0.4                   | .422              |
| CCT8       | 0.2                  | .586              | −0.2                  | .724              | 0.1                   | .939              |
| CD109      | −0.2                 | .774              | −0.2                  | .754              | 0.4                   | .621              |
| CD14       | 0.7                  | .107              | 0.3                   | .568              | 0.5                   | .634              |
| CD151      | −0.4                 | .301              | 0.1                   | .892              | 0.1                   | .96               |
| CD163      | 1                    | <.001             | 0.9                   | .01               | 0.8                   | .137              |
| CD34       | −0.9                 | .003              | −0.8                  | .055              | −0.2                  | .81               |
| CD44       | −0.2                 | .322              | 0.1                   | .959              | 0.1                   | .946              |
| CD47       | 0.1                  | .966              | 0.1                   | .889              | 0.2                   | .81               |
| CD59       | −0.2                 | .746              | 0.2                   | .675              | 0.4                   | .668              |
| CD5L       | 0.1                  | .873              | −1                    | .011              | 0.2                   | .885              |
| CD81       | −0.4                 | .431              | −0.4                  | .521              | 0.1                   | .946              |
| CD9        | −0.1                 | .861              | 0.1                   | .854              | 0.4                   | .677              |
| CD97       | −1.5                 | <.001             | −1.8                  | <.001             | −1.6                  | 0.019             |
| CD99       | −0.4                 | .374              | −1.2                  | .005              | −0.3                  | .77               |
| CDC25C     | −1                   | .034              | −1.8                  | .002              | −1.3                  | .138              |
| CDC37      | −0.1                 | .789              | 0.3                   | .391              | 0.2                   | .825              |
| CDC42      | 0.5                  | .017              | 0.6                   | .039              | 0.6                   | .172              |
| CDC5L      | −0.2                 | .759              | −1.2                  | .002              | 0.3                   | .719              |
| CDH1       | −0.6                 | .18               | −0.4                  | .533              | −0.4                  | .762              |
| CDH13      | −0.9                 | .007              | −0.3                  | .606              | 0.3                   | .734              |
| CDHR3      | 0.5                  | .368              | −0.5                  | .401              | 0.6                   | .536              |
| CDKSRAP3   | −0.1                 | .87               | −0.3                  | .607              | −0.4                  | .729              |
| CDKN2AIP   | 1.1                  | .069              | 0.4                   | .645              | 1.5                   | .206              |
| CELSR3     | −3.3                 | <.001             | −2.3                  | .002              | −3.2                  | .002              |
| CENPE      | −1.2                 | .007              | −0.6                  | .327              | −0.1                  | .972              |
| CES1       | −1.3                 | <.001             | −0.4                  | .349              | −0.4                  | .587              |
| CFB        | −0.3                 | .483              | −0.6                  | .127              | 0.4                   | .648              |
| CFD        | −1.3                 | <.001             | −1.9                  | <.001             | −1                    | .066              |
| CFH        | 0.1                  | .899              | −0.5                  | .072              | 0.3                   | .545              |
| CFHR1      | −0.7                 | .103              | −0.8                  | .122              | 0.2                   | .899              |
| CFHR2      | −0.3                 | .312              | −0.5                  | .156              | 0.2                   | .792              |
| CFHR5      | −0.1                 | .837              | −0.3                  | .654              | 0.7                   | .36               |
| CFI        | −0.1                 | .811              | −1                    | .006              | 0.3                   | .659              |
| CFL1       | −0.6                 | .001              | −0.7                  | .002              | −0.5                  | .151              |
| CFL2       | −1.8                 | <.001             | −1.5                  | .001              | −0.9                  | .18               |
| CFP        | −1.8                 | <.001             | −1.4                  | <.001             | −1.5                  | .004              |
| CHCHD3     | −0.8                 | .028              | −0.3                  | .652              | −0.3                  | .734              |
| CHD8       | 0.8                  | <.001             | 0.6                   | .024              | 0.6                   | .124              |
| Gene     | Log2FC TAA/normal | Adjusted P value | Log2FC TBAD/normal | Adjusted P value | Log2FC TADA/normal | Adjusted P value |
|----------|-------------------|------------------|--------------------|------------------|--------------------|------------------|
| CHMP2A   | 0.2               | 0.586            | 0.4                | 0.418            | 0.3                | 0.704            |
| CHMP4B   | 0.9               | 0.01             | 0.4                | 0.417            | 0.7                | 0.237            |
| CHST14   | 1.1               | 0.008            | 0.1                | 0.903            | 0.4                | 0.714            |
| CHTF18   | 2.3               | 0.001            | 0.1                | 0.733            | 1.5                | 0.234            |
| CILP2    | 0.3               | 0.653            | 0.1                | 0.98             | 1.5                | 0.084            |
| CIRBP    | 0.2               | 0.742            | 0.8                | 0.072            | 0.5                | 0.611            |
| CISD1    | 0.4               | 0.212            | 0.3                | 0.561            | 0.4                | 0.659            |
| CKAP2    | 0.5               | 0.055            | 0.2                | 0.654            | 0.6                | 0.219            |
| CKAP4    | 0.5               | 0.117            | 0.3                | 0.583            | 0.3                | 0.762            |
| CKB      | 1.8               | 0.001            | 2.0                | 0.001            | 1.4                | 0.01             |
| CKM      | 0.5               | 0.001            | 1.6                | 0.001            | 0.2                | 0.001            |
| CLEC11A  | 0.7               | 0.001            | 0.2                | 0.98             | 1.5                | 0.084            |
| CLEC3B   | 0.7               | 0.012            | 0.1                | 0.654            | 0.6                | 0.219            |
| CLC1     | 0.5               | 0.008            | 0.2                | 0.609            | 0.2                | 0.612            |
| CLC4     | 0.8               | 0.008            | 0.3                | 0.018            | 0.3                | 0.687            |
| CLTA     | 0.7               | 0.038            | 0.6                | 0.184            | 0.1                | 0.979            |
| CLTB     | 0.6               | 0.041            | 0.7                | 0.055            | 0.4                | 0.582            |
| CLTC     | 0.4               | 0.133            | 0.3                | 0.358            | 0.4                | 0.422            |
| CLU      | 0.8               | 0.004            | 0.1                | 0.004            | 0.6                | 0.308            |
| CMA1     | 0.2               | 0.64             | 0.3                | 0.41             | 0.1                | 0.944            |
| CMBL     | 0.1               | 0.001            | 0.1                | 0.004            | 0.7                | 0.291            |
| CMPK1    | 0.6               | 0.007            | 0.9                | 0.002            | 0.3                | 0.659            |
| CMYA5    | 0.2               | 0.812            | 1.1                | 0.027            | 0.1                | 0.976            |
| CN166    | 0.5               | 0.416            | 0.8                | 0.215            | 0.4                | 0.773            |
| CNBP     | 0.3               | 0.55             | 0.4                | 0.467            | 0.4                | 0.681            |
| CNDP2    | 0.5               | 0.105            | 0.9                | 0.006            | 0.2                | 0.787            |
| CNN1     | 0.5               | 0.001            | 1.6                | 0.004            | 1.2                | 0.182            |
| ANN2     | 0.1               | 0.766            | 0.1                | 0.837            | 0.2                | 0.762            |
| CN3      | 0.2               | 0.774            | 0.3                | 0.645            | 0.3                | 0.79             |
| CNPY2    | 0.3               | 0.482            | 0.4                | 0.331            | 0.1                | 0.956            |
| CNRIP1   | 0.7               | 0.001            | 1.0                | 0.001            | 0.7                | 0.085            |
| CNTN1    | 0.9               | 0.001            | 0.7                | 0.033            | 0.5                | 0.377            |
| COASY    | 0.4               | 0.37             | 0.4                | 0.518            | 0.3                | 0.771            |
| COG5     | 0.4               | 0.055            | 0.2                | 0.492            | 0.1                | 0.881            |
| COL12A1  | 0.8               | 0.029            | 0.2                | 0.81             | 0.5                | 0.656            |
| COL14A1  | 0.8               | 0.025            | 0.4                | 0.395            | 0.3                | 0.782            |
| COL15A1  | 0.4               | 0.162            | 0.6                | 0.092            | 0.4                | 0.558            |
| COL18A1  | 0.2               | <0.001           | 1.5                | 0.001            | 1.4                | 0.031            |
| COL1A1   | 0.7               | 0.177            | 1.6                | 0.009            | 1.7                | 0.067            |
| COL1A2   | 0.4               | 0.493            | 1.3                | 0.024            | 1.3                | 0.149            |
| COL2A1   | 0.4               | 0.52             | 1.9                | 0.024            | 1.4                | 0.115            |
| COL3A1   | 0.4               | 0.025            | 2.6                | 0.001            | 2.4                | 0.012            |
| COL4A1   | 0.4               | <0.001           | 0.4                | 0.396            | 0.6                | 0.503            |
| COL4A2   | 0.1               | 0.001            | 0.1                | 0.987            | 0.2                | 0.851            |
| COL4A3   | 0.7               | <0.001           | 0.5                | 0.354            | 0.8                | 0.329            |
| COL6A1   | 0.2               | 0.702            | 0.3                | 0.473            | 0.2                | 0.081            |

(Continued on next page)
| Gene     | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|----------|-------------------|------------------|--------------------|------------------|--------------------|------------------|
| COL6A2   | –0.1              | .952             | 0.6                | .171             | 0.4                | .687             |
| COL6A3   | 0.2               | .709             | –0.2               | .726             | 0.4                | .538             |
| COL7A1   | 0.2               | .678             | –1.1               | .058             | –0.3               | .83              |
| COL8A1   | –0.6              | .269             | 1.1                | .074             | 0.8                | .412             |
| COLGALT1 | 0.2               | .737             | 0.1                | .84              | 0.4                | .582             |
| COMT     | –0.3              | .441             | –0.3               | .542             | –0.2               | .879             |
| COPA     | 0.9               | .005             | 0.9                | .02              | 0.8                | .237             |
| COPB1    | 0.9               | .004             | 0.7                | .079             | 0.5                | .533             |
| COPB2    | 1                 | .003             | 0.6                | .174             | 0.9                | .177             |
| COPC1    | 0.5               | .088             | 0.4                | .322             | 0.2                | .845             |
| COPSF    | 0.5               | .052             | 0.3                | .53              | 0.3                | .743             |
| COPSF6   | –0.7              | .031             | –0.5               | .321             | –0.3               | .762             |
| CORO1A   | 1.1               | .001             | 1                  | .013             | 0.8                | .25              |
| CORO1B   | –0.5              | .08              | –0.7               | .028             | –0.3               | .713             |
| CORO1C   | –0.4              | .121             | –0.4               | .234             | –0.1               | .957             |
| COTL1    | 0.4               | .147             | –0.1               | .928             | 0.2                | .773             |
| COX4I1   | –0.3              | .61              | –0.6               | .337             | –0.5               | .665             |
| COX5A    | –0.9              | .001             | –1.5               | <0.001           | –1.1               | .05              |
| COX5B    | –0.1              | .792             | –0.9               | .013             | –0.7               | .276             |
| COX6B1   | –0.7              | .042             | –1                 | .021             | –0.3               | .797             |
| COX6C    | 0.3               | .704             | 0.4                | .536             | –0.4               | .771             |
| COX7A2   | 0.2               | .679             | –0.6               | .202             | –0.4               | .666             |
| CP        | 0.1               | .871             | –0.4               | .24              | 0.4                | .475             |
| CPA3     | 0.3               | .571             | –0.6               | .319             | –0.5               | .647             |
| CPB2     | 0.8               | .003             | 0.4                | .237             | 0.6                | .314             |
| CPNE1    | –0.7              | .006             | –0.3               | .442             | –0.5               | .407             |
| CPNE3    | –0.5              | 1.79             | 0.3                | .614             | –0.3               | .734             |
| CPPED1   | –0.5              | .181             | –0.8               | .064             | –0.1               | .954             |
| CPQ       | 1                 | .001             | –1                 | .003             | –0.7               | .231             |
| CPXM2    | –1.3              | .001             | –1.1               | .02              | –0.8               | .362             |
| CREG1    | –1                | .019             | –1                 | .051             | –0.5               | .626             |
| CRIP1    | 1.9               | .071             | 1.1                | .428             | 1.5                | .536             |
| CRIP2    | –0.9              | .027             | –0.5               | .407             | –0.2               | .852             |
| CRK       | –1.1              | .004             | –1                 | .042             | –0.7               | .379             |
| CRKL     | –0.4              | .244             | –0.6               | .086             | 0.1                | .959             |
| CRLFI    | –0.7              | .058             | –1                 | .026             | –1                 | .126             |
| CRP       | 0.9               | .053             | 0.4                | .575             | 1.7                | .055             |
| CRYAB     | –2                | <0.001           | –1.6               | <0.001           | –1.2               | .04              |
| CRYL1     | –1.5              | <0.001           | –1.3               | .006             | –0.8               | .315             |
| CRYZ      | –1.1              | <0.001           | –1.3               | <0.001           | –0.7               | .147             |
| CS        | 0.3               | .226             | 0.1                | .811             | –0.1               | .899             |
| CSDE1     | –1.1              | .051             | –0.8               | .259             | 1                  | .431             |
| CSK       | 0.9               | .004             | 0.4                | .317             | 0.5                | .485             |
| CSPG4     | –1.4              | <0.001           | –1                 | .003             | –0.9               | .084             |
| CSPG5     | –1.3              | .014             | –1.1               | .118             | –0.3               | .823             |
| CSRPI     | –1.4              | .001             | –1.1               | .019             | –0.6               | .498             |
### Supplementary Table II. Continued.

| Gene      | Log$_2$FC TAA/normal | Adjusted $P$ value | Log$_2$FC TBAD/normal | Adjusted $P$ value | Log$_2$FC TADA/normal | Adjusted $P$ value |
|-----------|----------------------|--------------------|-----------------------|--------------------|-----------------------|--------------------|
| CSRP2     | 0.8                  | .051               | -0.4                  | .521               | 0.4                  | .712               |
| CSTB      | -0.5                 | .022               | -0.8                  | .002               | -0.2                 | .735               |
| CTGF      | 1.2                  | .002               | 0.4                   | .445               | 0.4                  | .725               |
| CTHRC1    | -0.1                 | .839               | -0.9                  | .013               | -1                   | .056               |
| CTNNA1    | 0.8                  | .233               | 0.6                   | .451               | 0.6                  | .731               |
| CTNND1    | 0.7                  | .021               | 0.3                   | .523               | 0.4                  | .542               |
| CTPS1     | -0.7                 | .027               | -0.6                  | .127               | -0.5                 | .58                |
| CTSB      | 0.5                  | .144               | -0.1                  | .923               | 0.3                  | .78                |
| CTSC      | 0.7                  | .019               | -0.2                  | .787               | 0.8                  | .23                |
| CTSD      | 0.2                  | 4.55               | -0.5                  | .118               | 0.2                  | .815               |
| CTSF      | -1.2                 | .001               | -0.9                  | .034               | -0.5                 | .503               |
| CTSG      | 1                    | .002               | 1.2                   | .008               | 0.5                  | .562               |
| CTSZ      | 0.1                  | .946               | -0.1                  | .765               | -0.2                 | .815               |
| CTTN      | 0.3                  | .451               | 0.5                   | .143               | 0.2                  | .771               |
| CUL9      | 0.3                  | .773               | -1.5                  | .073               | -0.1                 | .956               |
| CUTA      | -1.4                 | <.001              | -1.7                  | <.001              | -0.9                 | .161               |
| CXCL12    | 0.1                  | .965               | 0.3                   | .677               | 0.2                  | .88                |
| CXCL16    | -1.3                 | .003               | -1.3                  | .02                | -0.8                 | .422               |
| CYB5R1    | 0.7                  | .057               | 0.6                   | .21                | 0.7                  | .349               |
| CYB5R3    | 0.1                  | .949               | -0.2                  | .765               | 0.4                  | .668               |
| CYBRD1    | 0.8                  | .079               | 0.4                   | .597               | 1.6                  | .058               |
| CYCS      | 0.3                  | .383               | -0.4                  | .335               | -0.3                 | .772               |
| CYFIP1    | 0.4                  | .149               | 0.5                   | .221               | 0.5                  | .369               |
| CYP20A1   | 0.2                  | .873               | -0.5                  | .683               | 0.4                  | .852               |
| CYP27B1   | 1                    | .028               | -0.9                  | .129               | 0.4                  | .762               |
| CYP2C8    | 0.2                  | .889               | 0.1                   | .949               | 0.5                  | .771               |
| DAAM2     | -0.3                 | .676               | -0.8                  | .354               | -0.9                 | .477               |
| DADI      | 1.2                  | .017               | 1.6                   | .009               | 1.5                  | .125               |
| DAG1      | -1.6                 | <.001              | -1.1                  | .006               | -0.8                 | .198               |
| DARS1     | 0.3                  | .213               | 0.5                   | .119               | 0.3                  | .656               |
| DBI       | -1.2                 | <.001              | -1                    | .001               | -0.8                 | .067               |
| DBN1      | -0.5                 | .11                 | -0.8                  | .018               | -0.7                 | .225               |
| DBN1L     | -0.2                 | .418               | -0.8                  | .006               | -0.2                 | .725               |
| DCN       | -1.1                 | .003               | -2.9                  | <.001              | -2.4                 | .001               |
| DCPS      | 0.1                  | .965               | -0.7                  | .028               | -0.2                 | .817               |
| DCTN1     | -0.4                 | .218               | -0.3                  | .433               | -0.4                 | .619               |
| DCTN2     | -0.6                 | .013               | -0.8                  | .005               | -0.5                 | .318               |
| DCTN3     | -0.7                 | .025               | -0.7                  | .067               | -0.3                 | .679               |
| DDAH1     | -2                   | <.001              | -2                    | .001               | -1.5                 | .056               |
| DDAH2     | -1                   | <.001              | -1                    | .001               | -0.5                 | .281               |
| DDB1      | 0.3                  | .359               | 0.1                   | .928               | 0.5                  | .561               |
| DDOST     | 0.4                  | .201               | -0.2                  | .589               | 0.2                  | .773               |
| DDR1      | -2.1                 | <.001              | -1.4                  | .036               | -0.9                 | .407               |
| DDT       | -0.9                 | .002               | -1.6                  | <.001              | -0.6                 | .359               |
| DDX1      | -0.3                 | .479               | -0.5                  | .201               | -0.1                 | .959               |
| DDX25     | 1.2                  | .001               | 1.5                   | .002               | 1.1                  | .125               |
### Supplementary Table II. Continued.

| Gene   | Log₂FC TAA/normal | Adjusted P value<sup>a</sup> | Log₂FC TBAD/normal | Adjusted P value<sup>a</sup> | Log₂FC TADA/normal | Adjusted P value<sup>a</sup> |
|--------|-------------------|-----------------------------|--------------------|-----------------------------|--------------------|-----------------------------|
| DDX39B | 0.8               | .063                        | 0.9                | .104                        | 1.3                | .129                        |
| DDX3X  | −0.2              | .705                        | 0.3                | .624                        | −0.3              | .713                        |
| DDX6   | −0.1              | .942                        | −0.1               | .888                        | −0.5              | .665                        |
| DECR1  | −0.3              | .48                         | −0.8               | .045                        | −0.8              | .191                        |
| DES    | −2                | <.001                       | −2.7               | <.001                       | −2                | <.001                       |
| DHAK   | −0.8              | .009                        | −1.1               | .003                        | −0.9              | .102                        |
| DHRS7  | 0.2               | .812                        | 0.8                | .337                        | 0.6               | .737                        |
| DHX37  | −1.4              | .008                        | −0.5               | .531                        | 0.6               | .677                        |
| DHX9   | 0.4               | .249                        | 0.3                | .537                        | 0.5               | .503                        |
| DIABLO | −0.9              | .008                        | −0.7               | .126                        | −0.6              | .418                        |
| DKK3   | −1.7              | <.001                       | −2                 | <.001                       | −1.5              | .021                        |
| DLAT   | −0.7              | .011                        | −0.7               | .028                        | −0.6              | .308                        |
| DLGAP1 | −0.6              | .372                        | −0.7               | .372                        | −0.1              | .953                        |
| DLST   | −0.4              | .084                        | −0.5               | .109                        | −0.5              | .359                        |
| DMD    | −0.5              | .103                        | −0.2               | .649                        | 1.2               | .998                        |
| DNAH5  | −0.5              | .336                        | −1.1               | .069                        | 0.4               | .75                         |
| DNAH9  | −2.6              | <.001                       | −2                 | .005                        | −0.3              | .881                        |
| DNAJA2 | −0.5              | .009                        | −0.7               | .012                        | −0.5              | .257                        |
| DNAJB11| 0.4               | .326                        | 0.1                | .987                        | −0.2              | .874                        |
| DNAJB4 | −0.5              | .062                        | −0.5               | .147                        | −0.2              | .829                        |
| DNML   | 0.2               | .637                        | 0.1                | .958                        | −0.1              | .889                        |
| DNPEP  | −0.4              | .301                        | −0.4               | .437                        | −0.2              | .893                        |
| DNTTIP1| −2.1              | <.001                       | −1.4               | .012                        | −0.7              | .474                        |
| DNTTIP2| 0.4               | .266                        | 0.3                | .555                        | 0.8               | .231                        |
| DPP3   | 0.3               | .244                        | 0.3                | .408                        | 0.1               | .989                        |
| DPT    | −0.1              | .988                        | −0.8               | .114                        | 0.1               | .994                        |
| DPYSL2 | −0.5              | .027                        | −0.8               | .008                        | −0.5              | .345                        |
| DPYSL3 | −0.9              | <.001                       | −0.9               | .002                        | −0.5              | .264                        |
| DRAP1  | 0.1               | .926                        | −0.4               | .294                        | −0.1              | .899                        |
| DSCAM  | 1                | 1.79                         | 0.9                | .347                        | 0.7               | .679                        |
| DSP    | −0.4              | .352                        | −1                 | .07                         | −0.6              | .58                         |
| DST    | −0.8              | .151                        | −1                 | .147                        | −0.1              | .989                        |
| DSTN   | −1.3              | <.001                       | −1.2               | .001                        | −0.7              | .172                        |
| DTWD2  | −1.7              | .003                        | −0.9               | .237                        | −1.6              | .195                        |
| DUSP3  | −1                | .001                        | −1                 | .003                        | −0.4              | .458                        |
| DUT    | −0.8              | .084                        | −1.1               | .045                        | −0.9              | .345                        |
| DYNC1H1| 0.4               | .246                        | 0.7                | .072                        | 0.6               | .348                        |
| DYNC1I2| 0.1               | .95                         | −0.1               | .855                        | 0.4               | .721                        |
| DYNC1I1| −0.7              | .035                        | −0.6               | 18                          | −0.7              | .349                        |
| DYNC1I2| −0.3              | .432                        | −0.3               | 585                         | −0.1              | .954                        |
| DYNLRB1| −1.6              | <.001                       | −2                 | .001                        | −1.5              | .069                        |
| ECH1   | −0.2              | .47                         | −1.3               | .001                        | −0.4              | .582                        |
| ECH51  | −0.9              | .001                        | −1.2               | .001                        | −0.8              | .115                        |
| ECM1   | −0.1              | .842                        | −0.2               | .724                        | 0.1               | .986                        |
| EEAI   | −0.4              | .096                        | −0.6               | .045                        | −0.5              | .283                        |
| EEFIA2 | 0.4               | .296                        | −0.5               | .288                        | 0.3               | .793                        |
| Gene   | Log2FC TAA/normal | Adjusted P value | Log2FC TBAD/normal | Adjusted P value | Log2FC TADA/normal | Adjusted P value |
|--------|-------------------|------------------|--------------------|------------------|--------------------|------------------|
| EEF1B2 | 0.4               | .195             | 0.8                | .04              | 0.3                | .771             |
| EEFID  | 0.3               | .266             | 0.8                | .008             | 0.4                | .553             |
| EEFIDP3| 0.7               | .95              | 0.2                | .815             | 1.4                | .231             |
| EEFIG  | 0.7               | .002             | 0.6                | .025             | 0.6                | .162             |
| EEF2   | 0.3               | .257             | 0.2                | .716             | 0.2                | .767             |
| EFEMP1 | 0.1               | <.001            | 0.9                | .079             | 0.7                | .438             |
| EFEMP2 | 0.7               | .012             | 0.7                | .062             | 0.3                | .721             |
| EFHD1  | 1.4               | <.001            | 0.5                | .241             | 0.8                | .217             |
| EFHD2  | 0.7               | .576             | 0.1                | .914             | 0.6                | .496             |
| EGR4   | 0.3               | <.001            | 2.3                | .002             | 0.3                | .315             |
| EHD1   | 0.9               | .156             | 0.3                | .346             | 0.3                | .453             |
| EHD2   | 0.2               | .005             | 0.5                | .251             | 0.1                | .94              |
| EHD3   | 0.6               | .214             | 0.2                | .779             | 0.3                | .8               |
| EHD4   | 0.1               | .001             | 0.7                | .014             | 0.4                | .395             |
| EIF1   | 1.5               | .69              | 0.6                | .054             | 0.2                | .857             |
| EIF2A  | 0.2               | <.001            | 0.7                | .005             | 0.1                | .025             |
| EIF2B1 | 0.4               | .321             | 0.4                | .431             | 0.1                | .965             |
| EIF2S1 | 0.2               | .604             | 0.4                | .208             | 0.1                | .971             |
| EIF2S3 | 0.1               | .845             | 0.2                | .636             | 0.1                | .939             |
| EIF3A  | 0.2               | .786             | 0.4                | .421             | 0.1                | .916             |
| EIF3F  | 0.1               | .454             | 0.9                | .016             | 0.6                | .37              |
| EIF3I  | 0.2               | .812             | 0.6                | .18              | 0.2                | .893             |
| EIF4A1 | 0.1               | .901             | 0.1                | .959             | 0.2                | .852             |
| EIF4A2 | 0.2               | .128             | 0.6                | .062             | 0.2                | .756             |
| EIF4A3 | 0.2               | .583             | 0.1                | .923             | 0.3                | .792             |
| EIF4B  | 0.1               | .929             | 0.2                | .802             | 0.1                | .959             |
| EIF4G2 | 0.2               | .775             | 0.1                | .979             | 0.2                | .891             |
| EIF4G3 | 0.2               | .918             | 0.1                | .001             | 0.2                | .894             |
| EIF4H  | 0.3               | .566             | 0.1                | .973             | 0.1                | .987             |
| EIF5   | 0.2               | .683             | 0.2                | .758             | 0.6                | .317             |
| EIF5A  | 0.2               | .678             | 0.3                | .678             | 0.5                | .661             |
| EIF6   | 0.7               | .027             | 0.1                | .012             | 0.3                | .725             |
| ELANE  | 1.3               | .001             | 1.4                | .004             | 1.7                | .019             |
| ELAVL1 | 0.7               | .058             | 0.7                | .147             | 0.6                | .553             |
| ELN    | 1.7               | <.001            | 0.2                | .73              | 0.8                | .362             |
| ELOB   | 0.1               | .156             | 0.5                | .21              | 0.1                | .907             |
| EMD    | 0.2               | .784             | 0.5                | .318             | 0.6                | .431             |
| EMILIN1| 0.2               | <.001            | 0.3                | .371             | 0.5                | .315             |
| EMILIN2| 0.1               | .812             | 0.3                | .539             | 0.2                | .851             |
| EML2   | 1.1               | <.001            | 1.2                | <.001            | 0.6                | .283             |
| EML3   | 0.3               | .767             | 0.1                | .948             | 0.3                | .899             |
| ENAH   | 0.7               | .012             | 0.6                | .135             | 0.5                | .52              |
| ENAM   | 0.1               | .001             | 0.6                | .014             | 0.5                | .551             |
| ENDOD1 | 0.1               | .86              | 0.2                | .656             | 0.1                | .976             |
| ENG    | 0.4               | .215             | 0.7                | .083             | 0.5                | .475             |

(Continued on next page)
| Gene     | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|----------|-------------------|------------------|--------------------|------------------|--------------------|------------------|
| ENO1     | –0.5              | .005             | –0.4               | .135             | –0.2               | .762             |
| ENO2     | –0.7              | .001             | –0.5               | .064             | –0.3               | .582             |
| ENOPH1   | –0.4              | .478             | –0.8               | .153             | –0.1               | .969             |
| ENPP1    | –0.2              | .608             | 0.1                | .818             | –0.2               | .866             |
| ENPP2    | 0.4               | .193             | 0.1                | .86              | 0.3                | .77              |
| EPB4L2   | 0.2               | .645             | 0.3                | .63              | 0.2                | .899             |
| EPDR1    | –0.3              | .392             | –0.3               | .503             | –0.1               | .995             |
| EPHX1    | –0.8              | .864             | –0.8               | .008             | 0.1                | .908             |
| EPPK1    | –0.8              | .061             | –0.9               | .102             | –0.8               | .395             |
| EPRS1    | 0.4               | .227             | 0.3                | .463             | 0.2                | .86              |
| EPS15L1  | –0.3              | .538             | –0.3               | .597             | –0.3               | .772             |
| EPS8L1   | –1.5              | .003             | –1.4               | .035             | –0.5               | .699             |
| ERBIN    | –0.8              | .018             | –0.3               | .643             | 0.2                | .821             |
| ERC2     | –1                | .027             | –2.9               | <.001            | –1.9               | .03              |
| ERH      | 0.4               | .271             | 0.2                | .702             | 0.4                | .578             |
| ERI1     | 0.8               | .454             | 0.5                | .722             | 1.6                | .412             |
| ERLIN2   | –1                | .001             | –0.5               | .17              | –0.7               | .256             |
| ERO1A    | 0.4               | .448             | 0.2                | .74              | 0.9                | .311             |
| ERP29    | –0.4              | .121             | –0.9               | .004             | –0.5               | .364             |
| ERP44    | 0.1               | .901             | –0.6               | .088             | –0.1               | .997             |
| ESI      | –0.7              | .016             | –0.9               | .016             | –0.4               | .606             |
| ESD      | –0.8              | .002             | –1                 | .002             | –0.5               | .432             |
| ESYT1    | 0.7               | .027             | 0.6                | .167             | 0.7                | .291             |
| ESYT2    | –0.1              | .956             | 0.2                | .822             | 0.5                | .572             |
| ETF1     | –0.2              | .627             | –0.5               | .283             | –0.2               | .864             |
| ETFA     | –0.7              | .008             | –1.5               | <.001            | –0.9               | .068             |
| ETFB     | –0.3              | .281             | –0.9               | .007             | –0.7               | .231             |
| EXOC3    | –1.7              | .001             | –1.7               | .003             | –0.9               | .356             |
| EXT1     | –1.3              | .001             | –0.6               | .297             | –0.8               | .362             |
| EYS      | –1.6              | .003             | 0.4                | .647             | –0.5               | .729             |
| EZR      | –0.1              | .844             | –0.3               | .395             | –0.2               | .696             |
| F10      | 0.5               | .241             | –0.9               | .121             | 0.4                | .725             |
| F11      | –0.6              | .144             | –0.2               | .854             | 0.2                | .881             |
| F12      | –0.5              | .121             | –0.8               | .045             | –0.4               | .602             |
| F13A1    | 1                 | .001             | 0.4                | .294             | 0.9                | .137             |
| F13B     | 0.6               | .068             | –0.3               | .591             | 0.5                | .44              |
| F2       | 0.7               | .003             | 0.3                | .271             | 0.8                | .05              |
| F9       | –0.5              | .08              | –0.1               | .916             | 0.5                | .458             |
| FABP1    | –3.4              | <.001            | –3.5               | <.001            | –3.2               | <.001            |
| FABP3    | –2.2              | <.001            | –2.4               | <.001            | –1.4               | .058             |
| FABP4    | –1.7              | <.001            | –2.1               | <.001            | –1.4               | .028             |
| FABP5    | 0.2               | .691             | –0.9               | .06              | 0.1                | .959             |
| FAH      | –1.1              | <.001            | –1.5               | <.001            | –0.9               | .023             |
| FAM135A  | 1.3               | .007             | 1.1                | .086             | 1.3                | .208             |
| FAM180A  | –1.4              | .017             | 0.4                | .63              | –0.2               | .908             |
| FAM50B   | 0.8               | .145             | 1.5                | .024             | 1.9                | .058             |
### Supplementary Table II. Continued.

| Gene     | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|----------|-------------------|------------------|--------------------|------------------|--------------------|------------------|
| FANCA    | 1.7               | 0.001            | 2.7                | <.001            | 1.8                | 0.043            |
| FANK1    | 0.9               | 0.091            | -0.9               | .179             | 0.4                | .777             |
| FARS3    | 0.2               | 0.731            | 0.2                | 0.801            | 0.3                | .772             |
| FASN     | 0.1               | 0.8              | -0.5               | .311             | -0.3               | .749             |
| FAU      | 1.7               | <.001            | 1                  | .06              | 1.8                | 0.012            |
| FBLM1    | -1.5              | <.001            | -1.1               | 0.013            | -0.7               | 3.28             |
| FBLN1    | -0.4              | 0.086            | -0.5               | .147             | 0.2                | .762             |
| FBLN2    | 0.1               | 0.92             | -0.4               | 3.48             | 0.1                | .981             |
| FBLN5    | -2.1              | <.001            | -0.9               | 0.095            | -0.9               | 2.97             |
| FBN1     | -0.4              | 4.05             | 1.3                | 0.011            | 0.8                | 3.15             |
| FCGBP    | 0.2               | 0.616            | 0.1                | 0.95             | 0.1                | 0.928            |
| FCCR3A   | 0.4               | 0.422            | -0.2               | 0.854            | 0.9                | 2.99             |
| FDPS     | -0.3              | 0.369            | -0.3               | 0.415            | -0.1               | 0.907            |
| FERMT2   | -1.2              | <.001            | -0.7               | 0.114            | -0.4               | 6.18             |
| FERMT3   | 1.9               | <.001            | 1.8                | <.001            | 1.3                | 0.031            |
| FGA      | 0.9               | 0.007            | 1.4                | 0.002            | 1.1                | 0.12             |
| FGB      | 1.1               | 0.006            | 1.6                | 0.002            | 1.2                | 1.68             |
| FGG      | 1.2               | 0.002            | 1.6                | 0.002            | 1.1                | 1.53             |
| FGL2     | -1.2              | 0.001            | -1.4               | 0.002            | -0.9               | 1.8              |
| FH       | -1                | 0.005            | -1.8               | <.001            | -1.2               | 0.091            |
| FHL1     | -1.5              | <.001            | -1                 | 0.044            | -0.5               | 0.6              |
| FHL2     | -0.2              | 0.719            | -0.2               | 0.67             | 0.4                | 0.582            |
| FHL3     | -0.7              | 0.019            | -0.6               | 0.122            | -0.3               | 0.784            |
| FHL5     | -0.6              | 0.037            | -0.4               | 0.292            | -0.6               | 0.356            |
| FIGNL1   | -1.6              | 0.002            | -1                 | 0.14             | -1.6               | 0.118            |
| FILIP1L  | -1.5              | <.001            | -1.3               | <.001            | -1.6               | 0.001            |
| FIS1     | -0.4              | 0.281            | -1.1               | 0.004            | -0.4               | 0.521            |
| FKBP1A   | -0.7              | 0.007            | -0.9               | 0.005            | -0.3               | 0.685            |
| FKBP2    | -0.6              | 0.028            | -0.9               | 0.003            | -0.6               | 0.237            |
| FKBP3    | -0.9              | 0.007            | -1.5               | 0.002            | -1.4               | 0.027            |
| FKBP4    | -0.4              | 0.222            | -0.5               | 0.18             | -0.8               | 0.773            |
| FKBP5    | 0.5               | 0.293            | -0.9               | 0.093            | -0.3               | 0.128            |
| FKBP9    | -0.1              | 0.921            | 0.4                | 0.536            | 0.6                | 0.099            |
| FLADI    | -1.8              | 0.005            | -1.1               | 0.87             | -1.2               | 0.378            |
| FLI1     | 0.3               | 0.336            | 0.5                | 0.245            | 0.7                | 0.212            |
| FLNA     | -1.3              | <.001            | -0.7               | 0.084            | -0.8               | 0.165            |
| FLNB     | 0.2               | 0.666            | -0.4               | 0.456            | -0.3               | 0.799            |
| FLNC     | -1.7              | <.001            | -1.1               | 0.002            | -1.2               | 0.031            |
| FLOT1    | 0.1               | 0.774            | 0.4                | 0.156            | 0.2                | 0.792            |
| FLOT2    | 0.7               | 0.022            | 1.2                | 0.002            | 0.9                | 0.118            |
| FMODE    | -1.2              | 0.001            | -1.1               | 0.013            | -0.7               | 0.35             |
| FNI      | -0.4              | 0.142            | 0.2                | 0.731            | 0.1                | 0.959            |
| FNSK     | -1.4              | 0.013            | -2.4               | 0.001            | -0.3               | 0.857            |
| FOXL1    | 0.1               | 0.96             | -1                 | 0.062            | 0.2                | 0.881            |
| FRMD6    | 0.1               | 0.912            | -0.7               | 0.203            | 0.4                | 0.72             |
| FRZB     | -1.3              | 0.001            | -1.1               | 0.038            | -0.9               | 0.325            |
### Supplementary Table II. Continued.

| Gene   | Log$_2$FC TAA/normal | Adjusted $P$ value$^a$ | Log$_2$FC TBAD/normal | Adjusted $P$ value$^a$ | Log$_2$FC TADA/normal | Adjusted $P$ value$^a$ |
|--------|----------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| FSCN1  | 0.4                  | .335                   | −0.1                   | .84                    | 0.4                    | .668                   |
| FSIP2  | −1.3                 | .002                   | −1.4                   | .006                   | −0.7                   | .403                   |
| FSTL1  | −1.1                 | <.001                  | −0.8                   | <.001                  | −0.8                   | .084                   |
| FTH1   | 0.4                  | .482                   | −0.3                   | .688                   | −0.3                   | .798                   |
| FUBP1  | −0.4                 | .279                   | −0.6                   | .181                   | −0.5                   | .602                   |
| FUCA1  | 0.6                  | .033                   | −0.5                   | .135                   | 0.4                    | .506                   |
| FURIN  | −2.7                 | <.001                  | −3.1                   | <.001                  | −2.8                   | .012                   |
| G6PD   | 0.2                  | .462                   | 0.3                    | .238                   | 0.2                    | .773                   |
| GAA    | −0.3                 | .413                   | −0.7                   | .03                    | −0.1                   | .923                   |
| GALM   | −1.2                 | <.001                  | −1.8                   | <.001                  | −1.3                   | .013                   |
| GANAB  | 0.1                  | .662                   | 0.1                    | .957                   | 0.2                    | .806                   |
| GAPDH  | −0.9                 | <.001                  | −1.0                   | <.001                  | −0.7                   | .157                   |
| GAPDH5 | −0.7                 | .249                   | −1.0                   | .165                   | −0.3                   | .821                   |
| GARS1  | 0.4                  | .46                    | −0.2                   | .783                   | −0.2                   | .879                   |
| GART   | −0.5                 | .305                   | −0.5                   | .375                   | −0.1                   | .986                   |
| GAS6   | −0.3                 | .492                   | −0.9                   | .038                   | −0.2                   | .889                   |
| GASK1B | −2.3                 | <.001                  | −1.7                   | <.001                  | −1.7                   | .011                   |
| GBA    | −0.4                 | .515                   | −0.3                   | .647                   | −0.7                   | .493                   |
| GBE1   | −0.4                 | .208                   | 0.3                    | .511                   | 0.4                    | .536                   |
| GBLP   | 0.2                  | .621                   | −0.3                   | .506                   | −0.2                   | .827                   |
| GBP1   | −1.1                 | .008                   | −1.2                   | .011                   | −0.5                   | .593                   |
| GC     | 0.3                  | .186                   | −0.3                   | .473                   | 0.5                    | .357                   |
| CCA    | 1.1                  | .001                   | 1.7                    | <.001                  | 1.1                    | .091                   |
| CCLC   | 0.7                  | .003                   | −0.4                   | .234                   | 0.4                    | .567                   |
| GDII   | −0.7                 | .015                   | −0.8                   | .019                   | −0.2                   | .829                   |
| GD1Z   | 0.1                  | .719                   | −0.2                   | .6                    | 0.2                    | .773                   |
| GFPT1  | −0.4                 | .431                   | 0.3                    | .631                   | −0.1                   | .968                   |
| GFUS   | 0.3                  | .478                   | 0.3                    | .416                   | 0.2                    | .773                   |
| GGT5   | 0.6                  | .108                   | 0.1                    | .905                   | 1.1                    | .095                   |
| GJA1   | −0.7                 | .047                   | −0.2                   | .672                   | −0.2                   | .807                   |
| GLDC   | −0.1                 | .971                   | −1.3                   | .017                   | 0.5                    | .679                   |
| GLIPR2 | −0.4                 | .219                   | −0.4                   | .349                   | 0.2                    | .891                   |
| GLO1   | −0.9                 | <.001                  | −1.1                   | <.001                  | −0.6                   | .091                   |
| GLOD4  | −0.4                 | .136                   | −0.9                   | .004                   | −0.2                   | .852                   |
| GLRX   | −0.2                 | .675                   | −0.9                   | .008                   | −0.3                   | .725                   |
| GLS    | −0.6                 | .146                   | −0.5                   | .355                   | −0.2                   | .86                    |
| GLUD1  | −0.6                 | .048                   | −0.7                   | .053                   | −0.8                   | .181                   |
| GM2A   | 0.2                  | .704                   | −1.2                   | .013                   | −0.1                   | .958                   |
| GMFG   | 0.4                  | .416                   | −0.2                   | .778                   | 0.1                    | .953                   |
| GNA11  | −0.6                 | .199                   | −0.3                   | .687                   | 0.3                    | .847                   |
| GNA13  | 0.1                  | .946                   | −0.7                   | 2.0                    | 0.1                    | .941                   |
| GNA12  | 0.3                  | .413                   | 0.3                    | .455                   | 0.5                    | .422                   |
| GNA13  | 0.5                  | .217                   | 0.4                    | .372                   | 0.5                    | .522                   |
| GNAQ   | 0.1                  | .832                   | 0.4                    | .424                   | 0.2                    | .889                   |
| GNB1   | −0.6                 | .014                   | −0.6                   | .056                   | −0.4                   | .541                   |
| GNB2   | −0.5                 | .088                   | −0.7                   | .048                   | −0.3                   | .718                   |
### Supplementary Table II. Continued.

| Gene    | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|---------|--------------------|------------------|--------------------|------------------|--------------------|------------------|
| GNB4    | −0.4               | .166             | −0.5              | .18              | −0.1              | .959             |
| CNG12   | −0.7               | .089             | −0.7              | .189             | −0.3              | .824             |
| GNPDA1  | 0.2                | .748             | 0.1               | .888             | 0.3               | .75              |
| CNPTAB  | −0.2               | .833             | −0.1              | .955             | 0.7               | .458             |
| GOLM1   | −0.9               | .239             | −1.3              | .143             | −0.3              | .888             |
| GOT1    | −1                 | .001             | −1.3              | .001             | −1                | 1                |
| GOT2    | −0.1               | .946             | −0.6              | .11              | 0.1               | .998             |
| GPBPI1  | −4                 | <.001            | −2.2              | .011             | −2                | 1.37             |
| GPC4    | 0.2                | .79              | −0.5              | .35              | 0.2               | .907             |
| GPC6    | −0.2               | .704             | −0.1              | .872             | 0.3               | .771             |
| GPD1L   | −1                 | .002             | −1.1              | .006             | −0.6              | .354             |
| CPI     | −0.2               | .536             | −0.1              | .728             | 0.2               | .676             |
| GPM6A   | −0.3               | .584             | 0.6               | .35              | 0.4               | .725             |
| GPNMB   | 1.1                | .031             | −0.1              | .923             | 0.3               | .871             |
| GPX1    | 0.2                | .611             | −0.5              | .156             | 0.3               | .721             |
| GPX3    | −0.4               | .125             | −0.4              | .269             | −0.1              | .944             |
| GPX4    | 0.1                | .893             | −0.5              | .358             | −0.2              | .91              |
| GRB2    | −0.4               | .124             | −1                | .001             | −0.4              | .375             |
| GRB7    | 0.1                | .832             | −0.3              | .428             | 0.2               | .826             |
| GRHPR   | −0.4               | .145             | −0.6              | .084             | −0.2              | .77              |
| GRP78   | −0.5               | .05              | −0.3              | .311             | −0.6              | .188             |
| CSN     | −0.8               | <.001            | −0.8              | .002             | −0.6              | .128             |
| GSR     | −0.5               | .003             | −0.7              | .001             | −0.6              | .056             |
| GSS     | −1.9               | <.001            | −3.2              | <.001            | −2.3              | .003             |
| GSTM2   | −0.1               | .966             | −0.3              | .584             | 0.4               | .668             |
| GSTM3   | 0.1                | .924             | −0.1              | .862             | 0.5               | .352             |
| GSTO1   | 0.3                | .031             | 0.1               | .7               | 0.3               | .464             |
| GSTP1   | −0.8               | <.001            | −0.6              | .016             | −0.5              | .244             |
| GSTT1   | −0.4               | .237             | −0.5              | .334             | 0.1               | .917             |
| GUK1    | −0.8               | .032             | −0.8              | .131             | −0.3              | .822             |
| GULP1   | −0.9               | .003             | −0.7              | .098             | −0.9              | .152             |
| GY1     | −0.5               | .153             | −0.7              | .092             | 0.1               | .986             |
| H1-0    | −0.2               | .52              | −0.2              | .659             | 0.1               | .899             |
| H1-5    | 2                  | <.001            | 1.4               | .026             | 1.7               | .067             |
| H2AC21  | −0.7               | .04              | −1.1              | .012             | −0.9              | .191             |
| H3–3A   | 0.4                | 2.75             | 0.4               | .42              | 1.1               | 1.29             |
| H4–16   | 0.7                | 1.51             | 0.2               | .854             | 0.9               | 3.48             |
| HAAAO   | −1.6               | <.001            | −1.7              | <.001            | −0.8              | .127             |
| HABP2   | −0.3               | .491             | −0.5              | .207             | −0.1              | .919             |
| HADH    | −0.7               | <.001            | −1.2              | <.001            | −0.9              | .017             |
| HADHA   | −0.3               | .327             | −0.5              | .092             | −0.2              | .729             |
| HADHB   | −0.3               | .241             | −0.4              | .073             | −0.3              | .626             |
| HAGH    | −0.7               | <.001            | −1                | <.001            | −0.7              | .015             |
| HAPLN1  | −1.6               | <.001            | −1.2              | .007             | −1.1              | .118             |
| HAPLN3  | −1.4               | .001             | −0.9              | .084             | −0.4              | .695             |
| HARS2   | −1                 | .009             | −1                | .035             | −0.6              | .533             |

(Continued on next page)
| Gene       | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|------------|-------------------|------------------|--------------------|------------------|--------------------|------------------|
| HBA1       | 0.5               | 0.215            | −1                 | 0.017            | −0.5               | 0.567            |
| HBB        | −0.1              | 0.901            | −1.4               | 0.001            | −0.6               | 0.418            |
| HBD        | 0.1               | 0.969            | −1.1               | 0.005            | −0.5               | 0.563            |
| HBD2       | 1                 | 0.019            | −0.8               | 0.179            | −0.2               | 0.917            |
| HDG1       | −0.3              | 0.308            | 0.1                | 0.992            | 0.1                | 0.903            |
| HDGFL3     | −1.2              | 0.003            | −1.8               | 0.001            | −0.8               | 0.362            |
| HDH2       | −0.3              | 0.309            | −0.7               | 0.041            | −0.4               | 0.596            |
| HDLBP      | 0.4               | 0.29             | 0.2                | 0.678            | 0.5                | 0.544            |
| HEBP1      | −0.5              | 0.022            | −1                 | 0.001            | −0.4               | 0.513            |
| HEBP2      | −1.2              | <0.001           | −1.1               | 0.002            | −0.7               | 0.256            |
| HEXA       | −1                | 0.002            | −0.9               | 0.025            | −1.5               | 0.012            |
| HEXB       | 0.1               | 0.965            | −0.5               | 0.151            | 0.2                | 0.872            |
| HIBADH     | −0.2              | 0.558            | −0.7               | 0.072            | 0.3                | 0.771            |
| HIBCH      | −0.3              | 0.268            | −0.8               | 0.013            | −0.4               | 0.503            |
| HINT1      | −0.5              | 0.041            | −1.2               | 0.001            | −0.3               | 0.675            |
| HK1        | 0.3               | 0.353            | 0.3                | 0.379            | 0.3                | 0.719            |
| HKDC1      | 1.3               | 0.002            | −0.4               | 0.53             | 0.7                | 0.526            |
| HLA-DRA    | 0.7               | 0.013            | −0.3               | 0.568            | 0.1                | 0.896            |
| HLC5       | 0.3               | 0.576            | −0.3               | 0.678            | −0.4               | 0.756            |
| HMCN1      | −1.1              | 0.003            | −0.4               | 0.505            | −0.4               | 0.667            |
| HMGB2      | −0.1              | 0.832            | 0.5                | 0.078            | 0.1                | 0.908            |
| HMGC2      | 0.7               | 0.18             | −0.1               | 0.906            | 0.5                | 0.692            |
| HNRNPA1    | 1.5               | 0.001            | 1.6                | 0.002            | 0.8                | 0.362            |
| HNRNPA2B1  | −0.2              | 0.589            | −0.2               | 0.642            | −0.2               | 0.761            |
| HNRNPA3    | 0.1               | 0.953            | 0.1                | 0.923            | 0.1                | 0.939            |
| HNRNPA8    | −0.2              | 0.644            | −0.8               | 0.006            | −0.4               | 0.446            |
| HNRNPC     | −0.4              | 0.345            | −1                 | 0.026            | −0.3               | 0.773            |
| HNRNPD     | −0.3              | 0.377            | −0.6               | 0.122            | −0.3               | 0.73             |
| HNRNPF     | 0.2               | 0.753            | −0.4               | 0.562            | −0.2               | 0.916            |
| HNRNPH3    | −0.4              | 0.079            | −0.3               | 0.432            | −0.3               | 0.714            |
| HNRNPK     | −0.3              | 0.162            | −0.5               | 0.047            | −0.2               | 0.767            |
| HNRNPL     | −0.7              | 0.006            | −0.8               | 0.026            | −0.8               | 0.138            |
| HNRNPM     | −0.2              | 0.401            | −0.2               | 0.393            | −0.4               | 0.315            |
| HNRNPR     | −0.5              | 0.036            | −0.8               | 0.008            | −0.7               | 0.167            |
| HNRNPU     | 0.5               | 0.216            | 0.1                | 0.886            | 0.7                | 0.384            |
| HNRNPU1    | 0.3               | 0.604            | 0.3                | 0.678            | 0.5                | 0.677            |
| HP         | −0.5              | 0.368            | −1                 | 0.12             | 0.7                | 0.529            |
| HP1BP3     | 0.9               | 0.012            | 0.8                | 0.068            | 1                  | 0.147            |
| HPR        | 0.3               | 0.544            | −1.1               | 0.021            | 0.4                | 0.702            |
| HPRT1      | 1                  | 0.001            | 0.3                | 0.462            | 0.6                | 0.294            |
| HPX        | −1                 | 0.001            | −1.8               | <0.001           | −0.9               | 0.068            |
| HRC        | −0.5              | 0.024            | −0.2               | 0.557            | −0.1               | 0.994            |
| HSD17B10   | −0.6              | 0.019            | −1.1               | 0.001            | −0.8               | 0.067            |
| HSD17B12   | 0.2               | 0.479            | 0.4                | 0.22             | 0.4                | 0.516            |
| HSD17B3    | −1                 | 0.012            | −1                 | 0.044            | −0.4               | 0.741            |
| HSD17B4    | 0.8               | 0.011            | 0.3                | 0.543            | 0.5                | 0.544            |
| Gene       | Log₂FC TAA/normal | Adjusted P valuea | Log₂FC TBAD/normal | Adjusted P valuea | Log₂FC TADA/normal | Adjusted P valuea |
|------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| HSF1       | 1.3              | 0.042             | –1.4              | 0.094             | –0.2              | 0.959             |
| HSP90AA1   | –0.2             | 0.418             | –0.2              | 0.701             | 0.1               | 0.899             |
| HSP90AB1   | –0.4             | 0.2               | 0.2               | 0.7               | 0.2               | 0.784             |
| HSP90B1    | –0.1             | 0.898             | –0.2              | 0.435             | –0.2              | 0.821             |
| HSPA2      | –1.3             | <0.001            | –0.9              | 0.041             | –0.3              | 0.719             |
| HSPA4      | 0.2              | 0.788             | –0.5              | 0.266             | –0.1              | 0.954             |
| HSPA4L     | –0.1             | 0.858             | –0.6              | 0.328             | –0.5              | 0.681             |
| HSPA5      | –0.2             | 0.241             | –0.4              | 0.059             | –0.4              | 0.247             |
| HSPA8      | –0.6             | 0.001             | –0.8              | 0.001             | –0.6              | 0.056             |
| HSPA9      | –0.1             | 0.899             | –0.3              | 0.285             | –0.1              | 0.968             |
| HSPB1      | –1.6             | <0.001            | –1.5              | 0.001             | –1.1              | 0.068             |
| HSPB6      | –1.6             | <0.001            | –1.9              | <0.001            | –1                | 0.167             |
| HSPB7      | –1.6             | <0.001            | –1.5              | 0.002             | –0.8              | 0.329             |
| HSPB8      | –1.9             | <0.001            | –1.3              | 0.011             | –1.3              | 0.085             |
| HSPD1      | –0.3             | 0.178             | –0.5              | 0.017             | –0.4              | 0.248             |
| HSPE1      | –0.5             | 0.127             | –1.2              | 0.001             | –0.6              | 0.3               |
| HSPG2      | –1.4             | <0.001            | –0.6              | 0.173             | –0.7              | 0.275             |
| HTR3C      | –0.5             | 0.308             | –1.6              | 0.004             | –0.8              | 0.382             |
| HTRA1      | –1.4             | 0.001             | –1.4              | 0.005             | –0.9              | 0.256             |
| HV206      | 0.8              | 0.214             | 0.1               | 0.971             | 1.9               | 0.112             |
| HV209      | 0.6              | 0.225             | –0.6              | 0.354             | 1.1               | 0.282             |
| HV306      | 0.3              | 0.681             | –0.9              | 0.188             | 1.1               | 0.324             |
| HYOU1      | –0.2             | 0.526             | –0.4              | 0.346             | –0.6              | 0.345             |
| IAH1       | –0.7             | 0.012             | –0.7              | 0.028             | –0.3              | 0.725             |
| IARS1      | 0.4              | 0.112             | 0.3               | 0.559             | 0.3               | 0.676             |
| IARS2      | –0.6             | 0.131             | –0.2              | 0.817             | –0.1              | 0.979             |
| IDH1       | –0.3             | 0.117             | –0.6              | 0.009             | –0.2              | 0.706             |
| IDH2       | 0.8              | 0.002             | 0.7               | 0.046             | 0.6               | 0.345             |
| IDH3A      | 0.2              | 0.621             | –0.6              | 0.139             | –0.1              | 0.998             |
| IDN1       | 0.7              | 0.184             | –2                | 0.003             | –1.4              | 0.199             |
| IER5       | 0.2              | 0.783             | –0.7              | 0.159             | 0.4               | 0.693             |
| IFT46      | 0.4              | 0.325             | –0.7              | 0.127             | 0.7               | 0.345             |
| IGDCC3     | –4.2             | <0.001            | –2.4              | 0.002             | –3.6              | 0.001             |
| IGF2       | –1               | 0.001             | –1.1              | 0.003             | –0.3              | 0.735             |
| IGFALS     | 0.8              | 0.016             | 0.1               | 0.987             | 0.9               | 0.196             |
| IGFBP2     | –1.4             | <0.001            | –1.3              | 0.005             | –1                | 0.157             |
| IGFBP3     | –0.5             | 0.304             | 0.5               | 0.42              | 0.3               | 0.79              |
| IGFBP5     | –1               | 0.003             | –0.3              | 0.553             | –0.4              | 0.693             |
| IGFBP6     | –1.1             | 0.002             | –1.3              | 0.003             | –1                | 0.116             |
| IGFBP7     | –1.9             | <0.001            | –0.9              | 0.049             | –0.8              | 0.315             |
| IGHA1      | –0.2             | 0.774             | –1.1              | 0.009             | 0.3               | 0.734             |
| IGHA2      | –0.3             | 0.59              | –1.3              | 0.01              | 0.3               | 0.777             |
| IGHD       | –0.1             | 0.909             | –1                | 0.089             | –0.1              | 0.952             |
| IGHG1      | –0.2             | 0.548             | –0.7              | 0.051             | 0.5               | 0.484             |
| IGHG2      | –0.8             | 0.018             | –1.4              | 0.002             | –0.1              | 0.974             |
| IGHG3      | –0.2             | 0.666             | –0.4              | 0.383             | –0.2              | 0.888             |
### Supplementary Table II. Continued.

| Gene          | Log₂FC TAA/norm | Adjusted P value | Log₂FC TBAD/norm | Adjusted P value | Log₂FC TADA/norm | Adjusted P value |
|---------------|-----------------|------------------|------------------|------------------|------------------|------------------|
| IGHG4         | -0.2            | 0.799            | -0.5             | 0.367            | 0.7              | 0.455            |
| IGHM          | 0.3             | 0.526            | -1               | 0.046            | 0.6              | 0.542            |
| IGHV2-70D     | -1.2            | 0.046            | -1.6             | 0.035            | -0.9             | 0.499            |
| IGHV3-20      | -0.1            | 0.988            | -0.4             | 0.457            | 0.4              | 0.697            |
| IGHV3-49      | 0.3             | 0.527            | -1.1             | 0.038            | 0.7              | 0.452            |
| IGHV3-64D     | 0.2             | 0.793            | -0.7             | 0.118            | 0.7              | 0.372            |
| IGHV3-7       | 0.2             | 0.721            | -0.8             | 0.088            | 0.8              | 0.283            |
| IGHV3-72      | -0.1            | 0.873            | -0.7             | 0.143            | 0.7              | 0.417            |
| IGHV3-74      | 0.3             | 0.609            | -1               | 0.041            | 0.8              | 0.286            |
| IGHV6-1       | 0.8             | 0.126            | -0.3             | 0.675            | 1                | 0.356            |
| IGKC          | -0.2            | 0.6              | -1               | 0.007            | 0.3              | 0.734            |
| IGGKV1-12     | -0.2            | 0.758            | -0.5             | 0.499            | 1                | 0.284            |
| IGGKV1-16     | -0.3            | 0.649            | -1.4             | 0.009            | 0.2              | 0.86             |
| IGGKV1-6      | -0.1            | 0.981            | -0.8             | 0.079            | 0.3              | 0.782            |
| IGGKV2-24     | 0.2             | 0.795            | -1.2             | 0.007            | 0.5              | 0.582            |
| IGGKV3-20     | -0.4            | 0.266            | -0.9             | 0.013            | 0.3              | 0.71             |
| IGGKV3D-15    | 0.2             | 0.763            | -1.5             | 0.003            | 0.5              | 0.607            |
| IGGKV3D-20    | -0.4            | 0.47             | -1.6             | 0.003            | 0.4              | 0.746            |
| IGGKV4-1      | -0.1            | 0.998            | -1               | 0.2              | 0.6              | 0.477            |
| IGLC7         | -0.3            | 0.586            | -1.3             | 0.006            | 0.4              | 0.737            |
| IGLL1         | -0.3            | 0.435            | -0.8             | 0.041            | 0.3              | 0.754            |
| IGLL5         | -0.1            | 0.874            | -2.2             | 0.001            | 0.5              | 0.725            |
| IGLV1-47      | -0.1            | 0.986            | -1.4             | 0.005            | 0.4              | 0.729            |
| IGLV1-51      | 0.1             | 0.943            | -0.6             | 0.456            | 1.2              | 0.279            |
| IGLV3-1       | -0.5            | 0.224            | -1.6             | 0.002            | 0.3              | 0.809            |
| IGLV5-12      | -0.1            | 0.819            | -0.8             | 0.032            | 0.6              | 0.421            |
| IGLV5-19      | -0.5            | 0.218            | -1.3             | 0.007            | 0.3              | 0.762            |
| IGLV4-3       | 1.1             | 0.062            | 0.4              | 0.642            | 1.6              | 0.153            |
| IGLV8-61      | -0.3            | 0.636            | -0.3             | 0.62             | 0.4              | 0.772            |
| IL12RB1       | -3.7            | <0.001           | -1.6             | 0.044            | -2.6             | 0.026            |
| IL1RAPL1      | 0.2             | 0.863            | -1.5             | 0.028            | 0.8              | 0.527            |
| IL1RL1        | 0.3             | 0.702            | -1.2             | 0.056            | 0.2              | 0.91             |
| IL34          | -1.9            | <0.001           | -1               | 0.021            | -1.7             | 0.009            |
| IL4I1         | 0.7             | 0.005            | -0.2             | 0.568            | 0.5              | 0.335            |
| ILF2          | -0.7            | 0.121            | -1.1             | 0.039            | -0.9             | 0.294            |
| ILK           | -0.8            | 0.001            | -0.2             | 0.557            | -0.3             | 0.656            |
| IMMT          | -0.5            | 0.01             | -0.4             | 0.143            | -0.5             | 0.189            |
| IMPA1         | -0.9            | 0.007            | -1.4             | 0.001            | -0.5             | 0.571            |
| IMPDH2        | -0.6            | 0.097            | -0.3             | 0.553            | 0.1              | 0.967            |
| IMPG1         | -0.8            | 0.242            | -0.4             | 0.642            | 0.2              | 0.907            |
| INF2          | -0.2            | 0.819            | -0.9             | 0.282            | -0.4             | 0.792            |
| INKA1         | 0.8             | 0.033            | -0.4             | 0.397            | 0.3              | 0.801            |
| IPO5          | 0.7             | 0.019            | 0.7              | 0.106            | 0.6              | 0.42             |
| IPO7          | -0.1            | 0.785            | 0.1              | 0.826            | 0.1              | 0.906            |
| IPO9          | -0.2            | 0.531            | -0.3             | 0.559            | -0.2             | 0.88             |
| IQGAPI1       | 0.1             | 0.795            | 0.1              | 0.926            | 0.3              | 0.659            |
| Gene   | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|--------|-------------------|-----------------|--------------------|-----------------|--------------------|-----------------|
| IRGC   | 0.9               | 0.067           | 0.2                | 0.779           | 0.2                | 0.761           |
| ISLR   | 0.3               | 0.574           | −0.6               | 0.311           | −0.3               | 0.793           |
| ISYNA1 | −0.7              | 0.098           | −0.6               | 0.348           | −0.1               | 0.927           |
| ITGA1  | −0.4              | 0.309           | 0.2                | 0.688           | 0.6                | 0.44            |
| ITGA11 | −0.6              | 0.167           | −0.3               | 0.683           | −0.2               | 0.878           |
| ITGA3  | −1.5              | <0.001          | −0.8               | 0.035           | −0.8               | 0.177           |
| ITGA5  | −1                | 0.002           | −0.6               | 0.203           | −0.4               | 0.611           |
| ITGA7  | −2                | <0.001          | −1.6               | <0.001          | −1.3               | 0.012           |
| ITGA8  | −1.7              | <0.001          | −1.1               | <0.001          | −1                 | 0.145           |
| ITGAV  | −1.1              | <0.001          | −0.9               | 0.003           | −0.9               | 0.047           |
| ITGB1  | 0.7               | 0.014           | −0.5               | 0.2             | −0.2               | 0.844           |
| ITGB2  | 1.1               | 0.001           | 1.1                | 0.004           | 0.9                | 0.168           |
| ITGB3  | 0.9               | 0.009           | 1.6                | 0.001           | 0.7                | 0.315           |
| ITGB5  | −1                | 0.001           | −1                 | 0.008           | −0.8               | 0.192           |
| ITIH1  | 0.3               | 0.486           | −0.4               | 0.398           | 0.4                | 0.675           |
| ITIH2  | 0.4               | 0.225           | −0.4               | 0.245           | 0.1                | 0.923           |
| ITIH3  | 0.7               | 0.022           | −0.1               | 0.915           | 0.7                | 0.275           |
| ITIH4  | 0.2               | 0.69            | −0.7               | 0.024           | 0.4                | 0.511           |
| ITIH5  | −1.4              | <0.001          | −1.2               | 0.002           | −0.6               | 0.345           |
| ITM2B  | −1.1              | 0.001           | −1                 | 0.021           | −0.5               | 0.488           |
| ITPR1  | −0.5              | 0.178           | 0.1                | 0.889           | 0.2                | 0.86            |
| IVD    | −0.7              | 0.088           | −0.5               | 0.4             | −0.7               | 0.387           |
| IVNS1ABP| −0.5             | 0.12            | −0.3               | 0.605           | −0.3               | 0.688           |
| JCHAIN | 0.3               | 0.38            | −0.9               | 0.018           | 0.3                | 0.713           |
| JMY    | 0.7               | 0.258           | 1.4                | 0.069           | 2                  | 0.068           |
| K132L  | −1.4              | 0.002           | −1.3               | 0.036           | −0.3               | 0.807           |
| KANK2  | −1                | 0.002           | −0.6               | 0.15            | −0.4               | 0.649           |
| KANSL3 | −0.2              | 0.802           | −0.19              | 0.001           | −0.6               | 0.52            |
| KAT6B  | −0.6              | 0.126           | −0.1               | 0.967           | 0.2                | 0.878           |
| KAT8   | −1.7              | 0.002           | −1.4               | 0.047           | −0.4               | 0.825           |
| KCNFI  | −1.1              | 0.125           | −2                 | 0.023           | −1.1               | 0.503           |
| KCTD12 | −0.2              | 0.538           | −0.9               | 0.017           | −0.3               | 0.725           |
| KDEL2  | −0.6              | 0.046           | −0.5               | 0.17            | −0.6               | 0.39            |
| KHSRP  | −0.3              | 0.52            | −0.3               | 0.621           | −0.4               | 0.704           |
| KIF26B | 0.3               | 0.799           | −1.6               | 0.12            | 0.4                | 0.878           |
| KIF2A  | 0.7               | 0.233           | 0.7                | 0.353           | 1.4                | 0.244           |
| KIF5B  | −0.3              | 0.467           | −0.2               | 0.73            | −0.3               | 0.765           |
| KLB    | −0.3              | 0.29            | −0.3               | 0.491           | −0.1               | 0.899           |
| KLC1   | −0.5              | 0.118           | −0.6               | 0.118           | −0.3               | 0.657           |
| KLF10  | −0.9              | 0.049           | −0.6               | 0.33            | −0.5               | 0.677           |
| KLKB1  | −0.1              | 0.781           | −0.7               | 0.049           | 0.1                | 0.959           |
| KMTSC  | −0.3              | 0.445           | 0.3                | 0.478           | 0.5                | 0.355           |
| KNG1   | −0.1              | 0.903           | −0.7               | 0.01            | 0.1                | 0.919           |
| KNTC1  | 0.3               | 0.733           | −0.4               | 0.642           | 1.1                | 0.315           |
| KPNB1  | 0.4               | 0.154           | 0.2                | 0.737           | 0.5                | 0.364           |
| KREMEN2| 0.6               | 0.301           | −0.6               | 0.428           | 0.5                | 0.756           |
| Gene   | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|--------|-------------------|------------------|-------------------|------------------|-------------------|------------------|
| KRT1   | 0.1               | .791             | −0.4              | .41              | −0.4              | .661             |
| KRT10  | 0.1               | .953             | −0.1              | .876             | −0.3              | .768             |
| KRT18  | 1.7               | <.001            | 1.1               | .019             | 2.3               | .001             |
| KRT19  | −0.7              | .02              | −1.1              | .006             | 0.3               | .771             |
| KRT2   | 0.4               | .37              | −0.4              | .504             | 0.2               | .868             |
| KRT7   | 1.1               | .004             | 0.7               | 1.55             | 1.3               | .079             |
| KRT73  | −1.7              | <.001            | −1.7              | <.001            | −2                | .001             |
| KRT77  | −0.1              | .986             | −0.6              | 4.52             | −0.7              | .652             |
| KRT8   | 0.1               | .882             | −0.5              | .289             | 0.8               | .242             |
| KRT9   | −0.1              | .792             | −0.3              | .449             | −0.2              | .767             |
| KSR2   | 0.9               | .041             | −0.5              | .433             | 1.2               | .167             |
| KTNI   | −0.6              | .008             | −0.9              | .004             | −0.6              | .245             |
| KV204  | −0.7              | .04              | −1.5              | .001             | −0.2              | .793             |
| KV303  | 0.5               | .301             | −1.1              | .038             | 0.9               | .299             |
| KV304  | 0.2               | .829             | −1.2              | .11              | 0.4               | .813             |
| KV308  | 0.5               | .359             | −0.7              | .289             | 0.6               | .656             |
| KV402  | −0.7              | .096             | −1.1              | .033             | 0.3               | .78              |
| KVY    | −1                | .081             | −0.4              | .649             | 0.1               | .986             |
| LACTB2 | −0.3              | .416             | −0.8              | .023             | −0.8              | .129             |
| LAMA2  | −1                | .003             | −0.9              | .038             | −0.7              | .36              |
| LAMA4  | 0.3               | .368             | −0.2              | .703             | 0.8               | .233             |
| LAMA5  | −1.8              | <.001            | −0.8              | .052             | −0.9              | .118             |
| LAMB1  | −0.2              | .756             | 0.1               | .859             | 0.3               | .729             |
| LAMB2  | −1.8              | <.001            | −0.8              | .03              | −0.9              | .084             |
| LAMC1  | −1.3              | <.001            | −0.7              | .065             | −0.6              | .329             |
| LAMP1  | 0.5               | .006             | 0.1               | .903             | 0.4               | .41              |
| LAMP2  | 0.7               | .002             | 0.4               | .168             | 0.4               | .369             |
| LAMTOR1| 0.2               | .593             | −0.1              | .984             | 0.1               | .918             |
| LAMTOR3| 0.7               | .009             | 0.7               | .033             | 0.4               | .496             |
| LANCL1 | −0.8              | .004             | −0.5              | .14              | −0.2              | .771             |
| LAP3   | 0.2               | .709             | −1                | .002             | −0.2              | .754             |
| LASP1  | −0.2              | .766             | −0.3              | .584             | 0.3               | .773             |
| LBP    | −0.1              | .821             | 0.1               | .899             | 0.6               | .402             |
| LBX1   | −1.2              | .008             | −1.7              | .004             | −1.1              | .262             |
| LCA5L  | 1.1               | .212             | 2.1               | .055             | 1.5               | .422             |
| LCP1   | 1.3               | <.001            | 0.9               | .021             | 1.1               | .056             |
| LDB3   | −1.8              | <.001            | −1.3              | .002             | −1.1              | .103             |
| LDHA   | 0.2               | .621             | 0.2               | .657             | 0.5               | .29              |
| LDHAL6A| 0.4               | 0.41             | 0.1               | .984             | 1.1               | .16              |
| LDHB   | −0.3              | .128             | −0.5              | .024             | −0.2              | .729             |
| LDLR   | 0.1               | .856             | −0.6              | .187             | 0.3               | .773             |
| LECT2  | −0.8              | .146             | −0.4              | .605             | −0.4              | .756             |
| LEFTY2 | −1.5              | .001             | −0.9              | .107             | −0.9              | .326             |
| LEMD2  | 0.3               | .483             | −0.1              | .881             | 0.8               | .329             |
| LETM1  | −0.7              | .007             | −0.6              | .045             | −0.8              | .106             |
| LGALS1 | −1                | <.001            | −0.9              | .004             | −0.5              | .315             |
### Supplementary Table II. Continued.

| Gene     | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|----------|-------------------|------------------|--------------------|------------------|--------------------|------------------|
| LGALS3   | −0.5              | .02              | −1.2               | <.001            | −0.7               | .147             |
| LGALS3BP | −1.4              | <.001            | −1.5               | .001             | −1.6               | .009             |
| LHPP     | −1.2              | .001             | −1.8               | <.001            | −1.2               | .04              |
| LIMS1    | −1.1              | .001             | −0.9               | .009             | −0.7               | .24              |
| LIMS2    | −1                | <.001            | −0.9               | .004             | −0.6               | .283             |
| LMAN2    | 1.4               | <.001            | 1.3                | .001             | 1.4                | .009             |
| LMCD1    | −1.6              | <.001            | −1.1               | .013             | −0.8               | .237             |
| LMNA     | −0.9              | .005             | −0.9               | .018             | −0.5               | .498             |
| LMB1     | 0.8               | .023             | 1.2                | .009             | 1                  | .133             |
| LMB2     | −0.5              | .033             | −0.4               | .178             | −0.1               | .878             |
| LMOD1    | −1.4              | <.001            | −0.8               | .067             | −0.7               | .316             |
| LOXL1    | −1.7              | <.001            | −0.4               | .405             | −0.6               | .412             |
| LPA      | 1.6               | <.001            | −0.5               | .376             | 1.4                | .05              |
| LPCAT2   | −0.2              | .401             | −0.4               | .174             | −0.1               | .947             |
| LPP      | −1.5              | <.001            | −0.9               | .034             | −0.8               | .259             |
| LRG1     | −0.3              | .305             | −1.1               | .002             | 0.1                | .999             |
| LRP1     | −0.2              | .555             | −0.2               | .715             | 0.2                | .815             |
| LRP12    | −2.3              | <.001            | −1.1               | .127             | −0.4               | .772             |
| LRP6     | −2                | .001             | −1.6               | .036             | −1.4               | .252             |
| LRPAP1   | −0.8              | .015             | −0.9               | .043             | −0.4               | .666             |
| LRRC47   | −0.6              | .063             | −0.8               | .049             | −0.5               | .496             |
| LRRC59   | 1.7               | <.001            | 1.1                | .013             | 0.7                | .378             |
| LRRC72   | −2.7              | <.001            | −1.1               | .141             | −1.8               | .127             |
| LRRC9    | 0.5               | 2.19             | −0.3               | 4.99             | −0.3               | .767             |
| LSM3     | −0.3              | .271             | −1.1               | .002             | −0.3               | .748             |
| LSM6     | −0.4              | .121             | −0.5               | .167             | −0.5               | .337             |
| LSM7     | −1.8              | .001             | −2.4               | .001             | −2                 | .048             |
| LSM8     | −1                | .037             | −1.9               | .002             | −1.4               | .153             |
| LTA4H    | 0.1               | 8.08             | 0.3                | 4.76             | 0.2                | .773             |
| LTBP1    | −1.1              | <.001            | −0.2               | .713             | −0.3               | .737             |
| LTBP2    | −1.1              | <.001            | −0.9               | .01              | −0.5               | .493             |
| LTBP4    | −2.2              | <.001            | −1.1               | .011             | −1.1               | .083             |
| LTF      | 1                 | .03              | 1.4                | .012             | 1.4                | .112             |
| LUM      | 0.3               | .548             | −1.1               | .019             | −0.1               | .993             |
| LV106    | −0.2              | .808             | −0.6               | 3.56             | 0.3                | .79              |
| LXN      | 1.3               | .004             | −0.4               | 5.71             | 0.9                | .332             |
| LYPLA1   | −0.3              | 4.88             | −1.2               | .015             | −1.2               | .12              |
| LYST     | −0.2              | 7.85             | −1.4               | .003             | 0.5                | .618             |
| LYZ      | −0.3              | 3.63             | −0.2               | 7.95             | 0.3                | .725             |
| LZIC     | −0.3              | 2.37             | −0.9               | .005             | −0.3               | .677             |
| LZTR1    | 0.1               | 9.84             | −0.6               | 4.24             | 0.2                | .9               |
| MACF1    | −0.7              | .031             | −0.4               | 3.78             | −0.6               | .362             |
| MACROH2A1| 0.8               | .011             | 0.5                | 2.95             | 0.9                | .137             |
| MAGEF1   | −2.8              | <.001            | −1.1               | .054             | −1.7               | .056             |
| MAGEH1   | 0.4               | 2.11             | −0.2               | 6.51             | 0.2                | .773             |
| MAMDC2   | −0.4              | 3.74             | −0.5               | 3.32             | −0.4               | .718             |

(Continued on next page)
### Supplementary Table II. Continued.

| Gene      | Log₂FC TAA/normal | Adjusted P valuea | Log₂FC TBAD/normal | Adjusted P valuea | Log₂FC TADA/normal | Adjusted P valuea |
|-----------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| MAOA      | 0.1               | .989              | −0.3              | .568              | 0.3               | .762              |
| MAOB      | −0.1              | .87               | −0.2              | .758              | 0.3               | .773              |
| MAP1B     | −1.2              | <.001             | −0.9              | .009              | −1                | .032              |
| MAP4      | −0.6              | .044              | −0.6              | .112              | −0.5              | .407              |
| MAPK1     | −0.3              | .246              | −0.9              | .003              | −0.2              | .767              |
| MAPK10    | −0.6              | .448              | 0.5               | .648              | 0.5               | .771              |
| MAPRE1    | −0.4              | .203              | −0.6              | .071              | −0.3              | .681              |
| MARCKS    | 1.2               | <.001             | 0.7               | .067              | 0.9               | 0.9               |
| MAST3     | −0.6              | .113              | −0.7              | .159              | 0.1               | 0.923             |
| MAT2B     | −0.5              | .154              | −0.7              | .074              | −0.4              | .636              |
| MB        | −3.2              | <.001             | −2.5              | <.001             | −2.8              | .001              |
| MCAM      | −0.7              | .023              | −0.6              | .135              | 0.1               | 0.953             |
| MCEMP1    | 0.4               | .627              | −0.7              | .474              | −0.7              | .714              |
| MFIC      | 0.6               | .173              | −0.7              | .19               | 0.5               | 0.675             |
| MDH1      | −0.6              | .011              | −1.2              | .001              | −0.6              | 0.315             |
| MDH2      | −0.4              | .184              | −1.1              | .001              | −0.6              | 0.237             |
| MDM1      | −1.9              | <.001             | −0.7              | .177              | 0.7               | 0.476             |
| ME1       | −0.5              | .401              | −1.4              | .052              | −0.6              | 0.676             |
| ME2       | 0.5               | .266              | 0.1               | .981              | 0.6               | 0.509             |
| MECP2     | −0.4              | .083              | −0.4              | .215              | −0.3              | 0.602             |
| MEGF6     | −1                | .003              | −0.3              | .591              | −0.8              | 0.244             |
| MESD      | −0.7              | .033              | −1.3              | .003              | −1                | 0.147             |
| METRN1    | −0.5              | .264              | −0.1              | .898              | −0.4              | 0.719             |
| METTL25   | −0.3              | .717              | −1                | .145              | 0.8               | 0.462             |
| METTL7A   | 0.2               | .746              | −0.2              | .738              | −1                | 0.276             |
| MFAP2     | −0.9              | .023              | 0.3               | .558              | 0.2               | 0.883             |
| MFAP4     | −2                | <.001             | −1.4              | .016              | −1                | 0.325             |
| MFAP5     | −0.6              | .072              | −1.2              | .002              | −0.6              | 0.39              |
| MFGE8     | −2.7              | <.001             | −1.9              | .001              | −1.8              | 0.015             |
| MGP       | −1.9              | <.001             | −1.3              | .039              | −0.8              | 0.503             |
| MGST3     | 1.2               | .004              | 1                 | .072              | 1.3               | 0.118             |
| MIF       | −0.6              | .019              | −0.5              | .133              | −0.2              | 0.814             |
| MINPP1    | 0.5               | .264              | −0.9              | .082              | −0.7              | 0.503             |
| MLH1      | 0.3               | .519              | −0.8              | .104              | −0.5              | 0.589             |
| MLKL      | 0.3               | .531              | 0.1               | .971              | 0.8               | 0.334             |
| MLTK      | 0.4               | .275              | 0.7               | .066              | 0.7               | 0.317             |
| MMP2      | −0.9              | .011              | −0.9              | .032              | −0.9              | 0.212             |
| MMP9      | 1                 | .029              | 1.6               | .008              | 1.2               | 0.209             |
| MRNR2     | 0.8               | .023              | 1.3               | .004              | 0.2               | 0.829             |
| MOCS2     | −1.3              | <.001             | −1.2              | .001              | −0.7              | 0.188             |
| MOS       | −0.4              | .529              | −0.8              | .314              | −0.5              | 0.765             |
| MDZD      | 0.6               | .069              | −0.6              | .159              | 0.2               | 0.82              |
| MOPO      | 1.1               | .004              | 2.4               | <.001             | 1.4               | 0.054             |
| MPO       | −0.6              | .032              | −1.5              | <.001             | −0.4              | 0.561             |
| MR2       | 0.4               | .302              | 0.2               | .783              | 0.3               | 0.759             |
| MRV11     | −0.8              | .02               | −0.5              | .232              | −0.6              | 0.387             |
### Supplementary Table II. Continued.

| Gene   | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|--------|-------------------|------------------|--------------------|------------------|--------------------|------------------|
| MSN    | -0.7              | <.001            | -0.5              | .022             | -0.5              | .195             |
| MSRB3  | -1.3              | .001             | -2.2              | <.001            | -0.9              | .283             |
| MST1   | 0.2               | .784             | 0.3               | .646             | -0.1              | .998             |
| MT-CO2 | 0.5               | .301             | 0.7               | .186             | 1.2               | .159             |
| MTHFD1 | 0.1               | .812             | -0.2              | .731             | 0.2               | .889             |
| MTPN   | -0.2              | .507             | -0.7              | .017             | -0.1              | .997             |
| MVP    | 0.1               | .726             | 0.2               | .648             | 0.3               | .589             |
| MYADM  | 0.3               | .574             | 1.5               | .004             | 1                 | .244             |
| MYCBP2 | 0.1               | .986             | -0.8              | .38              | 0.7               | .675             |
| MYDGF  | -0.2              | .636             | -0.8              | .121             | -0.5              | .59              |
| MYH10  | -1.1              | .001             | -0.4              | .41              | -0.3              | .767             |
| MYH11  | -1.5              | <.001            | -0.5              | .299             | -0.4              | .699             |
| MYH13  | -0.5              | .294             | -0.3              | .688             | 0.1               | .923             |
| MYH14  | -0.6              | .162             | -0.1              | .946             | 0.2               | .903             |
| MYH2   | -0.4              | .455             | -0.1              | .98              | 0.3               | .771             |
| MYH9   | 0.3               | .359             | 0.6               | .06              | 0.4               | .503             |
| MYL6   | -1.3              | <.001            | -0.8              | .027             | -0.5              | .477             |
| MYL6B  | -1.2              | .001             | -0.5              | .381             | -0.2              | .891             |
| MYL9   | -1.4              | <.001            | -1.2              | .002             | -0.8              | .195             |
| MYLK   | -1.1              | <.001            | -0.9              | .006             | -0.6              | .276             |
| MYO18A | -2.1              | <.001            | -2.7              | .001             | -2.3              | .026             |
| MYOIC  | -0.4              | .226             | 0.1               | .855             | 0.3               | .725             |
| MYO1D  | 0.3               | .556             | 0.4               | .365             | 0.6               | .472             |
| MYO5B  | -0.6              | .352             | 0.2               | .889             | -0.4              | .792             |
| MYOF   | 0.2               | .781             | 0.4               | .397             | 0.3               | .725             |
| MYOM2  | 0.2               | .737             | -0.9              | .066             | 0.3               | .773             |
| MYOM3  | -1.2              | .001             | -1.3              | .007             | -0.5              | .614             |
| NAA15  | -1.3              | .202             | -3.3              | .006             | 0.2               | .94              |
| NAGK   | 0.3               | .29              | -0.2              | .473             | 0.3               | .578             |
| NAMPT  | 0.6               | .069             | 1.3               | .002             | 1                 | .129             |
| NAPL1  | 0.2               | .792             | -0.3              | .639             | 0.1               | .976             |
| NAPL4  | -0.8              | .001             | -0.9              | .001             | -0.6              | .149             |
| NAPA   | -0.2              | .691             | -0.6              | .14              | -0.4              | .545             |
| NAPG   | -0.2              | .608             | -0.2              | .813             | 0.1               | .944             |
| NAPRT  | -0.4              | .412             | -0.6              | .248             | 0.1               | .923             |
| NARS1  | -0.2              | .722             | -0.2              | .799             | -0.3              | .771             |
| NASP   | 0.2               | .717             | 1.1               | .019             | 0.7               | .421             |
| NAV1   | -1.7              | .001             | -0.5              | .41              | -1.3              | .127             |
| NAV2   | 0.5               | .413             | -0.7              | .263             | 0.4               | .771             |
| NAXE   | -0.6              | .148             | -0.7              | .197             | 0.3               | .788             |
| NCKAP1 | -0.3              | .55              | 0.3               | .525             | 0.2               | .871             |
| NCL    | -0.3              | .389             | -0.5              | .191             | 0.1               | .994             |
| NCOA1  | 0.4               | .476             | -0.1              | .914             | -0.8              | .466             |
| NDRG1  | -0.6              | .04              | -0.6              | .079             | -0.4              | .536             |
| NDRG3  | -0.9              | .001             | -1.1              | .001             | -0.8              | 1.2              |
| NDUFA10| -0.5              | .176             | -1.2              | .006             | -0.2              | .887             |
### Supplementary Table II. Continued.

| Gene      | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|-----------|-------------------|------------------|--------------------|------------------|--------------------|------------------|
| NDUFA13   | −0.5              | .165             | −0.5              | .212             | −0.3              | .721             |
| NDUFA4    | 0.5               | .162             | 0.4               | .395             | 0.7               | .402             |
| NDUFA5    | −0.3              | .411             | −0.5              | .165             | −0.8              | .165             |
| NDUFA6    | 0.2               | .417             | −0.1              | .732             | 0.1               | .994             |
| NDUFB11   | −0.3              | .46              | −0.4              | .479             | −0.2              | .817             |
| NDUFB4    | 0.3               | .548             | 0.2               | .799             | 0.5               | .582             |
| NDUFS1    | 0.3               | .437             | −0.4              | .383             | 0.1               | .968             |
| NDUFS3    | −0.1              | .926             | −0.6              | .395             | 0.1               | .94              |
| NDUFS8    | −0.1              | .964             | −0.5              | .067             | −0.2              | .72              |
| NDUFV2    | −0.4              | .145             | −0.8              | .012             | −0.4              | .602             |
| NECAP2    | 0.8               | .162             | 1                 | .147             | 1                 | .33              |
| NEDD8     | −1.2              | .002             | −1.9              | .001             | −0.3              | .773             |
| NEGR1     | −1                | .002             | −0.8              | .055             | −0.4              | .598             |
| NENF      | −1.3              | .002             | −1.2              | .028             | −0.7              | .469             |
| NEXN      | −1                | .001             | −1                | .005             | −0.8              | .165             |
| NHE1      | 0.2               | .853             | −0.8              | .367             | −0.1              | .998             |
| NIBAN     | −0.5              | .046             | −0.1              | .788             | 0.1               | .978             |
| NIBL1     | 1                 | .008             | 0.4               | .519             | 1                 | .239             |
| NID1      | −0.9              | .001             | −1                | .002             | −0.5              | .329             |
| NID2      | −0.2              | .604             | −0.5              | .171             | 0.4               | .666             |
| NIT2      | −0.7              | .002             | −1                | .001             | −0.5              | .335             |
| NKKX1−2   | −0.3              | .615             | −1.1              | .07              | −0.5              | .685             |
| NLRC4     | −1.4              | .001             | −1.2              | .022             | −0.7              | .461             |
| NLTP      | 0.5               | .024             | −0.1              | .903             | 0.1               | .999             |
| NME1      | 0.4               | .414             | −0.5              | .397             | 0.1               | .964             |
| NNM1      | 0.3               | .523             | 0.1               | .881             | 0.4               | .677             |
| NOLC1     | 2                 | .001             | 2.5               | .001             | 1.6               | .129             |
| NOTCH3    | −1                | .003             | −0.4              | .431             | −0.4              | .668             |
| NPC2      | 0.2               | .727             | −0.3              | .587             | 0.1               | .94              |
| NPEPP5    | −0.3              | .428             | −0.6              | .084             | 0.2               | .805             |
| NPM1      | 0.3               | .147             | 0.1               | .836             | 0.3               | .664             |
| NPNT      | −1.9              | <.001            | −0.6              | .245             | −0.8              | .323             |
| NPTN      | −0.7              | .009             | −0.5              | .174             | −0.3              | .729             |
| NQO2      | −1                | .001             | −1.1              | .004             | −0.6              | .364             |
| NRAP      | −0.5              | .162             | −0.4              | .376             | 0.4               | .699             |
| NSF       | 0.6               | .046             | 0.4               | .295             | 0.2               | .821             |
| NSFL1C    | 0.1               | .899             | −0.5              | .233             | 0.1               | 1.00             |
| NSMCE3    | 0.5               | .103             | −0.4              | .383             | 0.8               | .242             |
| NT5E      | −0.2              | .786             | 0.1               | .855             | 0.2               | .889             |
| NUCE1     | −0.1              | .971             | −0.4              | .186             | −0.2              | .753             |
| NUCE2     | −0.4              | .193             | −0.7              | .041             | −0.4              | .606             |
| NUCKS1    | −0.2              | .806             | −0.9              | .191             | 0.7               | .549             |
| NUDC      | −0.5              | .063             | −0.4              | .326             | 0.1               | .998             |
| NUDT2     | −0.3              | .351             | −0.3              | .452             | 0.1               | .992             |
| NUDT5     | 0.1               | .817             | −0.7              | .052             | 0.4               | .582             |
| NUTF2     | −0.7              | .001             | −0.8              | .002             | −0.6              | .146             |
## Supplementary Table II. Continued.

| Gene     | Log2FC TAA/normal | Adjusted P value | Log2FC TBAD/normal | Adjusted P value | Log2FC TADA/normal | Adjusted P value |
|----------|------------------|------------------|--------------------|------------------|--------------------|------------------|
| OAF      | -2.2             | .001             | -2                 | .021             | -1.9               | .153             |
| OAT      | 0.2              | .615             | 0.2                | .672             | 0.2                | .829             |
| OBSCN    | -1.7             | .01              | -0.6               | .529             | 0.4                | .829             |
| OGDH     | 0.3              | .46              | 0.1                | .862             | 0.2                | .84              |
| OGN      | -0.9             | .022             | -1.2               | .016             | -0.4               | .731             |
| OLA1     | -0.5             | .013             | -0.6               | .007             | -0.4               | .379             |
| OLFM1    | 0.7              | .146             | -0.2               | .765             | 1.1                | .217             |
| OLFML1   | 0.3              | .377             | -0.2               | .674             | 0.2                | .889             |
| OLFML3   | 0.3              | .623             | -0.2               | .811             | 0.6                | .535             |
| OMD      | 0.7              | .115             | 0.2                | .826             | 0.6                | .587             |
| OPTN     | 0.2              | .75              | -0.3               | .597             | 0.1                | .91              |
| OR1T2    | -0.7             | .135             | 0.3                | .682             | 0.4                | .762             |
| OR4C3    | -2.2             | <.001            | -1.8               | .002             | -2.1               | .012             |
| OR51Q1   | -2.6             | <.001            | -2.5               | .003             | -0.9               | .582             |
| OR56B4   | -0.5             | 3.82             | -0.3               | .781             | 0.1                | .961             |
| ORM1     | -0.4             | 0.291            | -0.9               | .012             | -0.1               | .995             |
| ORM2     | 0.1              | 0.877            | -0.9               | .005             | 0.4                | .59              |
| OSTF1    | 0.6              | 0.014            | -0.1               | 0.96             | 0.2                | .781             |
| OTUB1    | -0.1             | 0.891            | -0.3               | 0.543            | 0.3                | .725             |
| OVOS2    | -0.4             | 3.82             | -1.4               | .002             | -0.9               | .252             |
| OXCT1    | -1               | <.001            | -1.2               | .001             | -1.1               | .012             |
| OXSR1    | 0.3              | 0.269            | 0.5                | 0.133            | 0.2                | .881             |
| P4HB     | 0.1              | 0.954            | -0.1               | 0.801            | -0.1               | .837             |
| PA2G4    | 0.4              | 0.296            | 0.2                | .753             | 0.4                | .66              |
| PACSIN2  | -1               | <.001            | -1                 | .004             | -0.5               | .36              |
| PAFAH1B1 | 0.1              | 0.949            | -0.1               | .886             | 0.1                | .842             |
| PAFAH1B2 | -0.2             | 0.553            | -0.9               | .002             | -0.3               | .696             |
| PAFAH1B3 | 1.2              | 0.001            | 0.1                | 0.875            | 0.6                | .464             |
| PAICS    | -0.3             | 0.329            | 0.1                | .959             | -0.1               | .907             |
| PALLD    | -1.2             | <.001            | -1.1               | .001             | -0.8               | .092             |
| PARK7    | -0.9             | <.001            | -1.2               | <.001            | -0.8               | .02              |
| PARVA    | -1.6             | <.001            | -1.2               | .002             | -0.7               | .24              |
| PAWR     | -0.5             | 0.131            | -0.4               | 3.75             | -0.2               | .827             |
| PBX1P1   | -2.2             | <.001            | -1                 | .083             | -1.4               | .091             |
| PCBD1    | -0.6             | 0.21             | -0.7               | 2.34             | -0.2               | .881             |
| PCBPI    | -0.3             | 0.067            | -0.3               | 1.37             | -0.3               | .378             |
| PCBP2    | -0.4             | 0.22             | -0.6               | 0.06             | -0.7               | .212             |
| PCDHB14  | 0.5              | 0.238            | 0.3                | .648             | 0.8                | .253             |
| PCMT1    | -0.5             | 0.017            | -1                 | 0.01             | -0.5               | .237             |
| PCOLCE   | -0.1             | 0.709            | -0.4               | 1.75             | -0.3               | .59              |
| PCOLCE2  | -1               | 0.005            | -0.9               | 0.053            | -1.1               | .129             |
| PCYOX1   | -0.5             | 0.035            | -0.8               | 0.013            | -0.3               | .703             |
| PCYT2    | -0.6             | 0.104            | -0.6               | 0.171            | -1                 | .146             |
| PDAP1    | -0.8             | 0.106            | -0.3               | 0.654            | -0.4               | .772             |
| PDCD10   | -0.1             | 0.892            | -0.3               | 0.512            | -0.6               | .387             |
| PDCD5    | -0.8             | 0.003            | -1.1               | 0.002            | -0.9               | .071             |
### Supplementary Table II. Continued.

| Gene    | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|---------|--------------------|------------------|--------------------|------------------|--------------------|------------------|
| PDCD6   | –1                 | .002             | –0.7               | .066             | –0.5               | .521             |
| PDCD6IP | –0.6               | .005             | –0.4               | .203             | –0.6               | .153             |
| PDCD7   | –1.1               | .03              | –1.1               | .073             | –0.1               | .99              |
| PDGFC   | –2.3               | <.001            | –1.8               | .004             | –1.7               | .067             |
| PDHA1   | –0.3               | .57              | –0.9               | .059             | –0.9               | .217             |
| PDHB    | –1.3               | .002             | –1.3               | .009             | –1.6               | .032             |
| PDA2    | –1.9               | <.001            | –1.2               | .036             | –2.2               | .009             |
| PDA3    | –0.4               | .031             | –0.5               | .019             | –0.4               | .214             |
| PDA4    | –0.4               | .171             | –0.8               | .009             | –0.5               | .329             |
| PDA5    | 0.8                | .003             | 0.6                | .06              | 0.3                | .656             |
| PDA6    | 0.2                | .615             | –0.4               | .15              | –0.1               | .918             |
| PDLIM1  | –1.3               | <.001            | –1.3               | <.001            | –0.9               | .043             |
| PDLIM2  | –0.6               | .091             | –0.5               | .369             | 0.1                | .976             |
| PDLIM3  | –1.6               | <.001            | –1.3               | .002             | –0.8               | .249             |
| PDLIM4  | –1.2               | .001             | –0.9               | .043             | –0.5               | .537             |
| PDLIM5  | –0.8               | .027             | –0.8               | .055             | –0.5               | .549             |
| PDLIM7  | –1.6               | <.001            | –1.3               | .011             | –0.7               | .376             |
| PDSSA   | 0.6                | .018             | 0.3                | .392             | 1                  | .05              |
| PXD1    | 0.5                | .064             | –0.2               | .723             | 0.6                | .191             |
| PEA15   | –1.1               | <.001            | –1.2               | .001             | –0.8               | .138             |
| PEBP1   | –1.2               | <.001            | –1.5               | <.001            | –0.8               | .129             |
| PEF1    | –1.1               | .001             | –0.6               | .174             | –1.3               | .032             |
| PEPD    | –0.5               | .009             | –1.2               | <.001            | –0.4               | .356             |
| PF4     | 0.6                | .286             | 0.8                | .232             | 0.4                | .767             |
| PFDN1   | –0.9               | .007             | –1                 | .012             | –0.6               | .362             |
| PFDN2   | –1.3               | <.001            | –1.7               | <.001            | –1.2               | .065             |
| PFDN5   | –0.5               | .012             | –0.9               | .002             | –0.5               | .283             |
| PFKL    | 1                  | .001             | 1.2                | .002             | 1.1                | .03              |
| PFKM    | –1                 | .002             | –0.5               | .29              | –0.3               | .756             |
| PFKP    | –0.5               | .196             | 0.4                | .424             | 0.1                | .908             |
| PFN1    | –0.4               | .012             | –0.5               | .045             | –0.4               | .332             |
| PFN2    | –1.3               | <.001            | –0.9               | .003             | –1                 | .031             |
| PGAM1   | –0.6               | .029             | –0.6               | .085             | –0.2               | .851             |
| PCD     | 1                  | .001             | 0.8                | .041             | 0.9                | .144             |
| PGK1    | –0.4               | .075             | –0.4               | .203             | –0.2               | .773             |
| PGK2    | –0.8               | .021             | –1.1               | .022             | –0.4               | .713             |
| PGLS    | –0.4               | .043             | –1                 | .001             | –0.4               | .455             |
| PGLYRP2 | –0.1               | .757             | –0.7               | .045             | –0.1               | .939             |
| PGM1    | –0.6               | .001             | –0.5               | .014             | –0.4               | .275             |
| PGM2    | 0.1                | .858             | –0.5               | .171             | 0.2                | .89              |
| PGM3    | 0.5                | .115             | 0.1                | .889             | 0.4                | .619             |
| PGM5    | –1.7               | <.001            | –1.2               | .006             | –0.7               | .315             |
| PGP     | –1.1               | .004             | –0.8               | .095             | 0.1                | .953             |
| PGRMC1  | –1.3               | <.001            | –1                 | .006             | –0.7               | .219             |
| PHB     | –0.1               | .706             | –0.5               | .095             | –0.2               | .815             |
| PHB2    | 0.3                | .387             | –0.2               | .575             | 0.3                | .647             |
| Gene     | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|----------|-------------------|------------------|--------------------|------------------|--------------------|------------------|
| PHGDH    | −1.2              | <.001            | −1.2               | .002             | −0.6               | .379             |
| PHPT1    | −0.8              | .001             | −0.9               | .005             | −0.6               | .237             |
| PI4KA    | −1.1              | .012             | −1.1               | .021             | −0.2               | .907             |
| PIK3C    | −0.5              | .201             | −0.6               | .288             | −0.1               | .94              |
| PIMREG   | 0.3               | .562             | −0.4               | .487             | 0.9                | .253             |
| PITHD1   | −0.4              | .156             | −0.7               | .018             | −0.3               | .635             |
| PITPNB   | −0.2              | .738             | −0.1               | .9               | 0.4                | .719             |
| PIRRM1   | −1.4              | .001             | −1                 | .059             | −0.6               | .531             |
| PKD2     | −1.2              | .001             | −0.5               | .32              | −0.4               | .675             |
| PKM      | 0.1               | .858             | −0.1               | .928             | 0.3                | .647             |
| PKP4     | −2.1              | .028             | −0.5               | .765             | −1.3               | .582             |
| PLA2G2A  | −1                | .006             | −0.5               | .389             | −0.2               | .907             |
| PLAUR    | 0.5               | .479             | 0.3                | .8               | 0.1                | .988             |
| PLCD1    | −1.6              | <.001            | −1.3               | .004             | −1                 | .14              |
| PLCH1    | 0.2               | .699             | 0.1                | .892             | 0.3                | .734             |
| PLD3     | 0.4               | .302             | −0.3               | .615             | 0.4                | .71              |
| PLEC     | 0.7               | .007             | 0.4                | .35              | 0.5                | .422             |
| PLG      | 0.8               | .009             | 0.6                | .145             | 0.6                | .356             |
| PLIN1    | −0.5              | .141             | −0.7               | .11              | −0.1               | .959             |
| PLIN3    | −0.4              | .233             | −0.9               | .011             | −0.3               | .729             |
| PLOD1    | 0.4               | .382             | 0.5                | .374             | 0.2                | .83              |
| PLP2     | −0.1              | .874             | 0.3                | .711             | 0.7                | .563             |
| PL53     | −0.6              | .063             | −0.6               | .153             | −0.1               | .909             |
| PLTP     | 0.8               | .026             | −0.2               | .847             | 0.4                | .722             |
| PLXDC2   | −0.3              | .469             | −0.9               | .013             | 0.1                | .998             |
| PLXNB2   | 0.2               | .788             | 0.2                | .754             | 0.2                | .849             |
| PNP      | 0.7               | .021             | 0.2                | .716             | 0.3                | .677             |
| PODN     | −0.3              | .301             | −1.2               | .001             | −0.6               | .245             |
| POLD1    | −1.6              | .026             | −0.8               | .447             | −2.1               | .147             |
| PONI     | 0.9               | .008             | −0.3               | .605             | 0.7                | .413             |
| POSTN    | 0.6               | .221             | −0.2               | .811             | 0.1                | .995             |
| POTEF    | −0.7              | .081             | −1.6               | .002             | −0.4               | .725             |
| POTE1    | −1.4              | .001             | −1.7               | .001             | −0.7               | .421             |
| POTEJ    | −0.8              | .021             | −1.3               | .003             | −0.4               | .63              |
| PPA1     | −0.7              | .008             | −1.2               | .001             | −0.6               | .369             |
| PPA2     | 0.1               | .874             | −0.3               | .389             | −0.3               | .725             |
| PPBP     | −0.8              | .035             | −0.9               | .048             | −1                 | .147             |
| PPCS     | −0.2              | .732             | −0.5               | .171             | −0.2               | .817             |
| PPFIBP1  | −0.3              | .335             | −0.8               | .03              | −0.7               | .275             |
| PPIA     | −0.5              | .028             | −0.6               | .032             | −0.3               | .637             |
| PPIB     | 0.2               | .438             | 0.1                | .906             | 0.2                | .773             |
| PPIC     | −0.3              | .531             | −0.3               | .479             | −0.5               | .474             |
| PPM1F    | −2                 | <.001            | −1.6               | .002             | −2.1               | .005             |
| PPM1E1   | 0.8               | .08              | 0.3                | .627             | 0.5                | .686             |
| PPPICB   | −1.4              | <.001            | −0.9               | .034             | −0.7               | .315             |
| PPPICC   | −0.7              | .296             | −0.4               | .699             | −0.6               | .719             |

(Continued on next page)
Supplementary Table II. Continued.

| Gene   | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|--------|-------------------|------------------|-------------------|------------------|-------------------|------------------|
| PPP1R12A | −0.7              | .001             | −0.7              | .006             | −0.7              | .118             |
| PPP1R12B | −1.7              | <.001            | −1.4              | .003             | −0.7              | .327             |
| PPP1R14A | −1.8              | <.001            | −1.4              | .004             | −0.7              | .364             |
| PPP1R7   | −0.8              | .016             | −0.9              | .045             | −1.1              | .102             |
| PPP2R1A  | −0.1              | .702             | 0.1               | .884             | 0.2               | 0.772            |
| PPP6R3   | −1                | 1.81             | −1.4              | 1.38             | −0.5              | 0.808            |
| PPT1     | −0.2              | 0.576            | −0.8              | 0.034            | −0.4              | 0.541            |
| PRAF2    | 0.2               | 0.707            | −0.1              | 0.924            | 0.3               | 0.772            |
| PRDBP    | −0.3              | 0.6              | 0.5               | 0.462            | 0.8               | 0.436            |
| PRDX1    | −0.7              | 0.001            | −1                | 0.001            | −0.6              | 0.138            |
| PRDX2    | 0.3               | 2.22             | −0.5              | 0.097            | −0.1              | 0.929            |
| PRDX3    | 0.1               | 0.988            | −0.4              | 0.06             | −0.2              | 0.63             |
| PRDX4    | 0.4               | 0.405            | 0.4               | 0.473            | −0.1              | 0.998            |
| PRDX5    | −0.2              | 0.537            | −0.5              | 0.043            | −0.2              | 0.668            |
| PRDX6    | −0.5              | 0.006            | −0.6              | 0.004            | −0.3              | 0.46             |
| PRELP    | 0.1               | 0.836            | −0.7              | 0.061            | 0.2               | 0.821            |
| PRKACA   | −0.6              | 0.019            | −0.6              | 0.067            | −0.3              | 0.751            |
| PRKACB   | −1                | 0.012            | −0.5              | 0.397            | 0.1               | 0.955            |
| PRKAR1A  | −1                | <.001            | −1.2              | <.001            | −0.9              | 0.034            |
| PRKAR2A  | −1.2              | <.001            | −1.1              | 0.01             | −0.7              | 0.327            |
| PRKCB    | −2.5              | 0.003            | −2.4              | 0.023            | −1                | 0.669            |
| PRKCSH   | 0.1               | 0.966            | −0.4              | 0.179            | −0.1              | 0.969            |
| PRKGI    | −1                | 0.002            | −0.4              | 0.418            | −0.2              | 0.891            |
| PROC     | 0.4               | 0.154            | −0.6              | 0.067            | 0.2               | 0.851            |
| PROS1    | 0.6               | 0.033            | −0.3              | 0.403            | 0.8               | 0.158            |
| PROS2    | −1                | 0.026            | −1.2              | 0.025            | −1                | 0.252            |
| PROX2    | −1.1              | 0.003            | −0.7              | 0.138            | −0.5              | 0.618            |
| PRPF4B   | −0.8              | 0.034            | −0.8              | 0.085            | −1                | 0.171            |
| PRPS1    | 0.1               | 0.877            | −0.1              | 0.862            | −0.2              | 0.827            |
| PRR36    | −0.6              | 0.224            | −0.6              | 0.352            | −0.3              | 0.792            |
| PRSS23   | −0.6              | 0.188            | −0.6              | 0.286            | −0.7              | 0.378            |
| PRTG     | 0.8               | 0.033            | −0.8              | 0.122            | 0.2               | 0.878            |
| PRTN3    | 1.3               | 0.002            | 2                 | 0.001            | 1.5               | 0.05             |
| PRXL2A   | 0.1               | 0.96             | −0.6              | 0.167            | 0.7               | 0.281            |
| PSAP     | −0.6              | 0.018            | −0.6              | 0.055            | −0.2              | 0.734            |
| PSIP1    | −1                | <.001            | −1.4              | <.001            | −1.1              | 0.021            |
| PSMA1    | −0.1              | 0.965            | −0.7              | 0.045            | 0.1               | 0.98             |
| PSMA2    | −0.2              | 0.575            | −0.6              | 0.039            | −0.3              | 0.691            |
| PSMA3    | 0.2               | 0.454            | −0.2              | 0.568            | 0.1               | 0.998            |
| PSMA4    | 0.2               | 0.526            | −0.5              | 0.086            | 0.1               | 0.889            |
| PSMA5    | −0.3              | 0.35             | −0.9              | 0.002            | −0.3              | 0.594            |
| PSMA6    | 0.1               | 0.909            | −0.6              | 0.011            | 0.1               | 0.889            |
| PSMA7    | −0.2              | 0.534            | −0.3              | 0.424            | 0.3               | 0.771            |
| PSMB1    | 0.4               | 0.263            | 0.1               | 0.884            | 0.5               | 0.393            |
| PSMB2    | 0.3               | 0.45             | −0.3              | 0.576            | 0.3               | 0.696            |
| PSMB3    | 0.4               | 0.241            | −0.6              | 0.122            | 0.3               | 0.677            |
**Supplementary Table II.** Continued.

| Gene       | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|------------|--------------------|------------------|--------------------|------------------|--------------------|------------------|
| PSMB4      | −0.4               | .223             | −0.8               | .014             | −0.2               | .815             |
| PSMB5      | −0.3               | .314             | −0.9               | .013             | −0.3               | .721             |
| PSMB6      | −0.6               | .004             | −1                 | .001             | −0.6               | .149             |
| PSMB7      | 0.8                | .202             | 0.5                | .543             | 0.9                | .514             |
| PSMB8      | 1.1                | .005             | 0.9                | .066             | 1.9                | .008             |
| PSMB9      | 0.9                | .002             | 0.2                | 0.652            | 0.8                | .149             |
| PSMC1      | 0.2                | .544             | −0.2               | .716             | 0.1                | .963             |
| PSMC2      | 0.3                | .448             | 0.3                | .487             | 0.3                | .676             |
| PSMC3      | 0.5                | .113             | −0.2               | .615             | 0.4                | .676             |
| PSMC4      | 0.1                | .766             | −0.2               | .729             | 0.2                | .776             |
| PSMC5      | −0.3               | .221             | −0.4               | .237             | −0.2               | .849             |
| PSMC6      | 0.4                | .214             | 0.3                | .546             | −0.1               | .998             |
| PSMD1      | 0.3                | .319             | 0.1                | .817             | 0.4                | .582             |
| PSMD11     | 0.2                | .439             | −0.2               | .647             | 0.3                | .679             |
| PSMD12     | 0.1                | .999             | −0.2               | .781             | 0.2                | .868             |
| PSMD13     | 0.5                | .101             | 0.1                | .915             | 0.5                | .424             |
| PSMD14     | −0.2               | .548             | −0.8               | .004             | −0.3               | .608             |
| PSMD2      | 0.6                | .032             | 0.5                | .219             | 0.5                | .46              |
| PSMD3      | 0.4                | .217             | 0.3                | .438             | 0.5                | .475             |
| PSMD5      | −0.4               | .182             | −0.3               | .594             | 0.1                | .9              |
| PSMD6      | 0.9                | <.001            | 0.7                | .033             | 0.9                | .048             |
| PSMD7      | 0.1                | .889             | −0.3               | .537             | 0.3                | .8              |
| PSMD9      | −0.3               | .326             | −0.8               | .018             | 0.2                | .767             |
| PSME1      | 0.2                | .322             | −0.3               | .345             | 0.2                | .777             |
| PSME2      | 0.3                | .313             | −0.4               | .202             | −0.1               | .923             |
| PSMF1      | −1                 | .001             | −1                 | .008             | −0.6               | .342             |
| PTPB1      | −0.3               | .341             | −0.8               | .013             | −0.4               | .541             |
| PTGES3     | −0.7               | .024             | −0.8               | .021             | −0.3               | .678             |
| PTGIS      | 0.3                | .365             | 1.1                | .004             | 1.2                | .04             |
| PTGR1      | −1.4               | .001             | −0.9               | .067             | −1.3               | .091             |
| PTK2       | −0.5               | .068             | −0.7               | .052             | −0.1               | .959             |
| PTMA       | −0.1               | .923             | −0.2               | .754             | 0.2                | .829             |
| PTMS       | −0.8               | .007             | −1                 | .007             | −0.4               | .631             |
| PTPA       | 0.1                | .879             | −0.5               | .105             | 0.1                | .908             |
| PTPN11     | −0.8               | .004             | −0.6               | .09              | −0.6               | .315             |
| PTPN13     | −1.8               | <.001            | −1                 | .044             | −1.6               | .026             |
| PTPN4      | −1.8               | <.001            | −0.7               | .201             | −0.9               | .315             |
| PTRF       | −1.3               | <.001            | −1                 | .017             | −0.9               | .144             |
| PURA       | −0.8               | .007             | −0.6               | .11              | −0.3               | .675             |
| PUS10      | −0.1               | .967             | −0.5               | .606             | 0.7                | .696             |
| PXDN       | −0.1               | .874             | −0.2               | .697             | 0.3                | .736             |
| PYGB       | −0.6               | .066             | −0.6               | .132             | −0.1               | .903             |
| PYCL       | 0.4                | .245             | 0.8                | .019             | 0.6                | .345             |
| PZP        | −0.6               | .204             | 0.2                | .847             | −0.3               | .788             |
| QARS1      | 0.5                | .106             | 0.1                | .915             | −0.1               | .956             |
| QDPR       | −0.9               | .001             | −1.3               | <.001            | −0.7               | .191             |

(Continued on next page)
### Supplementary Table II. Continued.

| Gene   | Log₂FC TAA/normal | Adjusted P value<sup>a</sup> | Log₂FC TBAD/normal | Adjusted P value<sup>a</sup> | Log₂FC TADA/normal | Adjusted P value<sup>a</sup> |
|--------|-------------------|-----------------------------|-------------------|-----------------------------|-------------------|-----------------------------|
| QSOX1  | 0.6               | 0.051                       | 0.6               | 0.158                       | 0.3               | 0.725                       |
| QTRT1  | 0.6               | 0.1                         | 0.12              | 0.009                       | 0.3               | 0.754                       |
| RAB10  | 0.6               | 0.012                       | 0.7               | 0.026                       | 0.7               | 0.129                       |
| RAB11B | 1.2               | 0.001                       | 1.2               | 0.536                       | 0.012             | 0.329                       |
| RAB14  | 0.1               | 0.875                       | 0.3               | 0.41                        | 0.2               | 0.775                       |
| RAB18  | 1.1               | 0.02                        | 0.8               | 0.183                       | 0.8               | 0.469                       |
| RAB21  | 1.1               | 0.845                       | 0.4               | 0.244                       | 0.1               | 0.953                       |
| RAB23  | 2.1               | <.001                       | 1.2               | 0.012                       | 0.5               | 0.472                       |
| RAB2A  | 0.1               | 0.8                         | 0.5               | 0.242                       | 0.2               | 0.807                       |
| RAB35  | 0.3               | 0.392                       | 0.3               | 0.495                       | 0.4               | 0.582                       |
| RAB41  | 0.3               | 0.512                       | 0.7               | 0.104                       | 0.8               | 0.275                       |
| RAB5B  | 0.1               | 0.005                       | 0.12              | 0.004                       | 0.2               | 0.802                       |
| RAB5C  | 0.4               | 0.524                       | 0.17              | 0.018                       | 0.1               | 0.976                       |
| RAB7A  | 0.3               | 0.301                       | 0.3               | 0.402                       | 0.2               | 0.772                       |
| RAC1   | 0.3               | 0.473                       | 0.7               | 0.179                       | 0.2               | 0.905                       |
| RAC3   | 0.5               | 0.354                       | 0.6               | 0.374                       | 0.7               | 0.61                        |
| RACK1  | 0.3               | 0.114                       | 0.2               | 0.628                       | 0.3               | 0.554                       |
| RAD18  | 2.1               | <.001                       | 1.5               | 0.025                       | 2.1               | 0.032                       |
| RAD23A | 0.1               | 0.844                       | 0.4               | 0.575                       | 0.4               | 0.687                       |
| RAD23B | 0.3               | 0.296                       | 0.8               | 0.008                       | 0.4               | 0.369                       |
| RALY   | 1.2               | 0.61                        | 0.2               | 0.618                       | 0.3               | 0.714                       |
| RAN    | 0.1               | 0.996                       | 0.1               | 0.892                       | 0.1               | 0.949                       |
| RANBP1 | 0.2               | 0.509                       | 0.6               | 0.048                       | 0.1               | 0.968                       |
| RAP1   | 0.04              | 0.488                       | 0.1               | 0.888                       | 0.2               | 0.907                       |
| RAP1GDS1| 1.0               | 0.008                       | 0.8               | 0.077                       | 0.8               | 0.318                       |
| RARRES2| 0.07              | 0.066                       | 0.4               | 0.402                       | 0.3               | 0.771                       |
| RBBP8NL| 0.09              | 0.081                       | 0.5               | 0.519                       | 0.1               | 0.982                       |
| RBCK1  | 0.4               | 0.27                        | 0.5               | 0.312                       | 0.7               | 0.326                       |
| RBMX   | 0.7               | 0.019                       | 0.9               | 0.01                        | 0.6               | 0.308                       |
| RBP1   | 1.2               | <.001                       | 0.8               | 0.052                       | 0.4               | 0.609                       |
| RBP4   | 0.6               | 0.034                       | 0.17              | <.001                       | 0.9               | 0.115                       |
| RBPMS  | 1.3               | <.001                       | 0.13              | 0.001                       | 0.8               | 0.203                       |
| RBX1   | 0.5               | 0.327                       | 0.12              | 0.043                       | 0.4               | 0.719                       |
| RCN1   | 0.5               | 0.171                       | 0.8               | 0.038                       | 0.2               | 0.81                        |
| RCN3   | 0.6               | 0.026                       | 0.5               | 0.151                       | 0.5               | 0.408                       |
| RDX    | 0.09              | 0.045                       | 0.4               | 0.549                       | 1                 | 0.286                       |
| RECQL  | 0.8               | 0.009                       | 0.7               | 0.087                       | 0.8               | 0.191                       |
| REEP5  | 0.1               | 0.875                       | 0.7               | 0.177                       | 0.2               | 0.912                       |
| REEP6  | 0.3               | 0.483                       | 0.5               | 0.33                        | 0.1               | 0.957                       |
| RFTN1  | 0.1               | 0.953                       | 0.3               | 0.514                       | 0.3               | 0.773                       |
| RGS22  | 0.1               | 0.893                       | 0.1               | 0.036                       | 0.4               | 0.685                       |
| RHBDI1 | 0.9               | 0.049                       | 0.6               | 0.293                       | 0.1               | 0.967                       |
| RHOA   | 0.7               | 0.022                       | 0.9               | 0.052                       | 0.8               | 0.244                       |
| RHOB   | 1.6               | <.001                       | 1.3               | 0.001                       | 1.3               | 0.01                        |
| RHOC   | 1.0               | 0.009                       | 1.0               | 0.041                       | 0.6               | 0.513                       |
| RHOG   | 0.6               | 0.097                       | 0.9               | 0.024                       | 0.7               | 0.278                       |
| Gene      | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|-----------|-------------------|------------------|-------------------|------------------|-------------------|-----------------|
| RIC8A     | 0.2               | 0.692            | 0.5               | 0.121            | 0.2               | 0.792           |
| RIFI      | −0.5              | 0.155            | −0.6              | 0.184            | −0.2              | 0.829           |
| RILPL1    | −1.5              | <.001            | −1.6              | <.001            | −1.2              | 0.009           |
| RINT1     | 0.2               | 0.827            | −0.4              | 0.724            | 0.9               | 0.578           |
| RNASE1    | −1.3              | 0.003            | −1.9              | 0.001            | −1.8              | 0.021           |
| RNASE4    | −0.6              | 0.141            | −0.2              | 0.781            | −0.2              | 0.828           |
| RNFS1     | −0.4              | 0.544            | −1                | 0.171            | −0.3              | 0.876           |
| RNIH      | −0.3              | 0.131            | −0.2              | 0.518            | −0.1              | 0.983           |
| RNPEP     | −0.2              | 0.611            | −0.4              | 0.421            | −0.4              | 0.656           |
| RPL10     | 0.1               | 0.966            | 0.2               | 0.873            | 0.1               | 0.988           |
| RPL10A    | 0.6               | 0.067            | 0.6               | 0.141            | 0.7               | 0.252           |
| RPL11     | 0.2               | 0.783            | −0.2              | 0.669            | 0.3               | 0.792           |
| RPL12     | 0.2               | 0.522            | 0.3               | 0.393            | 0.3               | 0.675           |
| RPL13     | 0.7               | 0.024            | 0.5               | 0.237            | 0.9               | 0.167           |
| RPL14     | 0.4               | 0.225            | −0.1              | 0.96             | 0.3               | 0.7             |
| RPL15     | 1.1               | 0.002            | 1.2               | 0.005            | 1.2               | 0.077           |
| RPL17     | 1.2               | 0.001            | 0.7               | 0.17             | 1                 | 0.148           |
| RPL18     | 1                 | 0.003            | 0.7               | 0.089            | 1.2               | 0.066           |
| RPL18A    | 0.8               | 0.022            | 1.1               | 0.011            | 0.9               | 0.234           |
| RPL22     | −0.1              | 0.858            | −0.2              | 0.747            | 0.3               | 0.725           |
| RPL23     | −0.1              | 0.937            | −0.4              | 0.572            | −0.2              | 0.852           |
| RPL23A    | −0.4              | 0.152            | −0.8              | 0.012            | −0.5              | 0.418           |
| RPL24     | 1.1               | 0.006            | 0.9               | 0.11             | 0.6               | 0.511           |
| RPL27     | 1.6               | <.001            | 1.3               | 0.008            | 1.9               | 0.008           |
| RPL27A    | 0.6               | 0.041            | 0.4               | 0.355            | 0.6               | 0.321           |
| RPL28     | 1                 | 0.001            | 0.8               | 0.033            | 1                 | 0.058           |
| RPL29     | 1                 | 0.001            | 0.6               | 0.132            | 0.8               | 0.157           |
| RPL3      | 1.1               | 0.001            | 1                 | 0.013            | 1.2               | 0.045           |
| RPL30     | −0.1              | 0.816            | −0.5              | 0.374            | 0.5               | 0.646           |
| RPL31     | 0.3               | 0.578            | −0.4              | 0.537            | 0.3               | 0.762           |
| RPL34     | 0.8               | 0.062            | 0.7               | 0.179            | 0.4               | 0.719           |
| RPL35     | 1.1               | 0.035            | 0.6               | 0.411            | 0.7               | 0.0831          |
| RPL38     | 1.4               | 0.007            | 1                 | 0.168            | 0.7               | 0.575           |
| RPL4      | 1                 | 0.004            | 0.7               | 0.083            | 1                 | 0.151           |
| RPL5      | 0.7               | 0.048            | 0.4               | 0.352            | 0.9               | 0.199           |
| RPL6      | 1.1               | <.001            | 0.9               | 0.006            | 1.2               | 0.009           |
| RPL7      | 0.8               | 0.002            | 1                 | 0.005            | 1                 | 0.048           |
| RPL7A     | 0.8               | 0.01             | 0.6               | 0.107            | 0.8               | 0.212           |
| RPL8      | 0.5               | 0.306            | −0.3              | 0.688            | 0.2               | 0.869           |
| RPL9      | 0.6               | 0.151            | 0.3               | 0.672            | 0.6               | 0.501           |
| RPLP0     | −0.4              | 0.444            | −0.6              | 0.324            | −0.1              | 0.953           |
| RPLP1     | −0.6              | 0.089            | −0.9              | 0.038            | −0.5              | 0.582           |
| RPLP2     | −0.5              | 0.114            | −0.7              | 0.067            | −0.3              | 0.771           |
| RPNI      | 0.4               | 0.118            | 0.2               | 0.65             | 0.3               | 0.725           |
| RPNI2     | 0.8               | 0.003            | 0.8               | 0.024            | 0.7               | 0.19            |
| RPS10     | 1.1               | 0.003            | 0.7               | 0.159            | 1.2               | 0.06            |

(Continued on next page)
| Gene     | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|----------|------------------|------------------|--------------------|-----------------|--------------------|-----------------|
| RPS11    | 0.5              | .108             | 0.3                | .476            | 0.6                | .355            |
| RPS12    | 0.1              | .615             | −0.1               | .737            | −0.1               | .889            |
| RPS13    | 1                | .002             | 0.5                | .294            | 1                  | .129            |
| RPS14    | 0.4              | .349             | 0.3                | .551            | 0.8                | .242            |
| RPS15A   | 0.6              | .048             | 0.7                | .088            | 0.8                | .242            |
| RPS16    | 0.8              | .022             | 0.7                | .16             | 1.1                | .103            |
| RPS18    | 0.9              | <.001            | 0.9                | .002            | 1                  | .015            |
| RPS19    | 0.2              | .515             | −0.2               | .667            | 0.4                | .554            |
| RPS2     | 0.7              | .032             | 0.6                | .129            | 0.7                | .262            |
| RPS20    | −0.1             | .961             | −0.3               | .558            | 0.1                | .939            |
| RPS21    | −0.3             | .532             | −0.9               | .028            | −0.2               | .907            |
| RPS23    | 0.6              | .144             | 1                  | .044            | 0.7                | .369            |
| RPS24    | 0.4              | .455             | 0.6                | .243            | 0.9                | .26             |
| RPS25    | 0.6              | .112             | 0.2                | .672            | 0.6                | .461            |
| RPS27L   | −2.4             | <.001            | −1.7               | .01             | −0.6               | .687            |
| RPS28    | −1.2             | .074             | 0.2                | .885            | −0.9               | .575            |
| RPS3     | 0.5              | .045             | 0.2                | .765            | 0.5                | .422            |
| RPS3A    | 0.7              | .02              | 0.5                | .145            | 0.7                | .214            |
| RPS4X    | 1.2              | .001             | 1.2                | .005            | 1.2                | .071            |
| RPS5     | 0.5              | .088             | 0.3                | .431            | 0.5                | .469            |
| RPS6     | 0.9              | <.001            | 1.1                | .001            | 0.8                | .071            |
| RPS6KA2  | 1                | .057             | 0.2                | .825            | 1.3                | .246            |
| RPS6KA3  | −2               | .001             | −2.2               | .004            | −0.4               | .83             |
| RPS7     | 0.6              | .077             | 0.5                | .32             | 0.9                | .195            |
| RPS8     | 0.2              | .43              | 0.3                | .339            | 0.3                | .677            |
| RPS9     | 1                | .001             | 1.2                | .002            | 1.2                | .019            |
| RPSA     | 0.2              | .546             | −0.6               | .099            | −0.1               | .961            |
| RRAD     | −0.3             | .662             | −0.1               | .916            | 0.6                | .648            |
| RRAS     | −1               | .002             | −0.6               | .143            | −0.4               | .701            |
| RRBP1    | 0.2              | .614             | −0.4               | .418            | −0.6               | .355            |
| RSAD2    | −0.6             | .363             | 0.7                | .415            | 0.4                | .797            |
| RSU1     | −1.1             | <.001            | −1.2               | .002            | −0.8               | .182            |
| RTCB     | −0.8             | .002             | −0.7               | .045            | −0.5               | .41             |
| RTN4     | 0.1              | .887             | 0.2                | .747            | −0.1               | .986            |
| RTRAF    | −0.4             | .072             | −0.8               | .007            | −0.3               | .591            |
| RUNDC3A  | 0.8              | .08              | −0.2               | .74             | 0.7                | .514            |
| RUVBL1   | −0.3             | .368             | −0.3               | .398            | −0.2               | .771            |
| RUVBL2   | −0.2             | .705             | −0.5               | .168            | −0.2               | .826            |
| S100A11  | −0.2             | .457             | −0.4               | .186            | −0.3               | .675            |
| S100A13  | 0.4              | .227             | −0.1               | .948            | 0.3                | .748            |
| S100A16  | 0.3              | .279             | 0.1                | .916            | 0.4                | .533            |
| S100A4   | −0.9             | .001             | −0.7               | .027            | −0.6               | .309            |
| S100A6   | −0.4             | .111             | −0.7               | .019            | −0.2               | .741            |
| S100A8   | 1.3              | .004             | 1.7                | .003            | 1.7                | .047            |
| SAA1     | 0.6              | .38              | 0.7                | .352            | 2.4                | .021            |
| SAMHD1   | 1                | .002             | 0.4                | .361            | 1                  | .09             |
| Gene   | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|--------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|
| SAMM50 | 0.7               | .183            | 0.9               | .151            | 1.8               | .05             |
| SARS1  | −0.2              | .558            | −0.4              | .325            | 0.1               | .879            |
| SBDS   | −0.8              | .009            | −1                | .01             | −0.2              | .792            |
| SBSPON | −2.2              | <.001           | −1.9              | <.001           | −1.7              | .003            |
| SCARB2 | 1.2               | .007            | 1.4               | .012            | 1.7               | .05             |
| SCN8A  | −0.8              | 1.25            | −0.7              | .259            | −0.3              | .864            |
| SCRN1  | −0.9              | .002            | −1                | .007            | −0.3              | .725            |
| SCUBE3 | −1.7              | <.001           | −0.8              | .052            | −1                | .109            |
| SCY2   | 0.3               | 1.85            | −1                | .312            | 1.1               | .533            |
| SDHA   | −0.5              | 1.33            | −0.8              | .05             | −0.4              | .656            |
| SDHB   | −0.2              | .766            | 0.1               | .915            | 0.2               | .899            |
| SEClB  | −0.1              | .806            | −0.7              | .107            | −0.1              | .939            |
| SEC13  | −0.1              | .949            | −0.5              | .362            | −0.2              | .86             |
| SEC14L5| −0.2              | .746            | −0.4              | .552            | 0.5               | .649            |
| SEC22B | 0.9               | .007            | 1                 | .02             | 0.7               | .339            |
| SEC23A | 0.2               | .79             | −0.2              | .71             | −0.2              | .876            |
| SEC31A | 0.7               | .021            | 0.6               | .121            | 0.4               | .691            |
| SELENBP1| −0.7              | <.001           | −1                | <.001           | −0.5              | 1.82            |
| SELENOM| −1.5              | <.001           | −1.2              | .006            | −1.3              | 0.34            |
| SELENOP| 0.1               | .901            | −0.3              | .564            | 0.2               | .79             |
| SEMA3B | −1.3              | <.001           | −0.7              | .109            | −0.6              | 4.22            |
| SEMA5B | −0.2              | .8              | −1.2              | .066            | 0.8               | 5.33            |
| SERBP1 | −0.5              | .118            | −0.4              | .256            | −0.5              | 3.76            |
| SERPINA1| −0.3              | .29             | −1.4              | <.001           | −0.3              | .687            |
| SERPINA10| 0.2               | .83             | −0.8              | 1.49            | −0.1              | .994            |
| SERPINA3| −0.3              | .526            | −0.9              | .038            | 0.3               | 7.73            |
| SERPINA4| −0.1              | .908            | −0.3              | .376            | 0.1               | 9.4             |
| SERPINA5| −1                | .001            | −0.9              | .027            | −0.5              | 4.45            |
| SERPINA6| −0.2              | .758            | −1                | .009            | −0.2              | 8.49            |
| SERPINA7| −0.2              | .64             | −1.4              | .001            | −0.4              | 5.54            |
| SERPINB1| 0.4               | .167            | 0.5               | 1.48            | 0.5               | 369             |
| SERPINB6| 0.3               | .437            | 0.3               | .562            | 0.7               | 3.45            |
| SERPINC1| −0.2              | .651            | −0.4              | .161            | 0.1               | 9.16            |
| SERPIND1| 0.3               | .263            | −0.4              | .193            | 0.5               | 369             |
| SERPINE2| 0.9               | .058            | 0.3               | .716            | 0.7               | 48.8            |
| SERPINF1| −0.1              | .783            | −0.8              | .008            | −0.3              | 6.02            |
| SERPINF2| 0.5               | .117            | 0.8               | .039            | 0.7               | 2.94            |
| SERPING1| 0.1               | .947            | −0.8              | .045            | 0.3               | 6.87            |
| SERPINH1| 0.2               | .776            | −0.1              | .977            | 0.2               | 8.29            |
| SETH1B | 0.7               | .031            | 0.1               | .923            | 1.2               | 0.74            |
| SF3B6  | 0.3               | .656            | −1.4              | .028            | 0.1               | 9.58            |
| SFQ    | 0.1               | .767            | −0.3              | .583            | −0.5              | 5.13            |
| SFRP1  | −1.5              | <.001           | −1.3              | .002            | −1.2              | 0.51            |
| SFXT3  | 0.1               | .845            | −0.1              | 8.47            | 0.4               | 5.42            |
| SGCD   | −0.6              | .04             | 0.3               | .438            | 0.4               | 6.33            |
| SH3BGRL| −1.1              | <.001           | −1.6              | <.001           | −0.8              | 0.95            |

(Continued on next page)
| Gene     | Log2FC TAA/normal | Adjusted P value<sup>a</sup> | Log2FC TBAD/normal | Adjusted P value<sup>a</sup> | Log2FC TADA/normal | Adjusted P value<sup>a</sup> |
|----------|-------------------|------------------------------|--------------------|------------------------------|--------------------|------------------------------|
| SH3BGRL3 | 0.1               | 0.786                        | -0.6               | 0.43                         | -0.2               | 0.782                        |
| SH3BPS5  | -0.7              | 0.007                        | -0.5               | 125                          | -0.4               | 0.582                        |
| SH3CLB1  | -0.8              | 0.004                        | -0.9               | 0.005                        | -0.6               | 0.249                        |
| SH3CLB2  | -0.9              | 0.004                        | -1.4               | 0.001                        | -0.8               | 0.203                        |
| SH3RF2   | 1.4               | <0.001                       | 2.2                | <0.001                       | 1.7                | 0.008                        |
| SHMTI    | -0.5              | 0.067                        | -0.6               | 0.092                        | -0.4               | 0.568                        |
| SIN3B    | -0.3              | 0.494                        | -1.1               | 0.036                        | -0.2               | 0.9                          |
| SKP1     | -0.3              | 0.359                        | -0.5               | 0.138                        | -0.2               | 0.829                        |
| SLC22A17 | 0.4               | 0.575                        | -1.1               | 0.14                         | 0.9                | 0.498                        |
| SLC25A1  | 0.4               | 0.291                        | 0.4                | 0.351                        | 0.6                | 0.3                          |
| SLC25A11 | 1.2               | <0.001                       | 0.9                | 0.01                         | 1.1                | 0.046                        |
| SLC25A12 | 0.4               | 0.254                        | 0.6                | 0.122                        | 0.2                | 0.829                        |
| SLC25A24 | 0.2               | 0.634                        | 0.3                | 0.515                        | 0.3                | 0.769                        |
| SLC25A3  | 1.2               | 0.001                        | 1.2                | 0.01                         | 1.2                | 0.084                        |
| SLC25A4  | -0.7              | 0.084                        | 0.2                | 0.749                        | 0.4                | 0.677                        |
| SLC25A5  | 1                 | 0.052                        | 0.6                | 0.434                        | 1                  | 0.364                        |
| SLC27A2  | 0.2               | 0.684                        | -0.5               | 0.153                        | 0.1                | 0.923                        |
| SLC27A3  | -0.2              | 0.769                        | -0.2               | 0.69                         | -0.1               | 0.94                         |
| SLC2A1   | 1.3               | <0.001                       | 1.2                | 0.002                        | 1.2                | 0.044                        |
| SLC2A12  | -0.4              | 0.233                        | -0.7               | 0.138                        | 0.6                | 0.393                        |
| SLC30A10 | 1.3               | 0.04                         | 0.4                | 0.731                        | 1.7                | 0.206                        |
| SLC3A2   | 1                 | 0.001                        | 0.6                | 0.138                        | 0.5                | 0.458                        |
| SLC4A1   | 1.8               | <0.001                       | 0.8                | 0.126                        | 0.9                | 0.219                        |
| SLC7A6   | -0.7              | 0.112                        | -0.1               | 0.885                        | -0.2               | 0.862                        |
| SLC9A3R1 | -0.1              | 0.895                        | -1                 | 0.074                        | 0.2                | 0.896                        |
| SLC9A5   | 0.1               | 0.909                        | -0.7               | 0.297                        | 0.8                | 0.476                        |
| SLC9A8   | -0.9              | 0.046                        | 0.6                | 0.294                        | 0.6                | 0.634                        |
| SLMAP    | -1.7              | <0.001                       | -1.1               | 0.004                        | -1                 | 0.081                        |
| SLPI     | -1.8              | <0.001                       | -0.3               | 0.606                        | -0.8               | 0.364                        |
| SLX4     | -1.8              | 0.002                        | -1.7               | 0.016                        | -0.8               | 0.511                        |
| SMARCA5  | -0.3              | 0.445                        | -0.4               | 0.34                         | 0.3                | 0.729                        |
| SMOC2    | -0.9              | 0.004                        | -0.8               | 0.074                        | -0.8               | 0.243                        |
| SMTN     | -1.9              | <0.001                       | -1.4               | 0.001                        | -1.1               | 0.068                        |
| SNCA     | 0.5               | 0.114                        | -0.7               | 0.09                         | 0.2                | 0.899                        |
| SNCG     | -0.1              | 0.873                        | 0.4                | 0.512                        | 1                  | 0.259                        |
| SND1     | 0.5               | 0.084                        | 0.6                | 0.108                        | 0.2                | 0.791                        |
| SNRNP200 | 0.3               | 0.704                        | -0.2               | 0.812                        | 0.9                | 0.458                        |
| SNRPD1   | 0.1               | 0.912                        | -0.4               | 0.484                        | 0.3                | 0.756                        |
| SNRPD2   | -0.6              | 0.055                        | -0.9               | 0.018                        | -0.8               | 0.147                        |
| SNRPD3   | 0.2               | 0.787                        | -0.6               | 0.153                        | 0.1                | 0.993                        |
| SNTB2    | -0.7              | 0.007                        | -0.6               | 0.073                        | -0.3               | 0.697                        |
| SNX1     | -0.2              | 0.487                        | -0.5               | 0.14                         | -0.6               | 0.359                        |
| SNX12    | -1.4              | <0.001                       | -1.1               | 0.007                        | -0.9               | 0.167                        |
| SNX18    | -0.6              | 0.099                        | -0.1               | 0.829                        | -0.2               | 0.879                        |
| SNX2     | -0.4              | 0.177                        | -0.9               | 0.016                        | -0.7               | 0.275                        |
| SNX29    | 0.2               | 0.812                        | -0.1               | 0.867                        | 0.6                | 0.493                        |
| Gene      | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|-----------|-------------------|------------------|--------------------|------------------|--------------------|------------------|
| SNX3      | −0.6              | < .001           | −0.5              | .009             | −0.5              | .085             |
| SNX6      | −0.1              | .846             | −0.5              | .12              | 0.2               | .777             |
| SNX9      | 0.2               | .733             | 0.2               | .768             | 1                 | .218             |
| SOD1      | −0.9              | < .001           | −0.9              | < .001           | −0.7              | .032             |
| SOD2      | 0.3               | .218             | −0.3              | .263             | 0.3               | .582             |
| SOD3      | −2.4              | < .001           | −1.7              | .924             | 0.5               | .703             |
| SOGA1     | 0.5               | .431             | −0.1              | .924             | 0.5               | .703             |
| SON       | −1.8              | < .001           | −1.7              | < .001           | −1.6              | .009             |
| SORBS1    | −1.2              | .001             | −0.6              | 1.82             | −0.4              | .675             |
| SORBS2    | −1.1              | .002             | −0.7              | 1.65             | −0.1              | .929             |
| SORBS3    | −0.6              | .057             | −0.2              | .644             | 0.1               | .986             |
| SORD      | −1.8              | < .001           | −1.6              | .003             | −1                | .248             |
| SOST      | −2.1              | < .001           | −1                | .085             | −1.3              | .145             |
| SOX6      | −0.1              | .864             | −0.8              | .011             | 0.1               | .889             |
| SPARC     | −0.3              | 3.41             | −0.8              | .039             | −0.7              | .283             |
| SPARCL1   | −2                | < .001           | −2.4              | < .001           | −1.5              | .001             |
| SPCS2     | 0.5               | .326             | −0.5              | 0.418            | −1.5              | .115             |
| SPCS3     | 1.3               | .001             | 1                 | .033             | 1                 | 1.77             |
| SPON1     | −1.4              | < .001           | −1.5              | .001             | −1.7              | .004             |
| SPR       | −1.1              | .002             | −1.1              | .014             | −0.4              | .467             |
| SPTA1     | 1.4               | < .001           | 0.9               | .044             | 0.8               | .257             |
| SPTAN1    | 0.2               | .705             | −0.3              | 0.432            | 0.3               | .704             |
| SPTB      | 1.4               | < .001           | 0.7               | 0.138            | 0.7               | 0.378            |
| SPTBN1    | 0.2               | 5.93             | −0.1              | 0.848            | 0.3               | 0.667            |
| SQOR      | 0.3               | .484             | −0.5              | 0.252            | 0.1               | .916             |
| SQRD      | 0.7               | .177             | 0.7               | 0.266            | 0.5               | 0.692            |
| SREBF2    | −1.4              | .026             | −1                | 0.2              | −1                | 0.473            |
| SRFBPI    | 0.3               | 5.49             | −0.3              | 0.702            | 1                 | 0.24             |
| SRGAP3    | −1.6              | .001             | −1.7              | 0.007            | −1.8              | .048             |
| SRI       | −0.5              | .005             | −0.5              | 0.012            | −0.4              | 0.315            |
| SRM       | 0.1               | 9.49             | −0.6              | 0.104            | −0.2              | 0.797            |
| SRP9      | −0.6              | .036             | −0.8              | 0.024            | −0.4              | 0.634            |
| SRPX      | −1                | .04              | 0.2               | 0.832            | −0.4              | 0.781            |
| SRTT      | −1.2              | 0.01             | −0.3              | 0.512            | −0.9              | 0.233            |
| SRSF1     | −0.3              | 5.38             | −0.4              | 0.424            | 0.2               | 0.894            |
| SRSF3     | −0.2              | 4.99             | 0.1               | 0.915            | 0.1               | 0.949            |
| SRSF7     | −0.4              | 3.05             | 0.2               | 0.8              | 0.2               | 0.86             |
| SSB       | −0.2              | 4.82             | −0.5              | 0.087            | 0.3               | 0.721            |
| SSBPI     | −1.4              | .001             | −0.7              | 0.212            | −1.7              | 0.031            |
| SSR1      | 0.5               | .074             | 0.1               | 0.96             | −0.1              | 0.993            |
| SSR4      | 0.9               | .071             | 0.6               | 0.375            | 0.8               | 0.452            |
| SSTR2     | −1.3              | .09              | −1.6              | 0.078            | −0.1              | 0.974            |
| ST3GAL6   | −1.7              | < .001           | −0.6              | 0.356            | −0.3              | 0.781            |
| STAB1     | 0.5               | 2.86             | 0.3               | 0.583            | 0.9               | 0.289            |
| STAMBP    | 1.5               | 1.51             | 1.2               | 0.361            | 0.8               | 0.77             |
| STAT1     | 0.6               | 2.78             | 0.1               | 0.928            | 0.7               | 0.58             |

(Continued on next page)
| Gene | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|------|-------------------|-----------------|-------------------|-----------------|-------------------|-----------------|
| STAT6 | 0.3 | .002 | 0.5 | .119 | 0.5 | .379 |
| STIPI | −0.2 | .42 | −0.6 | .041 | 0.1 | .997 |
| STK25 | −1.7 | .005 | −1.6 | .043 | −1.1 | .419 |
| STK31 | 1.1 | .022 | 0.1 | .885 | 0.4 | .773 |
| STNI | −0.2 | .783 | −1.5 | .002 | 0.4 | .692 |
| STOM | 0.1 | .846 | 0.2 | .787 | −0.1 | .94 |
| STT3A | 1.2 | .001 | 1.3 | .006 | 1.3 | .058 |
| STX7 | −0.4 | .115 | −0.6 | .09 | −0.3 | .725 |
| STXBP3 | 0.4 | .132 | 0.1 | .822 | 0.4 | .416 |
| SUCLA2 | −0.2 | .477 | −0.7 | .014 | −0.3 | .719 |
| SUCLG1 | −0.9 | .128 | −1.3 | .073 | −0.7 | .606 |
| SUCLG2 | −0.2 | .687 | −0.5 | .196 | −0.1 | .916 |
| SULF1 | 0.4 | .179 | 0.7 | .073 | 0.4 | .589 |
| SUMF2 | −0.9 | .02 | −0.7 | .156 | −0.3 | .773 |
| SUN2 | −0.1 | .892 | 0.6 | .143 | 0.7 | .329 |
| SUSD2 | −0.2 | .786 | 0.3 | .621 | 0.4 | .702 |
| SUSD5 | −1.8 | <.001 | −1.1 | .02 | −1.1 | .118 |
| SVIL | −0.5 | .118 | −0.3 | .436 | −0.5 | .444 |
| SYG | 0.8 | .03 | 0.6 | .271 | 0.5 | .582 |
| SYHC | −0.2 | .746 | −0.4 | .393 | −0.1 | .936 |
| SYNCRIP | −0.7 | .04 | −1 | .02 | −0.9 | .182 |
| SYNE1 | −0.4 | .229 | −0.3 | .6 | 0.2 | .883 |
| SYNMM | −1.4 | <.001 | −1.3 | <.001 | −1.3 | .008 |
| SYNPO | −0.5 | .101 | −0.2 | .626 | −0.4 | .649 |
| SYNPO2 | −1.3 | <.001 | −0.9 | .013 | −0.8 | .147 |
| SYPL1 | 0.4 | .45 | 0.5 | .456 | 0.9 | .318 |
| TAGLN | −2.1 | <.001 | −1.6 | .002 | −0.9 | .29 |
| TAGLN2 | −0.6 | .029 | −0.7 | .056 | −0.3 | .729 |
| TALDO1 | 0.3 | .103 | −0.1 | .946 | 0.1 | .771 |
| TARDBP | −0.4 | .221 | −0.8 | .014 | −0.3 | .703 |
| TARS1 | 0.6 | .097 | 0.3 | .556 | 0.2 | .825 |
| TARS2 | −1.2 | .029 | −1.4 | .057 | −0.6 | .719 |
| TASOR2 | −0.6 | .099 | −0.1 | .969 | −0.2 | .889 |
| TAX1BP3 | −1.3 | .008 | −1.4 | .028 | −0.6 | .631 |
| TBCID5 | −1.3 | .003 | −0.3 | .662 | −0.2 | .914 |
| TBCA | −1.3 | <.001 | −1.4 | <.001 | −0.8 | .116 |
| TBCB | −1 | <.001 | −1.2 | .001 | −0.5 | .369 |
| TCP1 | 0.2 | .594 | −0.2 | .731 | 0.3 | .677 |
| TENT2 | −3.2 | <.001 | −3.5 | <.001 | −3.5 | <.001 |
| TES | −1.4 | <.001 | −0.9 | .01 | −0.8 | .104 |
| TF | −0.6 | .048 | −1.3 | .001 | −0.4 | .589 |
| TFEB | −1.2 | .152 | −1.3 | .189 | −0.3 | .889 |
| TFG | −0.3 | .452 | −0.6 | .194 | −0.3 | .729 |
| TGFBI1 | 0.3 | .575 | 0.9 | .056 | 0.2 | .907 |
| TGFBI11 | −1.7 | <.001 | −1.1 | .007 | −0.8 | .2 |
| TGFBI | 0.5 | .133 | 0.4 | .335 | 0.7 | .252 |
| Gene    | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|---------|-------------------|------------------|--------------------|------------------|--------------------|------------------|
| TGM2    | 0.1               | .825             | 0.3                | .606             | 0.7                | .264             |
| TH      | −1.5              | .001             | −0.6               | .312             | −0.4               | .767             |
| THBS1   | 2.7               | <.001            | 1.6                | .002             | 1.5                | .047             |
| THBS2   | 1.4               | .002             | 1.1                | .052             | 1                  | .262             |
| THOP1   | −0.1              | .879             | −0.7               | .166             | 0.4                | .663             |
| THSD1   | −1.9              | <.001            | −1.1               | <.001            | −1.3               | .007             |
| THSD4   | −1.3              | <.001            | −0.6               | .029             | −1.1               | .008             |
| THTPA   | 0.4               | .666             | −0.3               | .803             | −1.3               | .364             |
| THY1    | 1.3               | .001             | 0.4                | .513             | 0.8                | .333             |
| TIMP1   | 0.8               | .065             | −0.1               | .995             | 0.1                | .994             |
| TIMP2   | −0.5              | .241             | −0.7               | .171             | −0.2               | .914             |
| TIMP3   | 0.7               | .139             | −0.2               | .87              | −0.3               | .789             |
| TINAGL1 | −2.4              | <.001            | −1.5               | .002             | −1.3               | .048             |
| TJP2    | −0.2              | .718             | −0.1               | .887             | −0.4               | .679             |
| TKT     | −0.1              | .673             | −0.3               | .078             | 0.2                | .667             |
| TLE7    | −0.6              | .006             | −0.8               | .003             | −0.4               | .526             |
| TLN1    | −0.6              | .005             | −0.3               | .311             | −0.5               | .317             |
| TLN2    | −0.8              | .01              | −0.3               | .499             | −0.5               | .513             |
| TMC3    | 0.8               | .312             | 0.2                | .848             | 0.6                | .752             |
| TMCC2   | 0.3               | .659             | −1.1               | .052             | −0.4               | .721             |
| TEMD7   | 0.4               | .289             | 0.3                | .443             | 0.7                | .275             |
| TMEM109 | −0.3              | .413             | −0.4               | .246             | 0.2                | .767             |
| TMEM198 | 0.6               | .141             | −0.2               | .799             | 0.9                | .283             |
| TMEM214 | −0.6              | .157             | −0.1               | .9               | 0.2                | .893             |
| TMEM33  | 1                 | .154             | 1.9                | .019             | 1.5                | .267             |
| TMEM43  | −0.2              | .58              | −0.3               | .605             | 0.1                | .994             |
| TMEM67  | −0.3              | .621             | 0.1                | .966             | 1                  | .366             |
| TMOD1   | −1                | .001             | −1                 | .008             | −0.3               | .677             |
| TMSB4X  | −1.2              | .001             | −1.5               | .001             | −1.2               | .075             |
| TNC     | 1                 | .022             | 0.5                | .395             | 1.2                | .202             |
| TNFRSF11B| −0.5             | .155             | −0.9               | .033             | −0.5               | .474             |
| TNFSF13 | −1                | .008             | −0.6               | .208             | −0.6               | .521             |
| TNN     | 0.1               | .817             | −1                 | .029             | 0.3                | .792             |
| TNP1    | 0.2               | .556             | 0.1                | .847             | 0.3                | .677             |
| TNPO2   | 0.5               | .464             | −0.6               | .408             | 0.1                | .989             |
| TNRC6C  | 0.5               | .286             | −1.1               | .027             | 0.8                | .362             |
| TNS1    | −1.4              | <.001            | −0.6               | .179             | −0.6               | .379             |
| TNS2    | −0.1              | .812             | 0.2                | .65              | −0.1               | .986             |
| TNXB    | −1.1              | <.001            | −1.2               | <.001            | −1.7               | .013             |
| TOLLIP  | −1.8              | <.001            | −1.3               | .006             | −1.7               | .013             |
| TOM1    | 0.1               | .837             | −0.2               | .769             | 0.3                | .675             |
| TOM1L2  | −0.7              | .028             | −0.7               | .089             | −1.1               | .046             |
| TORNIP1 | 0.5               | .076             | 1                  | .003             | 0.7                | .163             |
| TPDS2L2 | −0.5              | 1.29             | −1                 | .013             | −0.5               | .472             |
| TPI1    | −0.3              | 3.4              | −0.4               | 2.49             | 0.2                | .756             |
| TPM1    | −2.4              | <.001            | −2.2               | <.001            | −1.5               | .028             |

(Continued on next page)
| Gene    | \(\log_{2}FC\) TAA/normal | \(p\) value | \(\log_{2}FC\) TBAD/normal | \(p\) value | \(\log_{2}FC\) TADA/normal | \(p\) value |
|---------|-----------------------------|-------------|----------------------------|-------------|----------------------------|-------------|
| TPM2    | −3.1                        | <.001       | −2.6                       | <.001       | −1.9                       | .028        |
| TPM3    | 0.9                         | <.001       | 0.3                        | .303        | 0.5                        | .242        |
| TPM4    | −0.3                        | 2.2         | −0.4                       | 1.0         | −0.2                       | .713        |
| TPP1     | 0.2                         | .684        | −0.6                       | .151        | −0.5                       | .488        |
| TPP2    | −0.1                        | .875        | −0.3                       | .68         | 0.6                        | .521        |
| TPT1    | −1.4                        | .001        | −1.6                       | .005        | −1.2                       | .198        |
| TRIM38  | −2.1                        | .001        | −1.3                       | .078        | −0.5                       | .762        |
| TRIOBP  | −0.3                        | .484        | 0.3                        | .426        | −0.2                       | .813        |
| TRIP6   | −1.0                        | .002        | −0.8                       | .07         | −1.1                       | .085        |
| TSG101  | −0.4                        | .266        | −0.8                       | .059        | −0.4                       | .668        |
| TSN     | 0.1                         | .89         | −0.2                       | .677        | 0.1                        | .967        |
| TTN     | 0.1                         | .999        | −0.5                       | .127        | 0.1                        | .976        |
| TTR     | −0.6                        | .013        | −1.3                       | <.001       | −0.6                       | .203        |
| TTYH2   | −0.7                        | .007        | −0.2                       | .652        | −0.1                       | .916        |
| TUBA4A  | −0.3                        | .139        | −0.4                       | .127        | −0.4                       | .321        |
| TUBB    | −0.3                        | .511        | −0.8                       | .049        | −0.3                       | .748        |
| TUBB1   | −0.2                        | .83         | 0.5                        | .65         | −0.2                       | .947        |
| TUBB2A  | −0.5                        | .144        | −0.9                       | .017        | −0.5                       | .452        |
| TUBB4A  | −0.1                        | .989        | −0.2                       | .888        | −0.5                       | .756        |
| TUBB4B  | −0.5                        | .177        | −1.1                       | .007        | −0.3                       | .773        |
| TUBB6   | −0.7                        | .021        | −1.0                       | .009        | −0.6                       | .344        |
| TUFM    | 0.3                         | .278        | 0.1                        | .853        | 0.2                        | .714        |
| TUT7    | −0.9                        | .029        | −0.7                       | .234        | −0.3                       | .775        |
| TWF1    | −0.4                        | .176        | −0.7                       | .056        | −0.1                       | .951        |
| TWF2    | −0.4                        | .431        | −0.4                       | .524        | −0.6                       | .532        |
| TXN     | −0.5                        | .065        | −0.7                       | .055        | −0.3                       | .725        |
| TXNDC12 | −0.7                        | .155        | −0.8                       | .16         | −1.7                       | .048        |
| TXNDC17 | −0.8                        | .001        | −1.2                       | <.001       | −0.5                       | .29         |
| TXNDC5  | −0.2                        | .66         | −0.8                       | .016        | −0.4                       | .538        |
| TXNL1   | −0.5                        | .008        | −0.8                       | .001        | −0.3                       | .45         |
| TXNRD1  | −0.1                        | .873        | −0.3                       | .396        | 0.4                        | .637        |
| TYP1    | 1.0                         | .002        | 0.3                        | .505        | 0.5                        | .511        |
| TYRPI1  | −0.3                        | .509        | −0.5                       | .363        | 0.2                        | .88         |
| U2AF2   | −0.3                        | .411        | −0.6                       | .155        | −0.8                       | .275        |
| UAPI    | −0.7                        | .059        | −0.3                       | .695        | −0.2                       | .907        |
| UBA1    | −0.2                        | .307        | −0.3                       | .255        | −0.1                       | .998        |
| UAP2L   | −0.4                        | .192        | −0.5                       | .101        | −0.6                       | .305        |
| UBE21   | 0.2                         | .717        | 0.6                        | .208        | 0.6                        | .39         |
| UBE2K   | −0.6                        | .046        | −1.3                       | .001        | −0.9                       | .114        |
| UBE2L3  | −0.4                        | .192        | −0.4                       | .251        | −0.4                       | .546        |
| UBE2M   | −0.8                        | .063        | −0.9                       | .079        | −0.7                       | .482        |
| UBE2N   | −1.2                        | .001        | −1.0                       | .03         | −0.8                       | .29         |
| UBE2O   | −1.3                        | .001        | −0.4                       | .456        | 0.2                        | .894        |
| UBE2V1  | 0.7                         | .023        | 0.5                        | .202        | 0.6                        | .329        |
| UBL5    | −0.4                        | 2.0         | −0.5                       | .184        | 0.3                        | .725        |
| UBR4    | −1.2                        | .051        | −0.1                       | .973        | −0.4                       | .826        |
### Supplementary Table II. Continued.

| Gene   | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|--------|-------------------|------------------|-------------------|------------------|-------------------|------------------|
| UCHL1  | −1                | .001             | −1.3              | .002             | −0.7              | .329             |
| UFC1   | −0.6              | .007             | −0.8              | .004             | −0.3              | .614             |
| UFL1   | 0.2               | .757             | −0.3              | .63              | 0.2               | .88              |
| UFM1   | −0.3              | .338             | −1.1              | .002             | −0.3              | .751             |
| UGDH   | −0.3              | .451             | −0.3              | .625             | −0.1              | .964             |
| UGT1   | 0.5               | .171             | 0.5               | .241             | 0.1               | .923             |
| UGP2   | −0.7              | <.001            | −0.6              | .006             | −0.4              | .276             |
| UNC45A | 0.3               | .569             | −0.1              | .884             | 0.4               | .677             |
| UQCR10 | 1.6               | <.001            | 1.3               | .002             | 1.1               | .058             |
| UQCR1  | −0.6              | .113             | −0.8              | .072             | −0.9              | .229             |
| UQCR2  | −0.9              | .006             | −0.8              | .039             | −1.1              | .068             |
| UQCRH  | −0.4              | .34              | −0.6              | .209             | −0.3              | .767             |
| USO1   | −0.2              | .697             | −0.7              | .092             | 0.4               | .667             |
| USP14  | 0.2               | .624             | −0.3              | .524             | 0.3               | .765             |
| USP15  | −0.8              | .064             | −0.2              | .728             | 0.3               | .835             |
| USP17L3| −0.2              | .585             | −0.6              | .045             | −0.2              | .777             |
| USP17L8| −0.1              | .795             | −0.2              | .716             | 0.1               | .894             |
| USP17L9| −1.2              | .003             | −1.1              | .033             | −0.3              | .781             |
| USP17L2| −0.2              | .569             | −0.7              | .049             | −0.4              | .52              |
| USP17L2| −0.4              | .175             | −0.7              | .069             | −0.5              | .475             |
| USP5   | −0.1              | .898             | −0.2              | .7               | −0.1              | .959             |
| UTP14A | −1.9              | <.001            | −2.1              | .001             | −1.3              | .188             |
| UTERO  | 0.5               | .079             | 0.5               | .154             | 0.8               | .149             |
| VAPA   | −0.7              | .138             | −0.8              | .165             | −0.8              | .44              |
| VASP   | −0.7              | .001             | −0.4              | .142             | −0.7              | .075             |
| VAT1   | −0.3              | .32              | −0.6              | .054             | −0.3              | .711             |
| VCAN   | −1.9              | <.001            | −1.1              | .034             | −1.3              | .085             |
| VCL    | −1                | <.001            | −0.6              | .053             | −0.5              | .364             |
| VCP    | −0.1              | .881             | −0.3              | .296             | −0.2              | .719             |
| VDAC1  | −0.1              | .875             | −0.4              | .104             | −0.4              | .36              |
| VDAC2  | −0.3              | .283             | −0.9              | .012             | −0.6              | .345             |
| VDAC3  | 0.5               | .372             | 0.6               | .335             | 0.3               | .799             |
| VILL   | 0.1               | .819             | −1.1              | .011             | 0.4               | .676             |
| VIM    | −1.6              | <.001            | −1.5              | <.001            | −1.2              | .012             |
| VIRMA  | −0.4              | .309             | 0.3               | .564             | 0.6               | .407             |
| VPS11  | −0.1              | .774             | −0.1              | .973             | 0.1               | .978             |
| VPS29  | −0.7              | .028             | −0.7              | .071             | −0.7              | .333             |
| VPS35  | 0.2               | .684             | −0.1              | .851             | 0.5               | .468             |
| VPS4B  | −0.6              | .22              | −0.6              | .279             | −0.6              | .536             |
| VTN    | −0.6              | .063             | −0.9              | .024             | −0.6              | .321             |
| VWA1   | −1.5              | <.001            | −1.7              | <.001            | −1.3              | .034             |
| VWA3A  | 0.2               | .734             | 0.5               | .233             | 0.2               | .829             |
| VWA3B  | −0.1              | .953             | −0.9              | .131             | 0.2               | .899             |
| WASHC1 | −0.5              | .624             | −0.3              | .847             | −0.7              | .773             |
| WASHC4 | −2.5              | <.001            | −0.6              | .465             | −0.4              | .829             |
| WBP11  | −0.8              | .113             | 0.6               | .424             | 0.4               | .792             |

(Continued on next page)
| Gene     | Log₂FC TAA/normal | Adjusted P value | Log₂FC TBAD/normal | Adjusted P value | Log₂FC TADA/normal | Adjusted P value |
|----------|-------------------|------------------|--------------------|------------------|--------------------|-----------------|
| WDR1     | –0.5              | .005             | –0.3               | .166             | –0.1               | .865            |
| WDR76    | –0.3              | .29              | –0.9               | .006             | –0.2               | .86             |
| WDR82    | –0.4              | .504             | –0.1               | .928             | 0.1                | .968            |
| WDR83OS  | –2.1              | <.001            | –1                 | .074             | –1.1               | .222            |
| WISP2    | –1                | .003             | –0.5               | .254             | 0.2                | .879            |
| WRAP73   | –0.8              | .132             | –0.8               | .191             | 0.5                | .714            |
| WTIP     | –0.8              | .14              | –0.7               | .295             | –0.1               | .941            |
| XDH      | –3.2              | <.001            | –2.6               | <.001            | –2.7               | <.001           |
| XPO1     | 0.5               | .127             | 0.6                | .12              | 0.7                | .329            |
| XRCC5    | 0.8               | .011             | 0.7                | .103             | 0.9                | .137            |
| XRCC6    | 0.2               | .612             | 0.2                | .677             | 0.6                | .32             |
| XRNI     | –1.4              | .004             | –1.3               | .044             | –0.4               | .773            |
| YAPI     | –0.8              | .002             | –1                 | .004             | –0.6               | .283            |
| YKT6     | –0.4              | .301             | –0.4               | .396             | 0.2                | .889            |
| YPEL1    | 0.2               | .806             | 0.2                | .859             | 1.2                | .271            |
| YWHAB    | –0.3              | .164             | –0.3               | .167             | –0.1               | .913            |
| YWHAE    | –0.3              | .279             | –0.6               | .058             | –0.2               | .703            |
| YWHAG    | –0.6              | .002             | –0.7               | .003             | –0.3               | .59             |
| YWHAH    | –0.4              | .097             | –0.6               | .02              | –0.3               | .582            |
| YWHAQ    | –0.3              | .301             | –0.3               | .424             | 0.1                | .903            |
| YWHAZ    | –0.3              | .225             | –0.4               | .135             | –0.2               | .681            |
| ZBTB21   | –0.9              | .015             | –0.1               | .942             | –0.1               | .956            |
| ZC2HC1C  | –0.7              | .103             | 0.5                | .441             | 0.1                | .955            |
| ZMYND8   | –1.5              | <.001            | –0.9               | .067             | –1                 | .152            |
| ZNF350   | 1.1               | .062             | –0.6               | .456             | –0.5               | .746            |
| ZNF385A  | 0.5               | .44              | 1.7                | .014             | 1.7                | .115            |
| ZNF479   | 0.1               | .871             | 0.2                | .63              | 0.4                | .438            |
| ZNF507   | –0.6              | .091             | –1.1               | .014             | –0.3               | .773            |
| ZNF597   | –0.5              | .232             | –0.5               | .398             | 0.3                | .773            |
| ZSCAN9   | –0.8              | .432             | –0.4               | .753             | –0.2               | .944            |
| ZSWIM9   | 0.1               | .864             | –0.7               | .048             | 0.4                | .656            |
| ZYX      | –1                | .001             | –0.8               | .013             | –0.8               | .132            |

Log₂FC, Log₂ fold change; TAA, thoracic aorta aneurysm; TADA, thoracic aorta dissection and aneurysm; TBAD, type B dissecting aorta.

*False discovery rate.
### Supplementary Table III. Complete differential expression analysis between aortic pathologies

| Gene   | Log2FC TAA/TADA | Adjusted P value | Log2FC TBAD/TADA | Adjusted P value | Log2FC TAA/TBAD | Adjusted P value |
|--------|-----------------|------------------|------------------|------------------|-----------------|------------------|
| A1BG   | -0.1            | .984             | -0.8             | .324             | 0.7             | .068             |
| A2M    | -0.3            | .966             | -1.1             | .363             | 0.8             | .191             |
| AAMDC  | -0.8            | .857             | -0.6             | .708             | -0.2            | .825             |
| AARS1  | 0.1             | .982             | -0.2             | .899             | 0.3             | .684             |
| ABCA13 | -1              | .862             | -0.5             | .822             | -0.5            | .591             |
| ABCCB  | -0.8            | .9               | -0.7             | .821             | -0.2            | .943             |
| ABCD1  | -0.6            | .929             | -1               | .685             | 0.5             | .729             |
| ABCF1  | -0.3            | .982             | -1.7             | .235             | 1.5             | .066             |
| ABHD14B| -0.4            | .941             | -0.9             | .515             | 0.5             | .441             |
| ABI3BP | -0.5            | .9               | -0.2             | .936             | -0.4            | .659             |
| ACA1   | 0.6             | .9               | 0.1              | .994             | 0.6             | .506             |
| ACA2   | 0.5             | .941             | -0.1             | .973             | 0.5             | .561             |
| ACADM  | 0.5             | .9               | 0.2              | .933             | 0.4             | .676             |
| ACADVL | 0.4             | .903             | -0.5             | .782             | 0.8             | .108             |
| ACAN   | -0.6            | .903             | 0.5              | .822             | -1              | .195             |
| ACAT1  | -0.2            | .972             | -0.6             | .713             | 0.4             | .59              |
| ACAT2  | -0.1            | .982             | -0.6             | .713             | 0.6             | .407             |
| ACLY   | 0.4             | .941             | 0.2              | .933             | 0.2             | .865             |
| ACO1   | -0.3            | .941             | -0.4             | .815             | 0.1             | .924             |
| ACO2   | 0.3             | .966             | -0.3             | .853             | 0.5             | .409             |
| ACOT9  | -0.4            | .941             | -0.5             | .797             | 0.2             | .899             |
| ACPI   | -0.3            | .946             | 1                | .323             | 0.7             | .179             |
| ACSF2  | -1.3            | .857             | -0.9             | .759             | -0.5            | .732             |
| ACSL1  | 0.6             | .927             | 0.5              | .844             | 0.1             | .961             |
| ACTA1  | -0.6            | .9               | -0.5             | .762             | -0.1            | .975             |
| ACTB2  | -0.8            | .857             | -0.2             | .942             | -0.7            | .176             |
| ACTN1  | -0.6            | .862             | -0.1             | .942             | -0.5            | .307             |
| ACTN2  | -0.5            | .9               | -0.5             | .677             | 0.1             | .962             |
| ACTN3  | 0.4             | .969             | -0.3             | .933             | 0.7             | .593             |
| ACTN4  | -0.7            | .857             | -0.5             | .792             | -0.3            | .693             |
| ACTR10 | -0.4            | .9               | -0.4             | .792             | 0.1             | 1.00             |
| ACTR1A | -0.1            | .982             | -0.6             | .652             | 0.6             | .337             |
| ACTR2  | -0.1            | .982             | 0.2              | .891             | -0.2            | .634             |
| ACTR3  | -0.1            | .982             | -0.1             | .997             | -0.1            | .922             |
| ACYP2  | -0.2            | .982             | -0.4             | .891             | 0.2             | .894             |
| ADAM17 | -0.8            | .862             | -0.6             | .762             | -0.2            | .844             |
| ADAMS2 | 0.5             | .957             | -1.4             | .553             | 1.9             | .066             |
| ADAMTS1| -0.6            | .9               | 0.4              | .847             | -1              | .133             |
| ADAMTS2| -0.9            | .903             | 0.3              | .942             | -1.2            | .583             |
| ADAMTS4| -0.6            | .9               | -0.1             | .985             | -0.5            | .526             |
| ADARB1 | -0.8            | .862             | -1.1             | .328             | 0.3             | .733             |
| ADD1   | 0.5             | .927             | -0.3             | .908             | 0.8             | .35              |
| ADD3   | 0.1             | .982             | -0.1             | .973             | 0.2             | .846             |
| ADGFR1 | 1.1             | .857             | -0.6             | .792             | 1.6             | .023             |
| ADH1B  | -0.7            | .903             | -0.6             | .822             | -0.2            | .945             |
| ADH5   | -0.4            | .9               | -0.6             | .693             | 0.2             | .84              |

(Continued on next page)
Supplementary Table III. Continued.

| Gene     | Log$_2$FC TAA/ TADA | Adjusted P value | Log$_2$FC TBAD/ TADA | Adjusted P value | Log$_2$FC TAA/ TBAD | Adjusted P value |
|----------|----------------------|------------------|----------------------|------------------|---------------------|------------------|
| ADIPOQ   | −1.2                 | .857             | −1                   | .574             | −0.3                | .819             |
| ADIRF    | −0.7                 | .9               | −0.5                 | .847             | −0.3                | .855             |
| ADSL     | 0.3                  | .927             | 0.1                  | .98              | 0.3                 | .688             |
| ADSS1    | −1.1                 | .857             | 0.1                  | .989             | −1.1                | .124             |
| AEBP1    | −0.1                 | .982             | −0.2                 | .951             | 0.1                 | .966             |
| AFM      | −0.2                 | .972             | −1.2                 | .225             | 1                   | .065             |
| AGL      | −0.4                 | .934             | −0.5                 | .815             | 0.1                 | .962             |
| AGRN     | −0.3                 | .969             | −0.4                 | .82              | 0.2                 | .862             |
| AGT      | −0.2                 | .972             | −1                   | .324             | 0.8                 | .133             |
| AHCY     | 0.1                  | .982             | −0.4                 | .792             | 0.5                 | .413             |
| AHCYLI   | 0.1                  | .993             | −0.4                 | .796             | 0.4                 | .512             |
| AHNAK    | 0.1                  | .982             | 0.2                  | .934             | −0.1                | .943             |
| AHSIG    | 0.1                  | .982             | −1.1                 | .225             | 1.1                 | .023             |
| AIFM1    | 0.4                  | .9               | −0.1                 | .985             | 0.4                 | .429             |
| AIMP2    | −0.1                 | .982             | −0.2                 | .933             | 0.1                 | .943             |
| AIP      | −0.4                 | .927             | −0.2                 | .917             | −0.2                | .84              |
| AK1      | −0.1                 | .982             | −0.2                 | .917             | 0.1                 | .943             |
| AK2      | 0.3                  | .969             | −0.7                 | .762             | 0.9                 | .203             |
| AK3      | 0.5                  | .9               | 0.2                  | .942             | 0.4                 | .613             |
| AK4      | −0.5                 | .903             | 0.1                  | .993             | −0.5                | .529             |
| AK7      | 0.9                  | .9               | −0.3                 | .917             | 1.2                 | .179             |
| AKAPI2   | −0.1                 | .982             | −0.5                 | .792             | 0.5                 | .557             |
| AKR1A1   | −0.3                 | .941             | −0.9                 | .391             | 0.6                 | .29              |
| AKR1B1   | 0.1                  | .982             | −0.6                 | .468             | 0.7                 | .094             |
| AKR7A2   | 0.5                  | .903             | −0.3                 | .861             | 0.7                 | .284             |
| AKR7A3   | 0.3                  | .982             | −0.3                 | .953             | 0.5                 | .785             |
| ALAD     | 0.1                  | .982             | −0.6                 | .762             | 0.7                 | .334             |
| ALB      | −0.2                 | .982             | −1.2                 | .286             | 1.1                 | .071             |
| ALCAM    | −0.6                 | .9               | −0.1                 | .993             | −0.5                | .459             |
| ALDH1A1  | −0.3                 | .903             | −0.5                 | .642             | 0.2                 | .75              |
| ALDH1B1  | −0.6                 | .9               | −0.3                 | .899             | −0.3                | .688             |
| ALDH1L1  | −0.3                 | .966             | −0.4                 | .822             | 0.2                 | .902             |
| ALDH2    | −0.3                 | .947             | −0.6                 | .762             | 0.3                 | .757             |
| ALDH6A1  | −0.5                 | .903             | −0.6                 | .789             | 0.2                 | .927             |
| ALDH7A1  | −0.4                 | .9               | −0.6                 | .674             | 0.2                 | .811             |
| ALDH9A1  | −0.3                 | .941             | −0.7                 | .615             | 0.4                 | .561             |
| ALDOA    | −0.2                 | .941             | −0.2                 | .826             | 0.1                 | .988             |
| ALDOC    | −0.5                 | .862             | −0.3                 | .815             | −0.2                | .688             |
| ALMS1    | 0.2                  | .982             | −0.4                 | .819             | 0.6                 | .403             |
| ALOX15B  | −0.1                 | .982             | −0.3                 | .899             | 0.2                 | .862             |
| AMBP     | −0.2                 | .982             | −0.6                 | .742             | 0.5                 | .544             |
| AMIGO2   | 0.1                  | .993             | −0.5                 | .826             | 0.5                 | .652             |
| AMN      | −0.3                 | .982             | −0.3                 | .933             | 0.1                 | .982             |
| AMPD2    | 0.2                  | .982             | 0.3                  | .897             | −0.2                | .902             |
| ANG      | −0.4                 | .941             | −0.4                 | .847             | −0.1                | .998             |
| ANGPTL2  | −0.3                 | .969             | −0.2                 | .946             | −0.2                | .916             |
## Supplementary Table III. Continued.

| Gene          | Log$_2$FC TAA/ TADA | Adjusted $P$ value | Log$_2$FC TBAD/ TADA | Adjusted $P$ value | Log$_2$FC TAA/ TBAD | Adjusted $P$ value |
|---------------|----------------------|-------------------|----------------------|-------------------|---------------------|-------------------|
| ANK1          | 0.9                  | .857              | 0.1                  | .988              | 0.9                 | .178              |
| ANKRD31       | −1.3                 | .862              | −1                   | .782              | −0.4                | .84               |
| ANKS3         | −1.2                 | 9                 | −0.6                 | .891              | −0.7                | .714              |
| ANP32B        | −0.6                 | .927              | −0.8                 | .785              | 0.3                 | .889              |
| ANTXR1        | 0.1                  | .982              | 0.8                  | .657              | −0.7                | .363              |
| ANXA1         | −0.2                 | .947              | 0.1                  | .985              | −0.3                | .663              |
| ANXA11        | −0.2                 | .957              | 0.2                  | .861              | −0.4                | .399              |
| ANXA2         | −0.2                 | .982              | −0.2                 | .891              | 0.1                 | .945              |
| ANXA3         | −0.5                 | .912              | −0.2                 | .938              | −0.3                | .757              |
| ANXA4         | −0.3                 | .941              | −0.1                 | 1.00              | −0.3                | .691              |
| ANXA5         | −0.3                 | .957              | −0.3                 | .834              | 0.1                 | .962              |
| ANXA6         | −0.3                 | .941              | −0.1                 | .997              | −0.3                | .705              |
| ANXA7         | 0.1                  | .982              | 0.2                  | .897              | −0.1                | .873              |
| AOC3          | −1.2                 | .857              | −0.1                 | .993              | −1.1                | 1.122             |
| APIB1         | 0.6                  | .862              | 0.1                  | .942              | 0.5                 | .383              |
| AP2A1         | −0.2                 | .972              | −0.3                 | .895              | 0.1                 | .97               |
| AP2A2         | 0.2                  | .982              | −0.2                 | 0.856             | 0.4                 | .774              |
| AP2B1         | 0.2                  | .982              | −0.3                 | 0.865             | 0.4                 | 0.529             |
| AP2M1         | −0.2                 | .982              | −0.4                 | .843              | 0.2                 | .829              |
| AP3B1         | 0.2                  | .972              | −0.3                 | .847              | 0.5                 | .429              |
| AP3B2         | −0.9                 | 9                 | −0.5                 | .853              | −0.4                | .753              |
| AP3S1         | −0.3                 | .969              | −0.2                 | .935              | −0.2                | 0.952             |
| APCS          | −0.7                 | 9                 | −0.9                 | .614              | 0.3                 | .85               |
| APEH          | 0.5                  | .903              | −0.2                 | .953              | 0.6                 | .435              |
| APEX1         | −0.5                 | 9                 | −0.1                 | .975              | −0.5                | .552              |
| APMAP         | 0.2                  | .972              | 0.1                  | .956              | 0.1                 | .913              |
| APOA1         | −0.1                 | .982              | −1.1                 | 0.286             | 1                   | 0.061             |
| APOA2         | 0.1                  | .982              | −1                   | 0.288             | 1.1                 | .035              |
| APOA4         | 0.1                  | .982              | −0.4                 | .802              | 0.5                 | .394              |
| APOB          | 0.2                  | .982              | −1.6                 | .225              | 1.7                 | 0.022             |
| APOC1         | 0.2                  | .982              | −0.7                 | .769              | 0.8                 | .301              |
| APOC2         | −0.2                 | .982              | −1.7                 | .225              | 1.6                 | .043              |
| APOC3         | −0.2                 | .982              | −1.8                 | .225              | 1.6                 | .023              |
| APOD          | 0.3                  | .969              | −1.1                 | .327              | 1.3                 | .025              |
| APOE          | −0.1                 | .984              | −1                   | .432              | 1                   | 0.116             |
| APOF          | 0.2                  | .982              | −0.3                 | .847              | 0.5                 | 0.503             |
| APOH          | −0.2                 | .969              | −0.4                 | .792              | 0.2                 | .769              |
| APOL1         | −0.1                 | .992              | −1.5                 | .258              | 1.5                 | .037              |
| APOM          | 0.3                  | .947              | −0.7                 | .592              | 1                   | .071              |
| APP           | −0.1                 | .997              | 0.2                  | .936              | −0.2                | 0.87              |
| APPL1         | 0.2                  | .981              | 0.1                  | .942              | 0.1                 | 0.966             |
| APRT          | 0.1                  | .982              | −0.8                 | .433              | 0.9                 | 0.068             |
| AQP1          | −0.5                 | .9                 | −0.6                 | .718              | 0.2                 | 0.912             |
| ARCN1         | 0.4                  | .903              | 0.1                  | .989              | 0.4                 | 0.572             |
| ARF4          | 0.1                  | .982              | −0.4                 | .815              | 0.5                 | 0.521             |
| ARF5          | −0.2                 | .975              | 0.5                  | .792              | −0.7                | 0.306             |
| Gene      | Log₂FC TAA/TADA | Adjusted P value | Log₂FC TBAD/TADA | Adjusted P value | Log₂FC TAA/TBAD | Adjusted P value |
|-----------|-----------------|------------------|------------------|------------------|-----------------|------------------|
| ARFIP1    | –0.3            | 0.941            | –0.4            | 0.792            | 0.2             | 0.894            |
| ARG1      | –0.3            | 0.974            | 0.6             | 0.792            | –0.8            | 0.308            |
| ARHGAP1   | –0.4            | 0.9              | –0.5            | 0.648            | 0.1             | 0.899            |
| ARHGAP11A | –0.2            | 0.982            | –0.6            | 0.826            | 0.5             | 0.768            |
| ARHGAP31  | –1.3            | 0.862            | –1.4            | 0.583            | 0.2             | 0.933            |
| ARHGAP40  | –0.3            | 0.965            | –0.5            | 0.792            | 0.3             | 0.825            |
| ARHGAP9   | –1.3            | 0.9              | –1.3            | 0.732            | –0.1            | 0.989            |
| ARHGDA    | –0.4            | 0.9              | –0.5            | 0.583            | 0.2             | 0.862            |
| ARHGDIB   | 0.4             | 0.9              | 0.3             | 0.826            | 0.2             | 0.811            |
| ARHGEF37  | –1.3            | 0.862            | –0.6            | 0.826            | –0.7            | 0.613            |
| ARL6IP5   | –0.2            | 0.981            | 0.2             | 0.917            | –0.3            | 0.613            |
| ARL8B     | –0.8            | 0.927            | –0.2            | 0.976            | –0.6            | 0.691            |
| ARMC5     | 0.6             | 0.972            | 0.2             | 0.973            | 0.4             | 0.868            |
| ARNTL2    | –0.1            | 0.984            | –0.7            | 0.821            | 0.6             | 0.657            |
| ARPC1A    | –0.4            | 0.903            | –0.4            | 0.821            | –0.1            | 0.964            |
| ARPC1B    | 0.1             | 0.982            | 0.1             | 0.951            | 0.1             | 1.00             |
| ARPC2     | –0.1            | 0.988            | –0.1            | 0.995            | –0.1            | 0.991            |
| ARPC3     | 0.1             | 0.982            | –0.1            | 0.98             | 0.2             | 0.855            |
| ARPC4     | –0.1            | 0.982            | –0.3            | 0.792            | 0.3             | 0.526            |
| ARPC5     | 0.1             | 1.00             | –0.8            | 0.555            | 0.8             | 0.182            |
| ARPC5L    | –0.5            | 0.927            | –0.9            | 0.668            | 0.4             | 0.704            |
| ASAHI     | 0.2             | 0.982            | –0.6            | 0.616            | 0.7             | 0.134            |
| ASNA      | –0.1            | 0.982            | –0.6            | 0.674            | 0.5             | 0.391            |
| ASPH      | 0.3             | 0.982            | 0.1             | 0.99             | 0.2             | 0.889            |
| ASPN      | 0.2             | 0.982            | –1.3            | 0.451            | 1.4             | 0.072            |
| ASS1      | –0.6            | 0.9              | –0.5            | 0.792            | –0.1            | 0.951            |
| ATAD2B    | –0.6            | 0.941            | –0.9            | 0.759            | 0.4             | 0.795            |
| ATIC      | –0.2            | 0.974            | –0.4            | 0.792            | 0.3             | 0.741            |
| ATL3      | –0.4            | 0.927            | 0.1             | 0.956            | –0.5            | 0.506            |
| ATOX1     | –0.2            | 0.982            | –0.6            | 0.718            | 0.5             | 0.483            |
| ATP1A1    | –0.2            | 0.982            | 0.1             | 0.993            | –0.2            | 0.889            |
| ATP2A2    | –0.3            | 0.976            | 0.3             | 0.899            | –0.6            | 0.561            |
| ATP2B4    | –0.1            | 0.984            | 0.3             | 0.906            | –0.4            | 0.761            |
| ATP5FIA   | 0.1             | 0.982            | –0.2            | 0.897            | 0.2             | 0.647            |
| ATP5FIB   | 0.2             | 0.982            | –0.5            | 0.77             | 0.6             | 0.286            |
| ATP5FIC   | 0.2             | 0.982            | –0.5            | 0.721            | 0.6             | 0.198            |
| ATP5FID   | 0.1             | 0.982            | –0.4            | 0.808            | 0.4             | 0.438            |
| ATP5ME    | –0.7            | 0.862            | –0.6            | 0.789            | –0.2            | 0.858            |
| ATP5MF    | 0.2             | 0.982            | 0.2             | 0.973            | 0.1             | 0.968            |
| ATP5MG    | –0.4            | 0.957            | –0.6            | 0.808            | 0.2             | 0.863            |
| ATP5PB    | –0.3            | 0.969            | –0.7            | 0.674            | 0.5             | 0.556            |
| ATP5PD    | –0.1            | 0.982            | –0.3            | 0.826            | 0.2             | 0.797            |
| ATP5PF    | –0.1            | 0.982            | –0.7            | 0.679            | 0.6             | 0.383            |
| ATP5PO    | 0.2             | 0.974            | –0.4            | 0.785            | 0.6             | 0.261            |
| ATP6V1A   | 0.2             | 0.982            | –0.6            | 0.707            | 0.7             | 0.191            |
| ATP6V1B2  | 0.2             | 0.982            | –0.5            | 0.782            | 0.7             | 0.286            |
### Supplementary Table III. Continued.

| Gene     | Log2FC TAA/TADA | Adjusted P value | Log2FC TBAD/TADA | Adjusted P value | Log2FC TAA/TBAD | Adjusted P value |
|----------|----------------|------------------|-----------------|-----------------|----------------|-----------------|
| ATP6V1E1 | 0.3            | 0.941            | −0.5            | 0.746           | 0.8            | 1.28            |
| ATP6V1H  | 0.3            | 0.927            | −0.2            | 0.917           | 0.5            | 0.401           |
| ATP8A1   | 0.1            | 0.984            | −0.6            | 0.897           | 0.6            | 0.729           |
| ATR      | −1             | 0.857            | −0.4            | 0.821           | −0.6           | 3.388           |
| AXIN1    | −1.2           | 0.903            | −1.3            | 0.792           | 0.2            | 9.688           |
| AZGP1    | −0.2           | 0.974            | −1.1            | 0.324           | 0.9            | 12.9            |
| B2M      | 0.2            | 0.982            | −0.7            | 0.491           | 0.8            | 0.699           |
| BAC2     | −0.6           | 0.9             | 0.2             | 0.933           | −0.8           | 0.301           |
| BANF1    | −0.6           | 0.903            | −1              | 0.533           | 0.5            | 5.81            |
| BASP1    | −0.1           | 0.982            | 0.1             | 0.951           | −0.2           | 7.577           |
| BBS9     | −0.3           | 0.966            | −0.1            | 0.989           | −0.2           | 0.8             |
| BCAM     | −0.8           | 0.862            | −0.2            | 0.953           | −0.7           | 3.306           |
| BCAP31   | −0.4           | 0.966            | −0.8            | 0.785           | 0.4            | 7.577           |
| BCL10    | −0.2           | 0.982            | 0.5             | 0.819           | −0.6           | 4.097           |
| BDH2     | −0.4           | 0.969            | −0.4            | 0.899           | 0.1            | 9.98            |
| BGN      | −0.5           | 0.927            | −0.5            | 0.826           | −0.1           | 9.953           |
| BLM      | −0.3           | 0.982            | −0.9            | 0.802           | 0.6            | 7.2             |
| BLMH     | 0.7            | 0.9              | 0.1             | 0.989           | 0.7            | 5.293           |
| BLVRA    | 0.1            | 0.982            | −0.2            | 0.933           | 0.3            | 7.033           |
| BLVRB    | 0.2            | 0.982            | −0.7            | 0.508           | 0.9            | 0.713           |
| BNC2     | −0.4           | 0.946            | −0.4            | 0.826           | 0.1            | 9.688           |
| BPGM     | 0.5            | 0.9              | −0.6            | 0.808           | 1.1            | 1.723           |
| BPNT1    | 0.1            | 0.982            | −0.3            | 0.928           | 0.3            | 7.953           |
| BRK1     | −0.1           | 0.982            | −0.3            | 0.922           | 0.2            | 8.943           |
| BSG      | −1.2           | 0.864            | −0.2            | 0.985           | −0.1           | 1.533           |
| C1orf54  | −0.2           | 0.982            | −0.4            | 0.826           | 0.2            | 8.255           |
| C1orf96  | −1.1           | 0.862            | −0.4            | 0.88            | −0.8           | 4.443           |
| C1orf198 | −0.1           | 0.982            | −0.3            | 0.861           | 0.3            | 8.766           |
| C1QA     | −0.9           | 0.9              | −0.2            | 0.951           | −0.7           | 4.973           |
| C1QB     | −0.3           | 0.972            | 0.1             | 0.973           | −0.4           | 7.173           |
| C1QC     | −0.5           | 0.941            | −0.3            | 0.907           | −0.2           | 9.183           |
| C1R      | 0.1            | 0.99             | −0.1            | 0.952           | 0.2            | 8.933           |
| C1S      | −0.1           | 0.982            | −0.4            | 0.77            | 0.3            | 5.766           |
| C2       | −0.9           | 0.862            | −1              | 0.538           | 0.2            | 9.113           |
| C2orf23  | −0.7           | 0.9              | −0.4            | 0.906           | −0.4           | 7.292           |
| C2orf78  | 0.2            | 0.982            | 1.2             | 0.524           | −1.1           | 2.473           |
| C3       | −0.2           | 0.972            | −0.8            | 0.401           | 0.7            | 3.988           |
| C4A      | −0.4           | 0.903            | −0.7            | 0.674           | 0.3            | 7.577           |
| C4B      | −0.1           | 0.99             | −0.5            | 0.808           | 0.4            | 5.673           |
| C4BPA    | −0.1           | 0.988            | −0.8            | 0.524           | 0.8            | 1.179           |
| C4BPB    | 0.2            | 0.982            | −1.2            | 0.431           | 1.3            | 0.661           |
| C5       | −0.2           | 0.979            | −0.6            | 0.679           | 0.4            | 5.056           |
| C6       | −0.3           | 0.927            | −0.3            | 0.848           | −0.1           | 9.626           |
| C7       | −0.3           | 0.969            | −0.1            | 0.966           | −0.2           | 8.633           |
| C8A      | −0.5           | 0.862            | −0.3            | 0.814           | −0.2           | 7.757           |
| C8B      | −0.4           | 0.903            | −0.5            | 0.759           | 0.2            | 8.883           |

(Continued on next page)
| Gene     | Log2FC TAA/TADA | Adjusted P value | Log2FC TBAD/TADA | Adjusted P value | Log2FC TAA/TBAD | Adjusted P value |
|----------|-----------------|------------------|------------------|------------------|-----------------|------------------|
| C8G      | 0.4             | 0.941            | 0.8              | 0.592            | 0.5             | 0.558            |
| C8orf74  | −0.1            | 0.993            | 0.9              | 0.753            | 0.9             | 0.372            |
| C9       | −0.3            | 0.942            | 0.2              | 0.934            | 0.2             | 0.863            |
| CA1      | 0.6             | 0.9              | 0.9              | 0.497            | 1.5             | 0.022            |
| CA123    | 0.2             | 0.982            | 1.3              | 0.639            | 1.1             | 0.36             |
| CA2      | 0.6             | 0.9              | −0.6             | 0.742            | 1.2             | 0.04             |
| CA3      | 0.3             | 0.982            | −0.4             | 0.891            | 0.6             | 0.537            |
| CAB39    | 0.2             | 0.982            | 0.1              | 0.997            | 0.2             | 0.912            |
| CACNA2D1 | −0.5            | 0.903            | 0.2              | 0.942            | 0.4             | 0.703            |
| CACYBP   | 0.1             | 0.982            | 0.1              | 0.973            | 0.1             | 0.998            |
| CALD1    | −0.5            | 0.903            | 0.3              | 0.891            | 0.2             | 0.84             |
| CALR     | −0.1            | 0.982            | 0.2              | 0.954            | 0.1             | 0.97             |
| CALU     | 0.3             | 0.903            | 0.1              | 0.973            | 0.3             | 0.638            |
| CAMK2G   | −0.4            | 0.929            | 0.6              | 0.726            | 1.0             | 0.103            |
| CAND1    | −0.4            | 0.903            | −0.4             | 0.822            | 0.1             | 0.962            |
| CANX     | 0.1             | 0.992            | 0.2              | 0.928            | 0.1             | 0.863            |
| CAPI     | 0.1             | 0.982            | −0.2             | 0.906            | 0.2             | 0.753            |
| CAP2     | −0.5            | 0.9              | −0.2             | 0.917            | −0.3            | 0.719            |
| CAPG     | 0.5             | 0.9              | −0.3             | 0.865            | 0.7             | 0.195            |
| CAPN1    | −0.1            | 0.984            | −0.2             | 0.894            | 0.2             | 0.811            |
| CAPN2    | −0.5            | 0.862            | −0.4             | 0.792            | −0.2            | 0.762            |
| CAPNS1   | −0.2            | 0.974            | −0.3             | 0.816            | 0.2             | 0.812            |
| CAPZA1   | 0.5             | 0.9              | −0.1             | 0.973            | 0.6             | 0.286            |
| CAPZA2   | −0.1            | 0.982            | −0.5             | 0.682            | 0.4             | 0.441            |
| CAPZB    | −0.1            | 0.982            | 0.1              | 0.951            | −0.2            | 0.742            |
| CARD10   | 1               | 0.878            | 0.2              | 0.973            | 0.9             | 0.399            |
| CASKIN2  | −0.3            | 0.966            | −0.4             | 0.847            | 0.1             | 0.957            |
| CASP8    | −0.6            | 0.9              | −0.1             | 0.954            | −0.5            | 0.506            |
| CAST     | 0.3             | 0.934            | −0.3             | 0.839            | 0.6             | 0.287            |
| CAT      | 0.4             | 0.903            | −0.2             | 0.906            | 0.6             | 0.315            |
| CATSPERG | −1.1            | 0.862            | −0.9             | 0.773            | −0.3            | 0.863            |
| CAV1     | −0.8            | 0.9              | −0.1             | 0.993            | −0.7            | 0.413            |
| CAV2     | −0.7            | 0.878            | −0.2             | 0.917            | −0.5            | 0.523            |
| CAVIN1   | −0.8            | 0.862            | −0.6             | 0.785            | −0.3            | 0.827            |
| CAVIN2   | 0.7             | 0.862            | 0.4              | 0.826            | 0.4             | 0.633            |
| CAVIN3   | −0.9            | 0.862            | −0.3             | 0.886            | −0.6            | 0.457            |
| CBLN2    | −0.5            | 0.9              | −0.7             | 0.604            | 0.3             | 0.758            |
| CBR1     | −0.4            | 0.927            | −0.6             | 0.65             | 0.3             | 0.684            |
| CBR3     | −0.3            | 0.982            | −0.1             | 0.989            | −0.3            | 0.873            |
| CCAR1    | −0.4            | 0.957            | −1.8             | 0.225            | 1.5             | 0.07             |
| CCDC158  | −0.8            | 0.9              | −0.5             | 0.826            | −0.3            | 0.843            |
| CCDC194  | −0.9            | 0.9              | 0.01             | 0.981            | −0.9            | 0.296            |
| CCDC25   | 2.9             | 0.862            | 1.4              | 0.821            | 1.6             | 0.544            |
| CCDC6    | −0.9            | 0.857            | −0.6             | 0.721            | −0.4            | 0.633            |
| CCDC69   | −0.5            | 0.957            | 0.2              | 0.973            | −0.6            | 0.669            |
| CCDC80   | 0.2             | 0.982            | −0.1             | 0.985            | 0.3             | 0.797            |
### Supplementary Table III. Continued.

| Gene   | Log2FC TAA/TADA | Adjusted P value | Log2FC TBAD/TADA | Adjusted P value | Log2FC TAA/TBAD | Adjusted P value |
|--------|-----------------|------------------|------------------|------------------|-----------------|------------------|
| CCN3   | –0.5            | 0.903            | –0.5             | 0.826            | –0.1            | 0.962            |
| CCS    | 0.6             | 0.903            | –0.1             | 0.99             | 0.6             | 0.504            |
| CCT2   | 0.1             | 0.982            | –0.2             | 0.836            | 0.3             | 0.493            |
| CCT3   | –0.1            | 0.982            | –0.4             | 0.792            | 0.3             | 0.664            |
| CCT4   | 0.1             | 0.982            | 0.1              | 0.962            | –0.1            | 0.979            |
| CCT5   | 0.2             | 0.982            | –0.2             | 0.937            | 0.3             | 0.688            |
| CCT6A  | 0.1             | 0.992            | 0.1              | 0.928            | –0.1            | 0.862            |
| CCT7   | 0.1             | 0.982            | –0.2             | 0.933            | 0.3             | 0.715            |
| CCT8   | 0.1             | 0.982            | –0.2             | 0.911            | 0.3             | 0.685            |
| CD109  | –0.5            | 0.9              | –0.6             | 0.792            | 0.1             | 0.979            |
| CD14   | 0.2             | 0.982            | –0.2             | 0.951            | 0.4             | 0.613            |
| CD151  | –0.5            | 0.929            | 0.1              | 0.993            | –0.5            | 0.688            |
| CD163  | 0.3             | 0.958            | 0.1              | 0.953            | 0.2             | 0.862            |
| CD34   | –0.7            | 0.862            | –0.6             | 0.762            | –0.2            | 0.87             |
| CD44   | –0.3            | 0.927            | –0.1             | 0.992            | –0.2            | 0.666            |
| CD47   | –0.2            | 0.982            | –0.1             | 0.951            | –0.1            | 0.968            |
| CD59   | –0.5            | 0.903            | –0.2             | 0.934            | –0.3            | 0.722            |
| CD5L   | –0.1            | 0.982            | –1               | 0.327            | 1               | 0.078            |
| CD81   | –0.4            | 0.942            | –0.4             | 0.847            | 0.1             | 0.998            |
| CD9    | –0.5            | 0.927            | –0.3             | 0.899            | –0.2            | 0.879            |
| CD97   | 0.1             | 0.992            | –0.3             | 0.907            | 0.3             | 0.793            |
| CD99   | –0.1            | 0.982            | –1               | 0.519            | 0.9             | 0.191            |
| CDC25C | 0.4             | 0.966            | –0.6             | 0.826            | 0.9             | 0.363            |
| CDC37  | –0.2            | 0.965            | 0.2              | 0.932            | –0.4            | 0.539            |
| CDC42  | –0.1            | 0.982            | –0.1             | 0.99             | –0.1            | 0.945            |
| CDC5L  | –0.4            | 0.927            | –1.5             | 0.225            | 1.1             | 0.065            |
| CDH1   | –0.3            | 0.982            | –0.1             | 0.993            | –0.3            | 0.863            |
| CDH13  | –1.2            | 0.857            | –0.6             | 0.792            | –0.7            | 0.383            |
| CDHR3  | –0.2            | 0.982            | –1.1             | 0.592            | 0.9             | 0.343            |
| CDKSAP3| 0.3             | 0.974            | 0.1              | 0.985            | 0.2             | 0.87             |
| CDKN2AIP| –0.5           | 0.972            | –1.1             | 0.757            | 0.7             | 0.657            |
| CELSR3 | –0.2            | 0.982            | 1                | 0.792            | –1.1            | 0.391            |
| CENPE  | –1.2            | 0.862            | –0.6             | 0.826            | –0.7            | 0.585            |
| CES1   | –0.9            | 0.857            | 0.1              | 0.994            | –0.9            | 0.164            |
| CFB    | –0.6            | 0.9              | –0.9             | 0.457            | 0.4             | 0.654            |
| CFD    | –0.3            | 0.947            | –0.9             | 0.457            | 0.7             | 0.528            |
| CFH    | –0.3            | 0.927            | –0.8             | 0.327            | 0.6             | 0.254            |
| CFHR1  | –0.8            | 0.9              | –0.9             | 0.668            | 0.2             | 0.925            |
| CFHR2  | –0.5            | 0.9              | –0.7             | 0.616            | 0.2             | 0.798            |
| CFHR5  | –0.8            | 0.878            | –0.9             | 0.59             | 0.2             | 0.913            |
| CFI    | –0.4            | 0.903            | –1.3             | 0.225            | 0.9             | 0.106            |
| CFL1   | –0.1            | 0.982            | –0.2             | 0.826            | 0.2             | 0.815            |
| CFL2   | 1               | 0.857            | –0.7             | 0.753            | –0.4            | 0.705            |
| CFP    | –0.4            | 0.941            | 0.1              | 0.976            | –0.4            | 0.581            |
| CHCHD3 | –0.5            | 0.927            | 0.1              | 0.98             | –0.6            | 0.526            |
| CHD8   | 0.2             | 0.966            | –0.1             | 0.982            | 0.2             | 0.699            |
### Supplementary Table III. Continued.

| Gene    | Log<sub>2</sub>FC TAA/TADA | Adjusted P value | Log<sub>2</sub>FC TBAD/TADA | Adjusted P value | Log<sub>2</sub>FC TAA/TBAD | Adjusted P value |
|---------|-----------------------------|------------------|-----------------------------|------------------|-----------------------------|------------------|
| CHMP2A  | 0.2                         | 0.982            | 0.6                         | 0.718            | −0.5                        | 0.463            |
| CHMP4B  | −0.3                        | 0.966            | −0.2                        | 0.928            | −0.1                        | 0.945            |
| CHST14  | −0.7                        | 0.9              | 0.3                         | 0.899            | −1                          | 0.247            |
| CHTF18  | −0.8                        | 0.941            | −1.8                        | 0.497            | 1.1                         | 0.441            |
| CILP2   | −1.7                        | 0.857            | −1.5                        | 0.418            | −0.3                        | 0.862            |
| CIRBP   | 0.3                         | 0.966            | −0.4                        | 0.848            | 0.7                         | 0.401            |
| CISD1   | 0.1                         | 0.982            | −0.2                        | 0.957            | 0.2                         | 0.873            |
| CKAP2   | −0.2                        | 0.982            | −0.8                        | 0.457            | 0.6                         | 0.22             |
| CKAP4   | 0.3                         | 0.969            | −0.1                        | 0.998            | 0.3                         | 0.767            |
| CKB     | −0.4                        | 0.927            | −0.7                        | 0.706            | 0.3                         | 0.757            |
| CKM     | 0.5                         | 0.9              | 0.5                         | 0.792            | 0.1                         | 0.996            |
| CLEC11A | 0.6                         | 0.9              | 0.1                         | 0.997            | 0.6                         | 0.513            |
| CLEC3B  | −0.1                        | 0.984            | −0.5                        | 0.792            | 0.4                         | 0.526            |
| CLIC1   | 0.3                         | 0.912            | −0.1                        | 0.934            | 0.3                         | 0.401            |
| CLIC4   | −0.5                        | 0.9              | −0.6                        | 0.742            | 0.2                         | 0.901            |
| CLTA    | 0.6                         | 0.9              | 0.5                         | 0.792            | 0.2                         | 0.916            |
| CLTB    | −0.3                        | 0.972            | −0.4                        | 0.831            | 0.2                         | 0.903            |
| CLTC    | −0.1                        | 0.982            | −0.2                        | 0.935            | 0.1                         | 0.93             |
| CLU     | −0.3                        | 0.972            | −0.5                        | 0.792            | 0.3                         | 0.764            |
| CMA1    | 0.1                         | 0.982            | −0.4                        | 0.821            | 0.5                         | 0.487            |
| CMBL    | −0.5                        | 0.903            | −0.5                        | 0.792            | 0.1                         | 0.979            |
| CMPK1   | −0.4                        | 0.903            | −0.6                        | 0.524            | 0.3                         | 0.585            |
| CMYA5   | 0.1                         | 0.982            | −1.1                        | 0.508            | 1.2                         | 1.123            |
| CN166   | −0.1                        | 0.982            | −0.5                        | 0.89             | 0.4                         | 0.811            |
| CNBP    | 0.2                         | 0.982            | 0.1                         | 0.993            | 0.2                         | 0.93             |
| CNDP2   | −0.3                        | 0.947            | −0.8                        | 0.524            | 0.5                         | 0.413            |
| CNN1    | −1.2                        | 0.857            | −0.5                        | 0.848            | −0.8                        | 0.457            |
| CNN2    | −0.1                        | 0.982            | −0.1                        | 0.937            | 0.1                         | 0.989            |
| CNN3    | −0.4                        | 0.947            | −0.5                        | 0.821            | 0.2                         | 0.933            |
| CNPY2   | 0.3                         | 0.957            | −0.4                        | 0.826            | 0.6                         | 0.346            |
| CNRIP1  | −0.1                        | 0.982            | −0.3                        | 0.792            | 0.3                         | 0.592            |
| CNTN1   | −0.4                        | 0.903            | −0.3                        | 0.892            | −0.2                        | 0.84             |
| COASY   | 0.1                         | 0.982            | −0.6                        | 0.792            | 0.7                         | 0.416            |
| COG5    | −0.4                        | 0.903            | 0.3                         | 0.819            | −0.6                        | 0.161            |
| COL12A1 | 0.4                         | 0.946            | −0.3                        | 0.899            | 0.7                         | 0.429            |
| COL14A1 | −0.6                        | 0.903            | −0.2                        | 0.942            | −0.4                        | 0.691            |
| COL15A1 | −0.1                        | 0.992            | −0.3                        | 0.899            | 0.2                         | 0.812            |
| COL18A1 | −0.7                        | 0.9              | −0.2                        | 0.956            | −0.5                        | 0.528            |
| COL1A1  | −1                          | 0.9              | −0.1                        | 0.988            | −1                          | 0.375            |
| COL1A2  | −1                          | 0.9              | −0.1                        | 1.00             | −1                          | 0.338            |
| COL21A1 | −1.8                        | 0.857            | 0.5                         | 0.877            | −2.2                        | 0.022            |
| COL3A1  | −1.3                        | 0.862            | 0.2                         | 0.966            | −1.4                        | 0.179            |
| COL4A1  | −1.1                        | 0.857            | 0.2                         | 0.951            | −1.2                        | 0.083            |
| COL4A2  | −1.3                        | 0.857            | 0.2                         | 0.935            | −1.5                        | 0.05             |
| COL4A3  | −1                          | 0.862            | 0.3                         | 0.899            | −1.3                        | 0.071            |
| COL6A1  | −0.3                        | 0.966            | 0.2                         | 0.933            | −0.5                        | 0.561            |
### Supplementary Table III. Continued.

| Gene    | Log2FC TAA/ TADA | Adjusted P value | Log2FC TBAD/ TADA | Adjusted P value | Log2FC TAA/ TBAD | Adjusted P value |
|---------|------------------|------------------|-------------------|------------------|------------------|------------------|
|COL6A2  | –0.4             | .941             | 0.3               | .906             | –0.6             | .419             |
|COL6A3  | –0.3             | .947             | –0.6              | .757             | 0.3              | .739             |
|COL7A1  | 0.4              | .947             | –0.9              | .706             | 1.2              | .115             |
|COL8A1  | –1.3             | .857             | 0.3               | .936             | –1.6             | .08              |
|COLGALT1| –0.3             | .957             | –0.3              | .853             | 0.1              | .975             |
|COMT    | –0.2             | .982             | –0.2              | .947             | –0.1             | 1.00             |
|COPA    | 0.2              | .982             | 0.2               | .934             | –0.1             | .968             |
|COPB1   | 0.5              | 0.903            | 0.3               | .899             | 0.2              | .84              |
|COPB2   | 0.1              | .982             | –0.4              | .866             | 0.4              | .63              |
|COPG1   | 0.4              | .929             | 0.3               | .899             | 0.2              | .902             |
|COP55   | 0.3              | .941             | 0.1               | .998             | 0.3              | .691             |
|COP56   | –0.5             | .918             | –0.2              | .933             | –0.3             | .779             |
|CORO1A  | 0.3              | .963             | 0.3               | .899             | 0.1              | .979             |
|CORO1B  | –0.2             | .969             | –0.5              | .762             | 0.3              | .705             |
|CORO1C  | –0.4             | .903             | –0.4              | .815             | –0.1             | .995             |
|COTL1   | 0.2              | .969             | –0.2              | .896             | 0.4              | .496             |
|COX4I1  | 0.3              | .982             | –0.1              | .985             | 0.3              | .814             |
|COX5A   | 0.2              | .982             | –0.5              | .78              | 0.6              | .312             |
|COX5B   | 0.6              | .9               | –0.3              | .89              | 0.8              | .164             |
|COX6B1  | –0.5             | .903             | –0.8              | .668             | 0.4              | .743             |
|COX6C   | 0.6              | .941             | 0.8               | .792             | –0.2             | .905             |
|COX7A2  | 0.5              | .9               | –0.2              | .933             | 0.7              | .334             |
|CP      | –0.4             | .903             | –0.8              | .457             | 0.5              | .452             |
|CPA3    | 0.8              | .9               | –0.1              | .985             | 0.9              | .38              |
|CPB2    | 0.2              | .969             | –0.2              | .932             | 0.4              | .572             |
|CPNE1   | –0.3             | .957             | 0.2               | .904             | –0.4             | .463             |
|CPNE3   | –0.2             | .982             | 0.5               | .792             | –0.7             | .343             |
|CPPED1  | –0.4             | .93              | –0.7              | .682             | 0.4              | .72              |
|CPQ     | –0.3             | .941             | –0.4              | .818             | 0.1              | .951             |
|CPXM2   | –0.6             | .9               | –0.4              | .853             | –0.3             | .862             |
|CREG1   | –0.5             | .941             | –0.6              | .822             | 0.1              | .968             |
|CRIP1   | 0.4              | .982             | –0.4              | .953             | 0.8              | .8               |
|CRIP2   | –0.7             | .9               | –0.3              | .919             | –0.4             | .688             |
|CRK     | –0.4             | .947             | –0.3              | .906             | –0.1             | .943             |
|CRKL    | –0.4             | .903             | –0.7              | .632             | 0.3              | .72              |
|CRLF1   | 0.4              | .941             | 0.1               | .976             | 0.3              | .739             |
|CRP     | –0.8             | .9               | –1.4              | .519             | 0.6              | .665             |
|CRYAB   | –0.8             | .862             | –0.4              | .824             | –0.4             | .697             |
|CRYL1   | –0.8             | .9               | –0.6              | .815             | –0.3             | .844             |
|CRYZ    | –0.4             | .9               | –0.7              | .583             | 0.3              | .701             |
|CS      | 0.4              | .9               | 0.2               | .917             | 0.2              | .746             |
|CSDE1   | –2               | .857             | –1.8              | .451             | –0.3             | .881             |
|CSK     | 0.4              | .927             | –0.1              | .973             | 0.5              | .533             |
|CSPG4   | –0.5             | .9               | –0.2              | .942             | –0.4             | .628             |
|CSPG5   | –1               | .9               | –0.8              | .808             | –0.3             | .898             |
|CSRPI   | –0.8             | .878             | –0.6              | .808             | –0.3             | .811             |
| Gene     | Log<sub>2</sub>FC TAA/TADA | Adjusted P value | Log<sub>2</sub>FC TBAD/TADA | Adjusted P value | Log<sub>2</sub>FC TAA/TBAD | Adjusted P value |
|----------|---------------------------|-----------------|-----------------------------|-----------------|-----------------------------|-----------------|
| CSRP2    | -1.2                      | 0.857           | -0.8                        | 0.762           | -0.5                        | 0.694           |
| CSTB     | -0.3                      | 0.903           | -0.7                        | 0.443           | 0.4                          | 0.43            |
| CTGF     | 0.9                       | 0.862           | 0.1                         | 0.988           | 0.8                          | 0.33            |
| CTHRC1   | 1                         | 0.857           | 0.2                         | 0.942           | 0.9                          | 1.47            |
| CTNNA1   | 0.3                       | 0.982           | 0.1                         | 0.988           | 0.2                          | 0.953           |
| CTNN1    | 0.3                       | 0.963           | -0.2                        | 0.933           | 0.4                          | 0.561           |
| CTPS1    | -0.3                      | 0.966           | -0.2                        | 0.919           | -0.1                         | 0.951           |
| CTSB     | 0.3                       | 0.969           | -0.3                        | 0.898           | 0.6                          | 0.487           |
| CTSC     | -0.1                      | 0.984           | -0.9                        | 0.519           | 0.9                          | 0.182           |
| CTSB     | 0.1                       | 0.982           | -0.6                        | 0.583           | 0.6                          | 0.164           |
| CTSF     | -0.7                      | 0.9             | -0.4                        | 0.826           | -0.3                         | 0.757           |
| CTSG     | 0.6                       | 0.9             | 0.7                         | 0.721           | -0.2                         | 0.916           |
| CTSZ     | 0.2                       | 0.974           | 0.1                         | 0.985           | 0.2                          | 0.7             |
| CTTN     | 0.1                       | 0.99            | 0.3                         | 0.826           | -0.3                         | 0.697           |
| CUL9     | 0.4                       | 0.982           | -1.4                        | 0.707           | 1.7                          | 0.198           |
| CUTA     | -0.5                      | 0.903           | -0.9                        | 0.583           | 0.4                          | 0.676           |
| CXCL12   | -0.2                      | 0.982           | 0.1                         | 0.985           | -0.2                         | 0.863           |
| CXCL16   | -0.6                      | 0.927           | -0.6                        | 0.826           | -0.1                         | 1.0             |
| CYB5R1   | -0.1                      | 0.99            | -0.2                        | 0.953           | 0.1                          | 0.933           |
| CYB5R3   | -0.4                      | 0.947           | -0.5                        | 0.799           | 0.2                          | 0.873           |
| CYBRD1   | -0.9                      | 0.9             | -1.3                        | 0.519           | 0.5                          | 0.703           |
| CYCS     | 0.6                       | 0.9             | -0.2                        | 0.933           | 0.7                          | 0.307           |
| CYFIP1   | -0.2                      | 0.982           | -0.1                        | 0.962           | -0.1                         | 0.978           |
| CYP20A1  | -0.3                      | 0.982           | -0.8                        | 0.848           | 0.6                          | 0.797           |
| CYP27B1  | 0.7                       | 0.903           | -1.3                        | 0.552           | 1.9                          | 0.037           |
| CYP2C8   | -0.4                      | 0.982           | -0.5                        | 0.917           | 0.1                          | 0.983           |
| DAAM2    | 0.7                       | 0.941           | 0.2                         | 0.956           | 0.5                          | 0.8             |
| DAD1     | -0.4                      | 0.974           | 0.2                         | 0.966           | -0.5                         | 0.726           |
| DAC1     | -0.8                      | 0.862           | -0.3                        | 0.868           | -0.5                         | 0.511           |
| DAR1     | 0.1                       | 0.982           | 0.2                         | 0.892           | -0.2                         | 0.814           |
| DBI      | -0.4                      | 0.9             | -0.3                        | 0.866           | -0.2                         | 0.806           |
| DBF1     | 0.3                       | 0.966           | -0.2                        | 0.934           | 0.4                          | 0.578           |
| DBNL     | 0.1                       | 0.997           | -0.6                        | 0.583           | 0.6                          | 0.199           |
| DCN      | 1.3                       | 0.857           | -0.5                        | 0.821           | 1.8                          | 0.022           |
| DCPS     | 0.2                       | 0.979           | -0.6                        | 0.679           | 0.7                          | 0.161           |
| DCTN1    | -0.1                      | 0.992           | 0.1                         | 0.985           | -0.1                         | 0.952           |
| DCTN2    | -0.1                      | 0.982           | -0.4                        | 0.792           | 0.3                          | 0.658           |
| DCTN3    | -0.4                      | 0.941           | -0.4                        | 0.821           | 0.1                          | 0.974           |
| DDAH1    | -0.5                      | 0.941           | -0.5                        | 0.826           | 0.1                          | 0.998           |
| DDAH2    | -0.5                      | 0.862           | -0.6                        | 0.609           | 0.1                          | 0.958           |
| DDB1     | -0.2                      | 0.982           | -0.4                        | 0.826           | 0.3                          | 0.762           |
| DDOCT    | 0.2                       | 0.981           | -0.4                        | 0.808           | 0.5                          | 0.346           |
| DDR1     | -1.2                      | 0.862           | -0.5                        | 0.89            | -0.8                         | 0.571           |
| DDT      | -0.3                      | 0.941           | -1                          | 0.324           | 0.8                          | 0.198           |
| DDX1     | -0.2                      | 0.979           | -0.5                        | 0.802           | 0.3                          | 0.757           |
| DDX25    | 0.2                       | 0.982           | 0.4                         | 0.84            | -0.3                         | 0.788           |
| Gene   | Log2FC TAA/TADA | Adjusted P value | Log2FC TBAD/TADA | Adjusted P value | Log2FC TAA/TBAD | Adjusted P value |
|--------|-----------------|------------------|------------------|------------------|-----------------|------------------|
| DDX39B| −0.5            | 0.941            | −0.4             | 0.878            | −0.1            | 0.957            |
| DDX3X | 0.2             | 0.982            | 0.5              | 0.792            | −0.4            | 0.676            |
| DDX6  | 0.5             | 0.946            | 0.4              | 0.882            | 0.1             | 0.974            |
| DECRI | 0.6             | 0.9              | 0.1              | 0.99             | 0.6             | 0.442            |
| DES   | 0.1             | 0.984            | −0.7             | 0.713            | 0.7             | 0.306            |
| DHAK  | 0.2             | 0.974            | −0.2             | 0.922            | 0.4             | 0.623            |
| DHR57 | −0.4            | 0.982            | 0.3              | 0.946            | −0.6            | 0.719            |
| DHX37 | −1.9            | 0.857            | −1               | 0.758            | −0.9            | 0.441            |
| DHX9  | −0.2            | 0.982            | −0.3             | 0.917            | 0.2             | 0.915            |
| DIA11 | −0.3            | 0.966            | −0.1             | 0.975            | −0.3            | 0.827            |
| DKK3  | −0.2            | 0.982            | −0.5             | 0.826            | 0.4             | 0.757            |
| DLAT  | −0.1            | 0.982            | −0.2             | 0.917            | 0.1             | 0.939            |
| DKGAP1| −0.5            | 0.969            | −0.6             | 0.853            | 0.2             | 0.95             |
| DLST  | 0.1             | 0.982            | −0.1             | 0.989            | 0.1             | 0.93             |
| DMD   | −0.5            | 0.9              | −0.2             | 0.922            | −0.3            | 0.705            |
| DNAH5 | −0.9            | 0.9              | −1.4             | 0.457            | 0.6             | 0.613            |
| DNAH9 | −2.4            | 0.857            | −1.8             | 0.451            | −0.7            | 0.678            |
| DNAJ2 | −0.1            | 0.982            | −0.2             | 0.892            | 0.2             | 0.84             |
| DNAJB11| 0.6            | 0.903            | 0.2              | 0.942            | 0.4             | 0.706            |
| DNAJB4| −0.4            | 0.927            | −0.4             | 0.82             | −0.1            | 1.00             |
| DNM1L | 0.3             | 0.957            | 0.2              | 0.942            | 0.2             | 0.889            |
| DNPEP | −0.3            | 0.972            | −0.3             | 0.917            | −0.1            | 0.991            |
| DNTTIP1| −1.5            | 0.857            | −0.7             | 0.792            | −0.8            | 0.447            |
| DNTTIP2| −0.5            | 0.927            | −0.6             | 0.792            | 0.2             | 0.915            |
| DPP5  | 0.3             | 0.941            | −0.3             | 0.826            | 0.6             | 0.286            |
| DPT   | −0.1            | 0.992            | −0.8             | 0.718            | 0.8             | 0.363            |
| DPYS1 | −0.1            | 0.982            | −0.4             | 0.812            | 0.3             | 0.642            |
| DPYS3 | −0.4            | 0.9              | −0.4             | 0.759            | 0.1             | 0.934            |
| DRAP1 | 0.2             | 0.982            | −0.3             | 0.848            | 0.4             | 0.529            |
| DSCAM | −1.6            | 0.862            | 0.2              | 0.976            | −1.8            | 0.198            |
| DSP   | 0.2             | 0.982            | −0.4             | 0.862            | 0.6             | 0.598            |
| DST   | −0.8            | 0.903            | −1               | 0.766            | 0.3             | 0.906            |
| DSTN  | −0.6            | 0.9              | −0.5             | 0.759            | −0.1            | 0.962            |
| DTWD2 | −0.2            | 0.982            | 0.7              | 0.846            | −0.8            | 0.581            |
| DUSP3 | −0.6            | 0.878            | −0.6             | 0.674            | 0.1             | 0.975            |
| DUT   | 0.2             | 0.982            | −0.3             | 0.933            | 0.4             | 0.785            |
| DYNCI1H1| −0.3           | 0.969            | 0.1              | 0.964            | −0.4            | 0.691            |
| DYNCI2 | −0.3            | 0.966            | −0.4             | 0.826            | 0.2             | 0.917            |
| DYNCI11| −0.1           | 0.986            | 0.1              | 0.973            | −0.2            | 0.913            |
| DYNCI12| −0.2           | 0.974            | −0.2             | 0.933            | −0.1            | 0.977            |
| DYNLRB1| −0.2           | 0.982            | −0.5             | 0.826            | 0.4             | 0.779            |
| ECH1  | 0.2             | 0.982            | −0.9             | 0.346            | 1.1             | 0.037            |
| ECHS1 | −0.1            | 0.982            | −0.4             | 0.808            | 0.4             | 0.65             |
| ECM1  | −0.1            | 0.982            | −0.2             | 0.933            | 0.1             | 0.945            |
| EEA1  | 0.2             | 0.982            | −0.1             | 0.961            | 0.2             | 0.759            |
| EEFIA2| 0.2             | 0.982            | −0.8             | 0.721            | 0.9             | 0.234            |

(Continued on next page)
**Supplementary Table III. Continued.**

| Gene     | Log2FC TAA/TADA | Adjusted P value | Log2FC TBAD/TADA | Adjusted P value | Log2FC TAA/TBAD | Adjusted P value |
|----------|-----------------|------------------|------------------|------------------|-----------------|------------------|
| EEF1B2   | −0.2            | .982             | −0.6             | .759             | 0.4             | .623             |
| EEF1D    | 0.1             | .982             | −0.5             | .721             | 0.5             | .301             |
| EEF1DP3  | −1.3            | .862             | −1.5             | .531             | 0.3             | .901             |
| EEF1G    | 0.1             | .982             | 0.1              | .993             | 0.1             | .962             |
| EEF2     | 0.1             | .982             | −0.1             | .973             | 0.2             | .824             |
| EFEMP1   | −0.9            | .862             | −0.2             | .933             | −0.7            | .447             |
| EFEMP2   | −0.5            | .9               | −0.4             | .808             | −0.1            | .978             |
| EFHD1    | −0.5            | .903             | −0.4             | .848             | −0.2            | .913             |
| EFHD2    | 0.6             | .9               | −0.4             | .861             | 0.9             | .172             |
| EFL1     | −0.3            | .957             | −0.6             | .791             | 0.3             | .791             |
| EGR4     | −1.1            | .9               | −1.1             | .75              | 0.1             | .97              |
| EHD1     | −0.1            | .982             | −0.1             | .951             | 0.1             | .962             |
| EHD2     | −1              | .857             | −0.6             | .789             | −0.4            | .623             |
| EHD3     | −0.7            | .9               | −0.1             | .974             | −0.7            | .463             |
| EHD4     | −0.4            | .9               | −0.3             | .821             | −0.1            | .899             |
| EIF1     | −0.3            | .957             | −0.7             | .508             | 0.5             | .372             |
| EIF2A    | −0.5            | .9               | 0.2              | .92              | −0.6            | .313             |
| EIF2B1   | −0.4            | .941             | 0.3              | .876             | −0.7            | .341             |
| EIF2S1   | −0.1            | .982             | −0.3             | .8               | 0.2             | .703             |
| EIF2S3   | 0.2             | .982             | 0.3              | .891             | −0.2            | .899             |
| EIF3A    | −0.3            | .982             | 0.3              | .899             | −0.5            | .567             |
| EIF3F    | 0.3             | .941             | −0.4             | .826             | 0.7             | .301             |
| EIF3I    | 0.1             | .99              | −0.5             | .817             | 0.5             | .557             |
| EIF4A1   | −0.2            | .982             | −0.2             | .951             | 0.1             | .983             |
| EIF4A2   | −0.2            | .972             | −0.4             | .792             | 0.3             | .776             |
| EIF4A3   | −0.1            | .994             | −0.3             | .899             | 0.3             | .8              |
| EIF4B    | 0.2             | .982             | −0.1             | .988             | 0.2             | .887             |
| EIF4C2   | −0.3            | .972             | −0.2             | .951             | −0.2            | .93              |
| EIF4G3   | −0.3            | .982             | −2               | .225             | 1.8             | .035             |
| EIF4H    | −0.3            | .972             | −0.1             | .998             | −0.3            | .821             |
| EIF5     | −0.5            | .9               | −0.5             | .792             | 0.1             | 1.0              |
| EIF5A    | −0.3            | .976             | −0.7             | .791             | 0.5             | .697             |
| EIF6     | −0.5            | .927             | −0.8             | .668             | 0.4             | .704             |
| ELANE    | −0.4            | .941             | −0.3             | .917             | −0.2            | .902             |
| ELAVL1   | −0.2            | .982             | −0.2             | .939             | −0.1            | .998             |
| ELN      | −1              | .862             | 1                | .634             | −1.9            | .022             |
| ELOB     | −0.4            | .941             | −0.4             | .821             | 0.1             | .966             |
| EMD      | −0.7            | .9               | −0.2             | .951             | −0.6            | .48              |
| EMILIN1  | −0.8            | .857             | 0.3              | .88              | −1              | .035             |
| EMILIN2  | 0.1             | .982             | −0.2             | .953             | 0.3             | .84              |
| EML2     | −0.6            | .878             | −0.7             | .497             | 0.2             | .792             |
| EML3     | 0.1             | .997             | −0.3             | .944             | 0.3             | .891             |
| ENAH     | −0.3            | .947             | −0.2             | .942             | −0.2            | .863             |
| ENAM     | −0.8            | .9               | −0.7             | .782             | −0.2            | .913             |
| ENDOD1   | −0.1            | .984             | −0.2             | .934             | 0.2             | .905             |
| ENG      | −0.1            | .982             | 0.2              | .922             | −0.3            | .741             |
| Gene       | Log2FC TAA/TADA | Adjusted P value | Log2FC TBAD/TADA | Adjusted P value | Log2FC TAA/TBAD | Adjusted P value |
|------------|-----------------|------------------|------------------|------------------|-----------------|------------------|
| ENO1       | -0.4            | 0.9              | -0.2             | 0.826            | -0.2            | 0.757            |
| ENO2       | -0.4            | 0.862            | -0.2             | 0.848            | -0.3            | 0.65             |
| ENOPH1     | -0.3            | 0.974            | -0.8             | 0.785            | 0.5             | 0.697            |
| ENPP1      | -0.1            | 0.984            | 0.2              | 0.917            | -0.3            | 0.785            |
| ENPP2      | 0.2             | 0.982            | -0.2             | 0.937            | 0.4             | 0.688            |
| EPB41L2    | 0.1             | 0.982            | 0.2              | 0.957            | -0.1            | 0.968            |
| EPDR1      | -0.3            | 0.96             | -0.3             | 0.891            | -0.1            | 1.00             |
| EPHX1      | -0.2            | 0.982            | -0.9             | 0.327            | 0.8             | 0.112            |
| EPPK1      | -0.1            | 0.99             | -0.2             | 0.966            | 0.1             | 0.958            |
| EPRS1      | 0.3             | 0.969            | 0.2              | 0.934            | 0.1             | 0.944            |
| EPS15L1    | 0.1             | 0.993            | -0.1             | 1.00             | 0.1             | 0.991            |
| EPS8L1     | -1              | 0.9              | -0.9             | 0.792            | -0.2            | 0.955            |
| ERBIN      | -1              | 0.857            | -0.5             | 0.826            | -0.6            | 0.463            |
| ERC2       | 0.9             | 0.9              | -1.1             | 0.67             | 2               | 0.035            |
| ERH        | -0.1            | 0.982            | -0.3             | 0.899            | 0.2             | 0.8              |
| ERI1       | -0.9            | 0.957            | -1.2             | 0.822            | 0.3             | 0.928            |
| ERLIN2     | -0.3            | 0.947            | 0.2              | 0.933            | -0.5            | 0.509            |
| ERO1A      | -0.6            | 0.927            | -0.7             | 0.792            | 0.2             | 0.913            |
| ERP29      | 0.1             | 0.982            | -0.4             | 0.774            | 0.5             | 0.337            |
| ERP44      | 0.1             | 0.982            | -0.6             | 0.699            | 0.7             | 0.286            |
| ESI        | -0.4            | 0.941            | -0.6             | 0.764            | 0.2             | 0.824            |
| ESD        | -0.4            | 0.903            | -0.6             | 0.654            | 0.3             | 0.757            |
| ESYT1      | -0.1            | 0.997            | -0.2             | 0.951            | 0.2             | 0.903            |
| ESYT2      | -0.5            | 0.903            | -0.4             | 0.853            | -0.2            | 0.899            |
| ETF1       | -0.1            | 0.988            | -0.3             | 0.865            | 0.3             | 0.757            |
| ETFA       | 0.3             | 0.963            | -0.6             | 0.674            | 0.8             | 0.112            |
| ETFB       | 0.4             | 0.927            | -0.3             | 0.861            | 0.6             | 0.286            |
| EXOC3      | -0.8            | 0.9              | -0.8             | 0.759            | 0.1             | 1.00             |
| EXT1       | -0.6            | 0.912            | 0.3              | 0.933            | -0.8            | 0.394            |
| EYS        | -1.1            | 0.9              | 0.8              | 8                | -1.9            | 0.071            |
| EZR        | 0.2             | 0.972            | -0.1             | 0.988            | 0.2             | 0.75             |
| F10        | 0.2             | 0.982            | -1.2             | 0.512            | 1.4             | 0.106            |
| F11        | -0.8            | 0.9              | -0.3             | 0.917            | -0.5            | 0.641            |
| F12        | -0.1            | 0.982            | -0.4             | 0.821            | 0.3             | 0.726            |
| F13A1      | 0.2             | 0.982            | -0.5             | 0.792            | 0.6             | 0.378            |
| F13B       | 0.1             | 0.984            | -0.8             | 0.632            | 0.8             | 0.21             |
| F2         | -0.2            | 0.972            | -0.5             | 0.674            | 0.4             | 0.526            |
| F9         | -1              | 0.857            | -0.5             | 0.769            | -0.5            | 0.495            |
| FABP1      | -0.2            | 0.982            | -0.3             | 0.912            | 0.2             | 0.9              |
| FABP3      | -0.9            | 0.862            | -1               | 0.583            | 0.2             | 0.913            |
| FABP4      | -0.4            | 0.957            | -0.7             | 0.737            | 0.4             | 0.701            |
| FABP5      | 0.3             | 0.982            | -0.8             | 0.674            | 1.1             | 0.16             |
| FAH        | -0.3            | 0.941            | -0.6             | 0.538            | 0.4             | 0.494            |
| FAM135A    | 0.1             | 0.984            | -0.2             | 0.953            | 0.3             | 0.875            |
| FAM180A    | -1.2            | 0.9              | 0.6              | 0.862            | -1.8            | 1.32             |
| FAM50B     | -1.1            | 0.9              | -0.4             | 0.911            | -0.8            | 0.578            |

(Continued on next page)
| Gene   | Log$_2$FC TAA/TADA | Adjusted $P$ value | Log$_2$FC TBAD/TADA | Adjusted $P$ value | Log$_2$FC TAA/TBAD | Adjusted $P$ value |
|--------|--------------------|--------------------|---------------------|--------------------|-------------------|--------------------|
| FANCA  | –0.2   | 0.982  | 0.9   | 0.769  | –1    | 0.341  |
| FANK1  | 0.5    | 0.947  | –1.2  | 0.632  | 1.7   | 0.08   |
| FARSB  | –0.1   | 0.982  | –0.2  | 0.953  | 0.1   | 0.991  |
| FASN   | 0.4    | 0.941  | –0.2  | 0.934  | 0.6   | 0.483  |
| FAU    | –0.1   | 0.982  | –0.9  | 0.674  | 0.8   | 0.355  |
| FBUM1  | –0.8   | 0.862  | –0.4  | 0.831  | –0.4  | 0.658  |
| FBLN1  | –0.6   | 0.862  | –0.6  | 0.583  | 0.1   | 0.97   |
| FBLN2  | 0.1    | 0.993  | –0.5  | 0.819  | 0.5   | 0.578  |
| FBLN5  | –1.3   | 0.857  | 0.1   | 0.994  | –1.3  | 0.102  |
| FBN1   | –1.2   | 0.857  | 0.5   | 0.826  | –1.6  | 0.036  |
| FCGBP  | 0.2    | 0.982  | –0.1  | 0.973  | 0.2   | 0.862  |
| FCCR5A | –0.6   | 0.927  | 1     | 0.852  | 0.5   | 0.674  |
| FDPS   | –0.2   | 0.974  | –0.3  | 0.899  | 0.1   | 0.97   |
| FERMT2 | –0.8   | 0.862  | –0.3  | 0.899  | –0.6  | 0.427  |
| FERMT3 | 0.6    | 0.9    | 0.5   | 0.815  | 0.2   | 0.881  |
| FGA    | –0.2   | 0.982  | 0.4   | 0.847  | –0.5  | 0.537  |
| FGB    | –0.1   | 0.992  | 0.5   | 0.826  | –0.6  | 0.624  |
| FCG    | 0.2    | 0.982  | 0.5   | 0.826  | –0.4  | 0.739  |
| FGL2   | –0.3   | 0.972  | –0.5  | 0.808  | 0.3   | 0.811  |
| FH     | 0.2    | 0.982  | –0.7  | 0.769  | 0.9   | 0.286  |
| FHL1   | –1.1   | 0.857  | –0.6  | 0.815  | –0.6  | 0.526  |
| FHL2   | –0.6   | 0.9    | –0.6  | 0.759  | 0.1   | 0.964  |
| FHL3   | –0.5   | 0.9    | –0.4  | 0.821  | –0.2  | 0.917  |
| FHL5   | –0.1   | 0.984  | 0.2   | 0.933  | –0.2  | 0.824  |
| FICNL1 | –0.1   | 0.993  | 0.6   | 0.826  | –0.7  | 0.658  |
| FILIP1L| 0.1    | 0.982  | 0.3   | 0.826  | –0.2  | 0.787  |
| FIS1   | 0.1    | 0.982  | –0.7  | 0.674  | 0.7   | 0.197  |
| FKBPI1A| –0.5   | 0.9    | –0.7  | 0.59   | 0.3   | 0.744  |
| FKBP2  | 0.1    | 0.982  | –0.4  | 0.815  | 0.4   | 0.486  |
| FKBP3  | 0.5    | 0.903  | –0.1  | 0.993  | 0.6   | 0.514  |
| FKBP4  | 0.4    | 0.9    | 0.3   | 0.836  | 0.2   | 0.891  |
| FKBP5  | 0.8    | 0.9    | –0.6  | 0.808  | 1.3   | 0.103  |
| FKBP9  | –0.6   | 0.929  | –0.2  | 0.973  | –0.5  | 0.726  |
| FLAD1  | –0.6   | 0.957  | 0.2   | 0.985  | –0.8  | 0.688  |
| FLI1   | –0.5   | 0.903  | –0.3  | 0.853  | –0.2  | 0.878  |
| FLNA   | –0.5   | 0.9    | 0.2   | 0.933  | –0.6  | 0.324  |
| FLNB   | 0.5    | 0.941  | –0.2  | 0.952  | 0.6   | 0.529  |
| FLNC   | –0.5   | 0.9    | 0.2   | 0.917  | –0.7  | 0.248  |
| FLOT1  | –0.1   | 0.982  | 0.2   | 0.826  | –0.3  | 0.539  |
| FLOT2  | –0.3   | 0.969  | 0.3   | 0.862  | –0.5  | 0.441  |
| FMOD   | –0.6   | 0.903  | –0.5  | 0.826  | –0.2  | 0.931  |
| FNI    | –0.4   | 0.9    | 0.1   | 0.956  | –0.5  | 0.372  |
| FNSK   | –1.1   | 0.9    | –2.2  | 0.323  | 1.1   | 0.401  |
| FOXL1  | –0.2   | 0.982  | –1.1  | 0.538  | 1     | 0.259  |
| FRMD6  | –0.4   | 0.969  | –1    | 0.588  | 0.7   | 0.441  |
| FRZB   | –0.5   | 0.941  | –0.3  | 0.933  | –0.3  | 0.855  |
**Supplementary Table III.** Continued.

| Gene     | Log₂FC TAA/TADA | Adjusted P value | Log₂FC TBAD/TADA | Adjusted P value | Log₂FC TAA/TBAD | Adjusted P value |
|----------|-----------------|------------------|------------------|------------------|-----------------|------------------|
| FSCN1    | -0.1            | 0.99             | -0.5             | 0.815            | 0.5             | 0.596            |
| FSIP2    | -0.6            | 0.916            | -0.7             | 0.789            | 0.2             | 0.916            |
| FSTL1    | -0.3            | 0.947            | -0.1             | 0.965            | -0.2            | 0.818            |
| FTH1     | 0.6             | 0.903            | 0.1              | 0.993            | 0.6             | 0.592            |
| FUBP1    | 0.1             | 0.984            | -0.2             | 0.942            | 0.3             | 0.852            |
| FUA1     | 0.2             | 0.982            | -0.9             | 0.391            | 1               | 0.04             |
| FURIN    | 0.1             | 0.993            | -0.4             | 0.933            | 0.4             | 0.844            |
| G6PD     | 0.1             | 0.988            | 0.2              | 0.897            | -0.2            | 0.811            |
| GAA      | -0.2            | 0.979            | -0.7             | 0.605            | 0.5             | 0.405            |
| GALM     | 0.1             | 0.993            | -0.6             | 0.679            | 0.6             | 0.301            |
| GANAB    | -0.1            | 0.986            | -0.1             | 0.933            | 0.1             | 0.899            |
| GAPDH    | -0.3            | 0.941            | -0.4             | 0.808            | 0.1             | 0.916            |
| GAPDHS   | -0.4            | 0.979            | -0.7             | 0.826            | 0.3             | 0.851            |
| GARS1    | 0.5             | 0.929            | 0.1              | 0.998            | 0.5             | 0.652            |
| GART     | -0.4            | 0.947            | -0.5             | 0.831            | 0.1             | 0.975            |
| GAS6     | -0.2            | 0.982            | -0.8             | 0.674            | 0.7             | 0.403            |
| GASK1B   | -0.6            | 0.9              | -0.1             | 0.988            | -0.6            | 0.543            |
| GBA      | 0.4             | 0.969            | 0.4              | 0.882            | -0.1            | 0.98             |
| GBE1     | -0.8            | 0.862            | -0.2             | 0.934            | -0.7            | 0.311            |
| GBLP     | 0.3             | 0.941            | -0.1             | 0.953            | 0.4             | 0.543            |
| GBP1     | -0.5            | 0.927            | -0.7             | 0.742            | 0.3             | 0.825            |
| GC       | -0.2            | 0.982            | -0.7             | 0.508            | 0.5             | 0.286            |
| GCA      | 0.1             | 0.982            | 0.7              | 0.759            | -0.6            | 0.447            |
| GCLC     | 0.4             | 0.9              | -0.7             | 0.511            | 1.1             | 0.023            |
| GDI1     | -0.5            | 0.9              | -0.7             | 0.631            | 0.2             | 0.855            |
| GDI2     | -0.1            | 0.982            | -0.3             | 0.808            | 0.2             | 0.669            |
| GFPT1    | -0.3            | 0.972            | 0.3              | 0.899            | -0.6            | 0.526            |
| GFUS     | 0.1             | 0.99             | 0.2              | 0.951            | -0.1            | 0.93             |
| GGT5     | -0.6            | 0.9              | -1               | 0.468            | 0.5             | 0.543            |
| GJA1     | -0.5            | 0.912            | 0.1              | 0.998            | -0.5            | 0.572            |
| GLDC     | -0.5            | 0.941            | -1.8             | 0.264            | 1.3             | 0.133            |
| GLIPR2   | -0.5            | 0.9              | -0.5             | 0.792            | -0.1            | 0.998            |
| GLO1     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO1     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
| GLO2     | -0.3            | 0.9              | -0.6             | 0.451            | 0.3             | 0.561            |
### Supplementary Table III. Continued.

| Gene     | Log₂FC TAA/ TADA | Adjusted P value | Log₂FC TBAD/ TADA | Adjusted P value | Log₂FC TAA/ TBAD | Adjusted P value |
|----------|------------------|------------------|-------------------|------------------|-----------------|------------------|
| GNB4     | −0.4             | 0.927            | −0.4              | 0.792            | 0.1             | 0.931            |
| GNG12    | −0.5             | 0.941            | −0.5              | 0.83             | −0.1            | 0.998            |
| GNPTA1   | −0.2             | 0.982            | −0.3              | 0.922            | 0.1             | 0.962            |
| GOLM1    | −0.8             | 0.966            | −1.1              | 0.802            | 0.5             | 0.825            |
| GOT1     | −0.6             | 0.992            | −0.4              | 0.826            | 0.4             | 0.658            |
| GOT2     | −0.1             | 0.988            | −0.6              | 0.718            | 0.6             | 0.378            |
| GPBP1L1  | −2               | 0.817            | −0.2              | 0.966            | −0.1            | 0.195            |
| GPC4     | 0.1              | 0.997            | −0.6              | 0.792            | 0.6             | 0.509            |
| GPC6     | −0.5             | 0.941            | −0.4              | 0.862            | −0.1            | 0.958            |
| GPD1L    | −0.4             | 0.941            | −0.5              | 0.792            | 0.2             | 0.878            |
| GPR1     | −0.3             | 0.9              | −0.3              | 0.792            | −0.1            | 0.961            |
| GPM6A    | −0.7             | 0.903            | 0.2               | 0.953            | −0.9            | 0.409            |
| GNPTA2   | 0.9              | 0.9              | −0.3              | 0.933            | 1.2             | 0.296            |
| GPX1     | −0.1             | 0.982            | −0.7              | 0.551            | 0.7             | 0.266            |
| GPX3     | −0.4             | 0.912            | −0.4              | 0.822            | −0.1            | 0.974            |
| GPX4     | 0.2              | 0.982            | −0.4              | 0.874            | 0.6             | 0.572            |
| GRB2     | 0.1              | 0.982            | −0.7              | 0.508            | 0.7             | 1.06             |
| GRB7     | −0.1             | 0.982            | −0.4              | 0.792            | 0.3             | 0.598            |
| GRHPR    | −0.2             | 0.972            | −0.4              | 0.808            | 0.2             | 0.812            |
| GRP78    | 0.2              | 0.973            | 0.3               | 0.821            | −0.2            | 0.84             |
| GS1      | −0.2             | 0.946            | −0.3              | 0.826            | 0.1             | 0.974            |
| GSR      | 0.2              | 0.972            | −0.1              | 0.917            | 0.2             | 0.581            |
| GS2      | 0.4              | 0.947            | −1                | 0.632            | 1.4             | 0.083            |
| GSTM2    | −0.4             | 0.941            | −0.7              | 0.762            | 0.3             | 0.814            |
| GSTM3    | −0.5             | 0.9              | −0.6              | 0.677            | 0.1             | 0.913            |
| GSTO1    | 0.1              | 0.982            | −0.2              | 0.843            | 0.3             | 0.498            |
| GSTP1    | −0.4             | 0.9              | −0.2              | 0.917            | −0.2            | 0.682            |
| GSTT1    | −0.5             | 0.903            | −0.5              | 0.792            | 0.1             | 0.99             |
| GUK1     | −0.6             | 0.9              | −0.6              | 0.815            | −0.1            | 0.962            |
| GULP1    | −0.1             | 0.982            | 0.3               | 0.907            | −0.3            | 0.753            |
| GY1      | −0.5             | 0.903            | −0.7              | 0.679            | 0.2             | 0.822            |
| H1-0     | −0.3             | 0.941            | −0.3              | 0.866            | −0.1            | 0.976            |
| H1-5     | 0.4              | 0.974            | −0.4              | 0.917            | 0.7             | 0.593            |
| H2AC21   | 0.2              | 0.982            | −0.2              | 0.933            | 0.4             | 0.669            |
| H3-3A    | −0.7             | 0.9              | −0.7              | 0.755            | 0.1             | 0.987            |
| H4-16    | −0.3             | 0.982            | −0.8              | 0.789            | 0.6             | 0.652            |
| HAAO     | −0.9             | 0.857            | −1                | 0.346            | 0.1             | 0.958            |
| HABP2    | −0.2             | 0.982            | −0.4              | 0.818            | 0.3             | 0.757            |
| HADH     | 0.3              | 0.922            | −0.3              | 0.814            | 0.6             | 0.178            |
| HADHA    | −0.1             | 0.984            | −0.3              | 0.822            | 0.3             | 0.676            |
| HADHB    | −0.1             | 0.997            | −0.2              | 0.847            | 0.2             | 0.697            |
| HAGH     | 0.1              | 0.982            | −0.3              | 0.755            | 0.4             | 0.316            |
| HAPLN1   | −0.6             | 0.9              | −0.2              | 0.953            | −0.5            | 0.646            |
| HAPLN3   | −1.1             | 0.862            | −0.5              | 0.826            | −0.6            | 0.567            |
| HARS2    | −0.5             | 0.941            | −0.5              | 0.825            | 0.1             | 0.971            |
### Supplementary Table III. Continued.

| Gene    | Log2FC TAA/TADA | Adjusted P value | Log2FC TBAD/TADA | Adjusted P value | Log2FC TAA/TBAD | Adjusted P value |
|---------|-----------------|------------------|------------------|------------------|-----------------|------------------|
| HBA1    | 0.9             | 0.862            | −0.6             | 0.792            | 1.5             | 0.032            |
| HBB     | 0.6             | 0.9              | −0.9             | 0.583            | 1.4             | 0.035            |
| HBD     | 0.5             | 0.903            | −0.7             | 0.674            | 1.2             | 0.066            |
| HBZ     | 1.1             | 0.862            | −0.7             | 0.808            | 1.8             | 0.038            |
| HDGF    | −0.4            | 0.903            | −0.1             | 0.961            | −0.3            | 0.688            |
| HDGFL3  | −0.5            | 0.941            | −1               | 0.616            | 0.6             | 0.567            |
| HDHD2   | 0.1             | 0.982            | −0.4             | 0.821            | 0.4             | 0.526            |
| HDLBP   | −0.1            | 0.982            | −0.3             | 0.897            | 0.2             | 0.863            |
| HEBP1   | −0.2            | 0.969            | −0.7             | 0.401            | 0.6             | 0.21             |
| HEBP2   | −0.6            | 0.9              | −0.5             | 0.792            | −0.1            | 0.945            |
| HEXA    | 0.5             | 0.903            | 0.6              | 0.762            | −0.1            | 0.931            |
| HEXB    | −0.1            | 0.982            | −0.6             | 0.674            | 0.5             | 0.399            |
| HIBADH  | −0.4            | 0.903            | −0.9             | 0.476            | 0.5             | 0.486            |
| HIBCH   | 0.1             | 0.982            | −0.4             | 0.792            | 0.5             | 0.372            |
| HINT1   | −0.3            | 0.957            | −0.9             | 0.327            | 0.7             | 0.185            |
| HK1     | 0.1             | 0.992            | 0.1              | 0.975            | −0.1            | 0.962            |
| HKDC1   | 0.7             | 0.9              | −1               | 0.668            | 1.7             | 0.044            |
| HLA-DRA | 0.6             | 0.9              | −0.4             | 0.826            | 1               | 1.104            |
| HLCs    | 0.7             | 0.903            | 0.2              | 0.975            | 0.6             | 0.652            |
| HMCN1   | −0.7            | 0.9              | 0.1              | 0.98            | −0.8            | 0.342            |
| HMGB2   | −0.2            | 0.982            | 0.5              | 0.753            | −0.6            | 0.234            |
| HMGC52  | 0.2             | 0.982            | −0.6             | 0.826            | 0.8             | 0.518            |
| HNRNPA1 | 0.8             | 0.9              | 0.8              | 0.718            | −0.1            | 0.951            |
| HNRNPA2B1 | 0.1          | 0.982            | 0.1              | 0.987            | 0.1             | 0.994            |
| HNRNPA3 | −0.1            | 0.982            | −0.1             | 0.992            | −0.1            | 0.987            |
| HNRNPA8 | 0.3             | 0.941            | −0.4             | 0.764            | 0.7             | 0.137            |
| HNRNPC  | −0.1            | 0.982            | −0.8             | 0.708            | 0.7             | 0.426            |
| HNRNPD  | −0.1            | 0.9              | −0.3             | 0.834            | 0.3             | 0.703            |
| HNRNPF  | 0.4             | 0.974            | −0.3             | 0.934            | 0.6             | 0.658            |
| HNRNPH3 | −0.2            | 0.969            | −0.1             | 0.989            | −0.2            | 0.811            |
| HNRNPK  | −0.2            | 0.974            | −0.4             | 0.78             | 0.2             | 0.688            |
| HNRNP L | 0.1             | 0.982            | 0.1              | 0.989            | 0.1             | 0.974            |
| HNRNPM  | 0.3             | 0.9              | 0.2              | 0.862            | 0.1             | 0.95             |
| HNRNPR  | 0.2             | 0.974            | −0.2             | 0.917            | 0.3             | 0.593            |
| HNRNPU  | −0.3            | 0.982            | −0.6             | 0.792            | 0.4             | 0.691            |
| HNRNPUL2| −0.3            | 0.982            | −0.3             | 0.941            | 0.1             | 1.00             |
| HP      | −1.1            | 0.862            | −1.6             | 0.391            | 0.5             | 0.704            |
| HP1BP3  | −0.2            | 0.982            | −0.2             | 0.933            | 0.1             | 0.968            |
| HPR     | −0.2            | 0.982            | −1.5             | 0.288            | 1.4             | 0.068            |
| HPRT1   | 0.4             | 0.941            | −0.4             | 0.826            | 0.7             | 0.287            |
| HPX     | −0.1            | 0.982            | −0.9             | 0.401            | 0.8             | 0.112            |
| HRG     | −0.5            | 0.867            | −0.2             | 0.899            | −0.4            | 0.557            |
| HSD17B10| 0.3             | 0.941            | −0.4             | 0.818            | 0.6             | 0.228            |
| HSD17B12| −0.2            | 0.972            | 0.1              | 0.989            | −0.2            | 0.783            |
| HSD17B3 | −0.7            | 0.9              | −0.7             | 0.789            | 0.1             | 0.979            |
| HSD17B4 | 0.4             | 0.941            | −0.2             | 0.933            | 0.6             | 0.48             |
| Gene       | Log2FC TAA/TADA | Adjusted P value | Log2FC TBAD/TADA | Adjusted P value | Log2FC TAA/TBAD | Adjusted P value |
|------------|----------------|------------------|------------------|------------------|----------------|------------------|
| HSF1       | 1.5            | 0.862            | 1.3              | 0.755            | 2.7            | 0.036            |
| HSP90AA1   | −0.3           | 0.93             | −0.2             | 0.891            | −0.1           | 0.917            |
| HSP90AB1   | −0.5           | 0.9              | −0.1             | 0.988            | −0.5           | 0.416            |
| HSP90B1    | 0.1            | 0.982            | 0.1              | 0.942            | 0.2            | 0.754            |
| HSPA2      | −1             | 0.857            | 0.6              | 0.792            | −0.5           | 0.587            |
| HSPA4      | 0.2            | 0.982            | −0.5             | 0.821            | 0.6            | 0.441            |
| HSPA4L     | 0.4            | 0.969            | −0.2             | 0.972            | 0.5            | 0.688            |
| HSPA5      | 0.2            | 0.941            | −0.1             | 0.998            | 0.2            | 0.658            |
| HSPA8      | 0.1            | 0.982            | −0.2             | 0.822            | 0.3            | 0.529            |
| HSPA9      | −0.1           | 0.993            | −0.3             | 0.821            | 0.3            | 0.627            |
| HSPB1      | −0.6           | 0.9              | −0.5             | 0.808            | −0.2           | 0.889            |
| HSPB6      | −0.6           | 0.9              | −0.9             | 0.668            | 0.3            | 0.797            |
| HSPB7      | −0.9           | 0.862            | −0.7             | 0.75             | −0.2           | 0.878            |
| HSPB8      | −0.6           | 0.9              | 0.1              | 0.993            | −0.7           | 0.487            |
| HSPD1      | 0.2            | 0.947            | −0.2             | 0.917            | 0.3            | 0.486            |
| HSE1       | 0.2            | 0.982            | −0.7             | 0.923            | 0.8            | 0.133            |
| HSPG2      | −0.7           | 0.862            | 0.2              | 0.934            | −0.9           | 0.144            |
| HTR3C      | 0.4            | 0.97             | −0.8             | 0.762            | 1.2            | 0.199            |
| HTRA1      | −0.5           | 0.941            | 0.6              | 0.82             | 0.1            | 0.961            |
| HV206      | −1.2           | 0.9              | −1.9             | 0.462            | 0.8            | 0.633            |
| HV209      | −0.5           | 0.947            | −1.7             | 0.377            | 1.2            | 0.234            |
| HV306      | −0.8           | 0.9              | −1.9             | 0.323            | 1.1            | 0.324            |
| HYOU1      | 0.4            | 0.927            | 0.3              | 0.907            | 0.2            | 0.862            |
| IAH1       | −0.4           | 0.9              | −0.5             | 0.759            | 0.1            | 0.922            |
| IARS1      | 0.2            | 0.982            | 0.1              | 0.973            | 0.2            | 0.792            |
| IARS2      | −0.5           | 0.903            | −0.1             | 0.973            | −0.5           | 0.65             |
| IDH1       | −0.2           | 0.981            | 0.4              | 0.653            | 0.3            | 0.451            |
| IDH2       | 0.3            | 0.941            | 0.2              | 0.933            | 0.2            | 0.87             |
| IDH3A      | 0.2            | 0.982            | −0.6             | 0.759            | 0.7            | 0.247            |
| IDNK       | 2              | 0.857            | 0.7              | 0.826            | 2.7            | 0.019            |
| IER5       | −0.3           | 0.974            | 0.1              | 0.526            | 0.8            | 0.328            |
| IFT46      | −0.3           | 0.957            | −1.3             | 0.287            | 1              | 0.133            |
| IGDCC3     | −0.6           | 0.959            | 1.3              | 0.727            | −1.8           | 0.147            |
| IGF2       | −0.8           | 0.862            | −0.9             | 0.49             | 0.2            | 0.894            |
| IGFALS     | −0.1           | 0.982            | −0.9             | 0.586            | 0.8            | 0.28             |
| IGFBP2     | −0.5           | 0.929            | −0.3             | 0.899            | −0.2           | 0.89             |
| IGFBP3     | −0.7           | 0.9              | 0.2              | 0.946            | −0.9           | 0.325            |
| IGFBP5     | −0.7           | 0.9              | 0.1              | 0.981            | −0.7           | 0.344            |
| IGFBP6     | −0.1           | 0.99             | 0.3              | 0.9              | 0.3            | 0.82             |
| IGFBP7     | −1.1           | 0.857            | −0.2             | 0.951            | 1              | 0.203            |
| IGHG1      | −0.4           | 0.9              | −1.4             | 0.237            | 1              | 0.135            |
| IGHG2      | 0.5            | 0.927            | −1.6             | 0.286            | 1.1            | 0.19             |
| IGHG3      | 0.1            | 0.984            | −0.3             | 0.899            | 0.3            | 0.825            |
| Gene       | Log2FC TAA/TADA | Adjusted P value | Log2FC TBAD/TADA | Adjusted P value | Log2FC TAA/TBAD | Adjusted P value |
|------------|-----------------|------------------|------------------|------------------|-----------------|-----------------|
| IGHG4      | −0.8            | 0.9              | −1.2             | 0.519            | 0.4             | 0.751           |
| IGHM       | −0.3            | 0.972            | −1.5             | 0.287            | 1.3             | 0.104           |
| IGHV2-70D  | −0.3            | 0.982            | −0.7             | 0.826            | 0.4             | 0.818           |
| IGHV3-20   | −0.5            | 0.947            | −0.8             | 0.742            | 0.4             | 0.72            |
| IGHV3-49   | −0.4            | 0.957            | −1.8             | 0.225            | 1.4             | 0.089           |
| IGHV3-64D  | −0.6            | 0.9              | −1.4             | 0.297            | 0.8             | 0.286           |
| IGHV3-7    | −0.7            | 0.9              | −1.5             | 0.225            | 0.9             | 0.204           |
| IGHV3-72   | −0.8            | 0.9              | −1.4             | 0.327            | 0.7             | 0.466           |
| IGHV3-74   | −0.6            | 0.9              | −1.8             | 0.225            | 1.2             | 0.111           |
| IGHV6-1    | −0.2            | 0.982            | −1.3             | 0.592            | 1.1             | 0.328           |
| IGKC       | −0.4            | 0.903            | −1.2             | 0.225            | 0.8             | 0.156           |
| IGKV1-12   | −1.2            | 0.862            | −1.5             | 0.457            | 0.3             | 0.862           |
| IGKV1-16   | −0.4            | 0.947            | −1.6             | 0.323            | 1.2             | 0.164           |
| IGKV1-6    | −0.3            | 0.972            | −1.1             | 0.508            | 0.8             | 0.312           |
| IGKV2-24   | −0.4            | 0.947            | −1.6             | 0.225            | 1.3             | 0.055           |
| IGKV3-20   | −0.6            | 0.899            | −1.2             | 0.262            | 0.6             | 0.372           |
| IGKV5D-15  | −0.4            | 0.965            | −2               | 0.225            | 1.7             | 0.035           |
| IGKV5D-20  | −0.7            | 0.9              | −1.9             | 0.225            | 1.3             | 0.123           |
| IGKV4-1    | −0.6            | 0.9              | −1.6             | 0.225            | 1               | 0.137           |
| IGLC7      | −0.6            | 0.903            | −1.6             | 0.225            | 1.1             | 0.151           |
| IGLL1      | −0.5            | 0.9              | −1               | 0.391            | 0.5             | 0.447           |
| IGLL5      | −0.5            | 0.941            | −2.6             | 0.225            | 2.1             | 0.023           |
| IGLV1-47   | −0.4            | 0.958            | −1.7             | 0.225            | 1.4             | 0.07            |
| IGLV1-51   | −1.2            | 0.878            | −1.7             | 0.432            | 0.6             | 0.688           |
| IGLV3-1    | −0.8            | 0.9              | −1.8             | 0.225            | 1.1             | 0.176           |
| IGLV3-12   | −0.6            | 0.9              | −1.4             | 0.225            | 0.8             | 0.247           |
| IGLV3-19   | −0.8            | 0.9              | −1.5             | 0.235            | 0.8             | 0.328           |
| IGLV4-3    | −0.6            | 0.954            | −1.2             | 0.682            | 0.7             | 0.644           |
| IGLV8-61   | −0.6            | 0.927            | −0.6             | 0.814            | 0.1             | 0.968           |
| IL12RB1    | −1.1            | 0.9              | −1               | 0.792            | −2.1            | 0.083           |
| IL1RAPL1   | −0.7            | 0.927            | −2.2             | 0.235            | 1.6             | 0.133           |
| IL1RL1     | 0.1             | 0.982            | −1.4             | 0.553            | 1.5             | 0.156           |
| IL34       | −0.2            | 0.982            | 0.7              | 0.742            | −0.9            | 0.213           |
| IL4I       | 0.2             | 0.972            | −0.7             | 0.526            | 0.9             | 0.071           |
| ILF2       | 0.3             | 0.982            | −0.2             | 0.942            | 0.5             | 0.698           |
| ILK        | −0.6            | 0.862            | 0.1              | 0.957            | −0.7            | 0.179           |
| IMPM1      | 0.1             | 0.986            | 0.2              | 0.902            | −0.2            | 0.827           |
| IMPA1      | −0.5            | 0.927            | −1               | 0.452            | 0.6             | 0.413           |
| IMPDH2     | −0.6            | 0.9              | −0.4             | 0.872            | −0.3            | 0.757           |
| IMPG1      | −1              | 0.903            | −0.6             | 0.866            | −0.4            | 0.857           |
| INF2       | 0.3             | 0.982            | −0.5             | 0.899            | 0.7             | 0.674           |
| INKAI      | 0.6             | 0.903            | −0.7             | 0.78             | 1.2             | 0.103           |
| IPO5       | 0.2             | 0.982            | 0.1              | 0.961            | 0.1             | 0.945           |
| IPO7       | −0.2            | 0.974            | −0.1             | 1.00             | −0.2            | 0.828           |
| IPO9       | −0.1            | 0.982            | −0.2             | 0.945            | 0.1             | 0.968           |
| IQCAP1     | −0.2            | 0.969            | −0.2             | 0.859            | 0.1             | 0.962           |

(Continued on next page)
| Gene   | Log2FC TAA/TADA | Adjusted P value | Log2FC TBAD/TADA | Adjusted P value | Log2FC TAA/TBAD | Adjusted P value |
|--------|----------------|------------------|------------------|------------------|----------------|------------------|
| IRGC   | –0.6           | .944             | 0.6              | .826             | –1.1           | 3.06             |
| ISLR   | 0.1            | .997             | –0.3             | .913             | 0.3            | 0.812            |
| ISYNA1 | –0.6           | .903             | –0.5             | .857             | –0.2           | 0.899            |
| ITGA1  | –0.9           | .857             | –0.4             | .826             | –0.6           | 4.488            |
| ITGA11 | –0.4           | .947             | –0.1             | .987             | –0.4           | 7.62             |
| ITGA3  | –0.8           | .862             | 0.1              | .998             | –0.8           | 212              |
| ITGA5  | –0.6           | .9               | –0.2             | .951             | –0.5           | 5.72             |
| ITGA7  | –0.8           | .857             | –0.4             | .821             | –0.4           | 5.37             |
| ITGA8  | –0.8           | .862             | –0.2             | .944             | –0.7           | 3.6              |
| ITGAV  | –0.3           | .957             | –0.1             | .998             | –0.3           | 7.33             |
| ITGB1  | –0.6           | .9               | –0.4             | .826             | –0.3           | 7.95             |
| ITGB2  | 0.3            | 969              | 0.3              | .865             | –0.1           | 9.68             |
| ITGB3  | 0.2            | 982              | 0.9              | .592             | –0.7           | 343              |
| ITGB5  | –0.2           | 972              | –0.3             | .9               | 0.1            | 9.9              |
| ITIHI1 | –0.1           | 982              | –0.7             | .679             | 0.6            | 401              |
| ITIHI2 | 0.3            | .947             | –0.5             | .776             | 0.7            | 1.77             |
| ITIHI3 | –0.1           | 997              | –0.7             | .632             | 0.7            | 2.61             |
| ITIHI4 | –0.3           | .946             | –1.1             | .225             | 0.8            | 0.089            |
| ITIHI5 | –0.9           | .857             | –0.6             | .713             | –0.3           | 7.92             |
| ITM2B  | –0.6           | .9               | –0.5             | .816             | –0.2           | 9.06             |
| ITPR1  | –0.6           | .9               | –0.1             | .972             | –0.5           | 5.03             |
| IVD    | 0.1            | 986              | 0.3              | .913             | –0.3           | 8.44             |
| IVNS1ABP | –0.2         | 982              | 0.1              | .964             | –0.3           | 7.57             |
| JCHAIN | –0.1           | 997              | –1.2             | .286             | 1.2            | 0.044            |
| JMY    | –1.3           | .862             | –0.7             | .826             | –0.7           | 6.76             |
| K132L  | –1.2           | .862             | –1               | .718             | –0.2           | 9.02             |
| KANK2  | –0.6           | .9               | –0.3             | .916             | –0.4           | 5.93             |
| KANSL3 | 0.5            | .941             | –1.3             | .391             | 1.8            | 0.23             |
| KAT6B  | –0.8           | .9               | –0.2             | .941             | –0.6           | 5.28             |
| KAT8   | –1.4           | .862             | –1.1             | .75              | –0.4           | 0.84             |
| KCNFI1 | –0.1           | 992              | –1               | .815             | 0.9            | 5.96             |
| KCTD12 | 0.1            | 982              | –0.6             | .7               | 0.7            | 2.76             |
| KDEL2  | –0.1           | 982              | 0.1              | .993             | –0.1           | 9.56             |
| KHSRP  | 0.1            | 982              | 0.1              | .966             | –0.1           | 9.98             |
| KIF26B | –0.1           | 984              | –1.9             | .632             | 1.8            | 2.86             |
| KIF2A  | –0.7           | .941             | –0.7             | .826             | –0.1           | 1.00             |
| KIF5B  | –0.1           | 997              | 0.2              | .966             | –0.2           | 9.3              |
| KLB    | –0.2           | .969             | –0.2             | .931             | –0.1           | 9.62             |
| KLC1   | –0.2           | 982              | –0.3             | .891             | 0.2            | 9.01             |
| KLF10  | –0.4           | .957             | –0.2             | .973             | –0.3           | 8.25             |
| KLKB1  | –0.2           | 982              | –0.8             | .583             | 0.6            | 3.24             |
| KMT5C  | –0.8           | .857             | –0.3             | .858             | –0.5           | 4.38             |
| KNG1   | –0.1           | 982              | –0.8             | .346             | 0.7            | 1.13             |
| KNTC1  | –0.9           | .9               | –1.4             | .538             | 0.6            | 6.97             |
| KPNB1  | –0.2           | 982              | –0.4             | .808             | 0.3            | 7.19             |
| KREME2 | 0.2            | 982              | –1               | .761             | 1.2            | 3.28             |
| Gene   | Log2FC TAA/TADA | Adjusted P value | Log2FC TBAD/TADA | Adjusted P value | Log2FC TAA/TBAD | Adjusted P value |
|--------|----------------|------------------|------------------|------------------|----------------|------------------|
| KRT1   | 0.5            | 0.903            | 0.1              | 0.998            | 0.5            | 0.561            |
| KRT10  | 0.3            | 0.969            | 0.2              | 0.934            | 0.2            | 0.931            |
| KRT18  | −0.6           | 0.903            | −1.2             | 0.474            | 0.6            | 0.519            |
| KRT19  | −0.9           | 0.857            | −1.3             | 0.225            | 0.4            | 0.638            |
| KRT2   | 0.2            | 0.982            | −0.5             | 0.818            | 0.7            | 0.408            |
| KRT7   | −0.2           | 0.982            | −0.6             | 0.792            | 0.4            | 0.707            |
| KRT73  | 0.4            | 0.941            | 0.4              | 0.847            | 0.1            | 0.989            |
| KRT77  | 0.7            | 0.941            | 0.1              | 0.988            | 0.6            | 0.719            |
| KRT8   | −0.7           | 0.862            | −1.2             | 0.323            | 0.5            | 0.506            |
| KRT9   | 0.2            | 0.982            | −0.1             | 0.973            | 0.2            | 0.818            |
| KSR2   | −0.4           | 0.972            | −1.7             | 0.323            | 1.4            | 1.123            |
| KTN1   | −0.1           | 0.982            | −0.4             | 0.815            | 0.3            | 0.666            |
| KV2D4  | −0.5           | 0.903            | −1.3             | 0.253            | 0.9            | 0.179            |
| KV3O4  | −0.2           | 0.982            | −1.9             | 0.225            | 1.5            | 0.061            |
| KV3O8  | −0.1           | 0.982            | −1.5             | 0.583            | 1.3            | 0.286            |
| KV     | −1             | 0.9              | −1.2             | 0.592            | 1.1            | 0.273            |
| LACTB2 | 0.6            | 0.9              | −1.4             | 0.391            | 0.5            | 0.705            |
| LAMA2  | −0.4           | 0.941            | −0.4             | 0.916            | −0.6           | 0.676            |
| LAMA4  | −0.5           | 0.903            | 0.1              | 0.989            | 0.5            | 0.363            |
| LAMA5  | −0.9           | 0.857            | −0.3             | 0.913            | −0.2           | 0.916            |
| LAMBI  | −0.5           | 0.927            | −1               | 0.492            | 0.5            | 0.529            |
| LAMB2  | −0.9           | 0.857            | 0.1              | 0.953            | −1             | 0.066            |
| LAMC1  | −0.7           | 0.862            | −0.2             | 0.933            | −0.3           | 0.824            |
| LAMP1  | 0.2            | 0.957            | 0.2              | 0.933            | −1.1           | 0.043            |
| LAMP2  | 0.3            | 0.927            | −0.1             | 0.965            | −0.6           | 0.328            |
| LAMTOR1| 0.1            | 0.982            | −0.3             | 0.792            | 0.5            | 0.216            |
| LAMTOR3| 0.3            | 0.944            | −0.1             | 0.989            | 0.3            | 0.581            |
| LANCL1 | −0.6           | 0.9              | −0.1             | 0.965            | 0.2            | 0.84             |
| LAP3   | 0.3            | 0.927            | 0.3              | 0.826            | −0.1           | 0.968            |
| LASPI1 | −0.4           | 0.941            | −0.4             | 0.826            | −0.3           | 0.742            |
| LBP    | −0.7           | 0.9              | −0.8             | 0.421            | 1.1            | 0.023            |
| LBX1   | −0.2           | 0.982            | −0.5             | 0.808            | 0.2            | 0.906            |
| LCAS5L | −0.4           | 0.982            | −0.6             | 0.792            | −0.2           | 0.889            |
| LCPI   | 0.2            | 0.974            | −0.7             | 0.815            | 0.5            | 0.688            |
| LDB3   | −0.8           | 0.862            | 0.6              | 0.916            | −1             | 0.675            |
| LDHA   | −0.4           | 0.9              | −0.3             | 0.917            | 0.4            | 0.591            |
| LDHAL6A| −0.8           | 0.9              | −0.3             | 0.891            | −0.5           | 0.557            |
| LDHB   | −0.2           | 0.974            | −0.4             | 0.792            | −0.1           | 0.99             |
| LDLR   | −0.2           | 0.982            | −1.1             | 0.538            | 0.4            | 0.757            |
| LECT2  | −0.4           | 0.974            | −0.4             | 0.742            | 0.3            | 0.598            |
| LEFTY2 | −0.7           | 0.9              | −0.9             | 0.632            | 0.7            | 0.393            |
| LEMD2  | −0.5           | 0.927            | 0.1              | 0.99             | −0.4           | 0.796            |
| LETM1  | 0.2            | 0.982            | 0.1              | 1.00             | −0.7           | 0.517            |
| LGALS1 | −0.5           | 0.9              | −0.8             | 0.674            | 0.4            | 0.719            |
| LGALS3 | 0.2            | 0.982            | 0.2              | 0.919            | −0.1           | 0.968            |
| LGALS3BP| 0.2           | 0.982            | −0.4             | 0.792            | −0.1           | 0.913            |

(Continued on next page)
| Gene   | Log₂FC TAA/TADA | Adjusted P value | Log₂FC TBAD/TADA | Adjusted P value | Log₂FC TAA/TBAD | Adjusted P value |
|--------|----------------|-----------------|-----------------|-----------------|----------------|-----------------|
| LHPP   | 0.1            | .99             | −0.6            | .583            | 0.7            | 0.11            |
| LIMS1  | −0.4           | .912            | 0.1             | .961            | 0.1            | .968            |
| LIMS2  | −0.5           | .9              | −0.6            | .753            | 0.6            | .365            |
| LMAN2  | −0.1           | .996            | −0.3            | .882            | −0.2           | .887            |
| LMCD1  | −0.8           | .862            | −0.4            | .805            | −0.1           | .962            |
| LMNA   | −0.4           | .927            | −0.2            | .951            | 0.2            | .913            |
| LMB1   | −0.3           | .972            | −0.3            | .906            | −0.6           | .496            |
| LMB2   | −0.4           | .9              | −0.5            | .808            | 0.1            | .957            |
| LMOD1  | −0.8           | .862            | 0.2             | .953            | −0.4           | .688            |
| LoxL1  | −1.2           | .857            | −0.3            | .821            | −0.1           | .912            |
| LPA    | 0.2            | .982            | −0.1            | .973            | −0.7           | .363            |
| LPCAT2 | −0.2           | .972            | 0.3             | .917            | −1.4           | .037            |
| LPP    | −0.8           | .862            | −1.9            | .225            | 2              | .019            |
| LG1    | −0.3           | .941            | −0.4            | .792            | 0.2            | .765            |
| LRPP   | −0.5           | .927            | −0.2            | .951            | −0.7           | .343            |
| LRPI   | −1.9           | .857            | −1.1            | .286            | 0.8            | .152            |
| LRP6   | −0.6           | .947            | −0.3            | .839            | −0.1           | .968            |
| LRPAP1 | −0.5           | .927            | −0.7            | .826            | −1.3           | .308            |
| LRRCA7 | −0.2           | .982            | −0.2            | .961            | −0.4           | .824            |
| LRRCA9 | 1.1            | .857            | −0.5            | .808            | 0.1            | .962            |
| LSM3   | −0.1           | .982            | 0.7             | .826            | −1.6           | .179            |
| LSM6   | 0.2            | .982            | −0.1            | .985            | 0.8            | .313            |
| LSM7   | 0.2            | .982            | −0.9            | .806            | 0.8            | .133            |
| LSM8   | 0.4            | .972            | 0.1             | .973            | 0.1            | .961            |
| LTA4H  | −0.1           | .982            | −0.5            | .895            | 0.6            | .68             |
| LTBP1  | −0.9           | .857            | −0.6            | .826            | 1              | .383            |
| LTBP2  | −0.7           | .862            | 0.1             | .973            | −0.2           | .825            |
| LTBP4  | −1.1           | .857            | 0.1             | .956            | −1             | .075            |
| LTFR   | −0.5           | .947            | −0.5            | .785            | −0.3           | .792            |
| LUM    | 0.3            | .972            | 0.1             | .99             | −1.1           | .106            |
| LV006  | −0.5           | .957            | 0.1             | .993            | −0.5           | .699            |
| LXN    | 0.4            | .969            | −1.1            | .497            | 1.4            | .066            |
| LYPLA1 | 0.9            | .862            | −0.9            | .759            | 0.5            | .734            |
| LYST   | −0.6           | .9              | −1.3            | .526            | 1.6            | .068            |
| LYZ    | −0.6           | .9              | −0.1            | .998            | 0.9            | .286            |
| LZIC   | −0.1           | .982            | −1.9            | .225            | 1.3            | .072            |
| LZTR1  | −0.2           | .982            | −0.4            | .822            | −0.2           | .844            |
| MACFI  | −0.1           | .982            | −0.6            | .586            | 0.6            | .264            |
| MACROH2A1 | −0.2  | .982            | −0.7            | .815            | 0.6            | .688            |
| MAGEE1 | −1.2           | .862            | 0.3             | .905            | −0.3           | .729            |
| MAEGH1 | 0.2            | .982            | −0.5            | .792            | 0.4            | .676            |
| MAMD2  | −0.1           | .997            | 0.6             | .826            | −1.7           | .053            |
| MAOA   | −0.3           | .972            | −0.4            | .819            | 0.6            | .391            |
| MAOB   | −0.3           | .957            | −0.2            | .953            | 0.2            | .917            |
### Supplementary Table III.

| Gene   | Log2FC TAA/ TADA | Adjusted P value | Log2FC TBAD/ TADA | Adjusted P value | Log2FC TAA/ TBAD | Adjusted P value |
|--------|------------------|------------------|-------------------|------------------|-----------------|------------------|
| MAP1B  | −0.3             | 0.972            | −0.6              | 0.792            | 0.3             | 0.785            |
| MAP4   | −0.1             | 0.982            | −0.4              | 0.826            | 0.1             | 0.952            |
| MAPK1  | −0.2             | 0.982            | 0.2               | 0.917            | −0.4            | 0.572            |
| MAPK10 | −1.1             | 0.9              | −0.1              | 0.973            | 0.1             | 0.998            |
| MAPRE1 | −0.1             | 0.982            | −0.7              | 0.474            | 0.6             | 0.206            |
| MARCKS | 0.3              | 0.957            | −0.1              | 0.989            | −1              | 0.543            |
| MAST3  | −0.7             | 0.9              | −0.3              | 0.822            | 0.3             | 0.72             |
| MAT2B  | −0.1             | 0.982            | −0.3              | 0.866            | 0.6             | 0.402            |
| MB     | −0.4             | 0.947            | −0.7              | 0.718            | 0.1             | 0.961            |
| MCAM   | −0.7             | 0.862            | −0.4              | 0.844            | 0.3             | 0.779            |
| MCEMP1 | 1.1              | 0.903            | 0.4               | 0.904            | −0.8            | 0.452            |
| MDFC   | 0.2              | 0.982            | −0.6              | 0.713            | −0.1            | 0.921            |
| MDH1   | −0.1             | 0.982            | −0.1              | 0.998            | 1.1             | 0.526            |
| MDH2   | 0.3              | 0.941            | −1.2              | 0.538            | 1.3             | 0.123            |
| MDM1   | −1.2             | 0.857            | −0.7              | 0.586            | 0.6             | 0.311            |
| ME1    | 0.1              | 0.982            | −0.6              | 0.677            | 0.8             | 0.096            |
| ME2    | −0.2             | 0.982            | −0.1              | 0.986            | −1.2            | 0.172            |
| MECP2  | −0.2             | 0.982            | −0.8              | 0.815            | 0.9             | 0.512            |
| MEGF6  | −0.2             | 0.982            | −0.6              | 0.808            | 0.5             | 0.675            |
| MESD   | 0.3              | 0.969            | −0.1              | 0.956            | −0.1            | 0.968            |
| METRN1 | −0.2             | 0.982            | 0.6               | 0.792            | −0.7            | 0.307            |
| METTL25| −1.1             | 0.9              | −0.4              | 0.853            | 0.6             | 0.438            |
| METTL7A| −0.8             | 0.9              | 0.4               | 0.905            | −0.5            | 0.719            |
| MFAP2  | −1               | 0.862            | −1.8              | 0.364            | 0.8             | 0.553            |
| MFAP4  | −1.1             | 0.862            | −1.1              | 0.553            | 0.4             | 0.76             |
| MFAP5  | 0.1              | 0.997            | 0.2               | 0.951            | −1.2            | 0.128            |
| MFGE8  | −1               | 0.862            | −0.5              | 0.861            | −0.6            | 0.602            |
| MCP    | −1.2             | 0.862            | −0.7              | 0.677            | 0.7             | 0.306            |
| MGST3  | −0.1             | 0.982            | −0.2              | 0.951            | −0.8            | 0.363            |
| MIF    | −0.5             | 0.9              | −0.6              | 0.834            | −0.7            | 0.587            |
| MINPP1 | 1.1              | 0.862            | −0.4              | 0.899            | 0.3             | 0.857            |
| MLH1   | 0.8              | 0.9              | −0.4              | 0.818            | −0.1            | 0.91             |
| MLKL   | −0.6             | 0.927            | −0.3              | 0.914            | 1.4             | 0.083            |
| MLTK   | −0.3             | 0.957            | −0.4              | 0.899            | 1.1             | 0.172            |
| MMP2   | 0.1              | 0.997            | −0.8              | 0.744            | 0.3             | 0.829            |
| MMP9   | −0.2             | 0.982            | 0.1               | 0.973            | −0.4            | 0.653            |
| MMRN1  | 0.6              | 0.9              | −0.1              | 0.978            | 0.1             | 0.953            |
| MOC52  | −0.6             | 0.864            | 0.4               | 0.891            | −0.6            | 0.624            |
| MOS    | 0.1              | 0.99             | 1.1               | 0.438            | −0.6            | 0.526            |
| MPDZ   | 0.4              | 0.927            | −0.5              | 0.759            | −0.1            | 0.917            |
| MPO    | −0.4             | 0.966            | −0.4              | 0.933            | 0.4             | 0.835            |
| MPST   | −0.2             | 0.972            | −0.8              | 0.642            | 1.2             | 0.066            |
| MRC2   | 0.1              | 0.982            | 1                 | 0.583            | −1.4            | 0.071            |
| MRVII  | −0.2             | 0.982            | −1.2              | 0.225            | 1               | 0.071            |
| MSN    | −0.3             | 0.927            | −0.2              | 0.951            | 0.3             | 0.818            |
| MSRB3  | −0.5             | 0.941            | 0.1               | 0.966            | −0.3            | 0.8              |

(Continued on next page)
### Supplementary Table III. Continued.

| Gene   | Log₂FC TAA/TADA | Adjusted P value | Log₂FC TBAD/TADA | Adjusted P value | Log₂FC TAA/TBAD | Adjusted P value |
|--------|------------------|------------------|------------------|------------------|------------------|------------------|
| MST1   | 0.2              | .982             | −0.1             | .962             | −0.2             | .705             |
| MT-CO2 | −0.7             | .9               | −1.4             | .346             | 1                | .247             |
| MTHFD1 | −0.1             | .988             | 0.3              | .917             | −0.2             | .931             |
| MTPN   | −0.2             | .972             | −0.5             | .84              | −0.3             | .84              |
| MVP    | −0.2             | .965             | −0.3             | .892             | 0.3              | .797             |
| MYADM  | −0.7             | .9               | −0.7             | .48              | 0.6              | .286             |
| MYCBP2 | −0.7             | .941             | −0.2             | .917             | −0.1             | .957             |
| MYDG1F| 0.3              | .972             | 0.6              | .815             | −1.3             | .115             |
| MYH10  | −0.9             | .862             | −1.5             | .674             | 0.8              | .654             |
| MYH11  | −1.2             | .857             | −0.3             | .913             | 0.6              | .549             |
| MYH13  | −0.6             | .912             | −0.2             | .956             | −0.8             | .306             |
| MYH14  | −0.7             | .9               | −0.2             | .951             | 1                | .157             |
| MYH2   | −0.6             | .9               | −0.4             | .898             | −0.3             | .862             |
| MYH9   | −0.2             | .982             | −0.2             | .947             | −0.6             | .59              |
| MYL6   | −0.9             | .857             | −0.3             | .899             | −0.3             | .791             |
| MYL6B  | −1.1             | .857             | 0.3              | .891             | −0.4             | .563             |
| MYL9   | −0.7             | .878             | −0.4             | .826             | −0.5             | .457             |
| MYLK   | −0.5             | .9               | −0.3             | .899             | −0.8             | .35              |
| MYO18A | 0.2              | .982             | −0.4             | .815             | −0.3             | .787             |
| MYOIC  | −0.6             | .878             | −0.4             | .826             | −0.2             | .84              |
| MYO1D  | −0.3             | .957             | −0.5             | .899             | 0.6              | .707             |
| MYOSB  | −0.3             | .982             | −0.2             | .919             | −0.5             | .526             |
| MYOF   | −0.2             | .982             | −0.2             | .951             | −0.2             | .862             |
| MYOM2  | −0.2             | .982             | 0.5              | .895             | −0.7             | .654             |
| MYOM3  | −0.8             | .9               | 0.1              | .974             | −0.3             | .787             |
| NAA15  | −1.5             | .903             | −1.2             | .474             | 1                | .179             |
| NAGK   | −0.1             | .982             | −0.8             | .674             | 0.1              | .97              |
| NAMPT  | −0.4             | .941             | −3.5             | .323             | 2.1              | .307             |
| NAPL1  | 0.1              | .982             | −0.5             | .67              | 0.4              | .343             |
| NAPL4  | −0.2             | .965             | 0.4              | .826             | −0.8             | .283             |
| NAPA   | 0.3              | .957             | −0.4             | .904             | 0.5              | .722             |
| NAPG   | −0.3             | .969             | −0.3             | .808             | 0.2              | .855             |
| NAPRT  | −0.4             | .941             | −0.2             | .937             | 0.4              | .558             |
| NARS1  | 0.2              | .982             | −0.2             | .933             | −0.1             | .951             |
| NASP   | −0.5             | .927             | −0.7             | .78              | 0.3              | .84              |
| NAV1   | −0.4             | .972             | 0.2              | .951             | −0.1             | .99              |
| NAV2   | 0.1              | .982             | 0.5              | .822             | −0.9             | 21               |
| NAXE   | −0.8             | .889             | 0.9              | .755             | −1.2             | .198             |
| NCKAP1 | −0.4             | .941             | −1.1             | .679             | 1.1              | .28              |
| NCL    | −0.3             | .957             | −0.9             | .668             | 0.1              | .962             |
| NCOA1  | 1.2              | .862             | 0.2              | .945             | −0.6             | .523             |
| NDRG1  | −0.2             | .982             | −0.5             | .789             | 0.3              | .8               |
| NDRG3  | −0.2             | .982             | 0.8              | .808             | 0.5              | .734             |
| NDUFA10| −0.4             | .947             | −0.3             | .899             | 0.1              | .961             |
| NDUFA13| −0.2             | .982             | −0.4             | .802             | 0.3              | .712             |
| NDUFA4 | −0.2             | .982             | −1.1             | .459             | 0.8              | .341             |
| Gene     | Log2FC TAA/ TADA | Adjusted P value | Log2FC TBAD/ TADA | Adjusted P value | Log2FC TAA/ TBAD | Adjusted P value |
|----------|------------------|------------------|-------------------|------------------|------------------|------------------|
| NDUFA5   | 0.5              | 0.9              | -0.3              | 0.917            | 0.1              | 0.962            |
| NDUFA6   | 0.2              | 0.966            | -0.3              | 0.917            | 0.2              | 0.933            |
| NDUFB11  | -0.1             | 0.982            | 0.3               | 0.862            | 0.3              | 0.752            |
| NDUFB4   | -0.3             | 0.974            | -0.2              | 0.934            | 0.3              | 0.585            |
| NDUFS1   | 0.3              | 0.972            | -0.2              | 0.952            | 0.1              | 0.968            |
| NDUFS3   | -0.2             | 0.982            | -0.4              | 0.866            | 0.1              | 0.931            |
| NDUFS8   | 0.2              | 0.966            | -0.5              | 0.821            | 0.7              | 0.363            |
| NDUVF2   | -0.1             | 0.982            | -0.6              | 0.818            | 0.5              | 0.705            |
| NECAP2   | -0.4             | 0.982            | -0.3              | 0.815            | 0.5              | 0.296            |
| NEDD8    | -0.9             | 0.862            | -0.5              | 0.755            | 0.5              | 0.463            |
| NEGR1    | -0.6             | 0.9              | -0.1              | 0.985            | -0.3             | 0.898            |
| NENF     | -0.6             | 0.903            | -1.6              | 0.225            | 0.8              | 0.375            |
| NEXN     | -0.2             | 0.982            | -0.4              | 0.826            | -0.3             | 0.822            |
| NHS1     | 0.2              | 0.982            | -0.5              | 0.826            | -0.1             | 0.955            |
| NIBAN    | -0.6             | 0.9              | -0.3              | 0.893            | 0.1              | 0.933            |
| NIB1     | 0.1              | 0.982            | -0.8              | 0.826            | 1                | 0.557            |
| NID1     | -0.4             | 0.9              | -0.2              | 0.942            | -0.4             | 0.496            |
| NID2     | -0.5             | 0.9              | -0.6              | 0.792            | 0.7              | 0.452            |
| NIT2     | -0.3             | 0.941            | -0.5              | 0.75             | 0.1              | 0.943            |
| NKX1-2   | 0.3              | 0.982            | -0.8              | 0.519            | 0.4              | 0.658            |
| NLR5C4   | -0.8             | 0.9              | -0.6              | 0.609            | 0.3              | 0.59             |
| NLTP     | 0.5              | 0.862            | -0.6              | 0.822            | 0.8              | 0.451            |
| NME1     | 0.3              | 0.972            | -0.5              | 0.822            | -0.3             | 0.84             |
| NNMT     | -0.2             | 0.982            | -0.1              | 0.985            | 0.5              | 0.262            |
| NOLC1    | 0.4              | 0.972            | -0.5              | 0.822            | 0.8              | 0.363            |
| NOTCH3   | -0.6             | 0.9              | -0.3              | 0.895            | 0.2              | 0.878            |
| NPC2     | 0.1              | 0.982            | 0.9               | 0.792            | -0.6             | 0.729            |
| NPEPPS   | -0.4             | 0.903            | 0.1               | 0.994            | -0.7             | 0.383            |
| NPM1     | 0.1              | 0.982            | -0.4              | 0.866            | 0.5              | 0.663            |
| NPNT     | -1.2             | 0.857            | -0.7              | 0.526            | 0.4              | 0.59             |
| NPTN     | -0.5             | 0.9              | -0.2              | 0.899            | 0.3              | 0.657            |
| NQO2     | -0.5             | 0.903            | 0.2               | 0.933            | -1.4             | 0.044            |
| NRAP     | -0.9             | 0.862            | -0.3              | 0.891            | -0.3             | 0.779            |
| NSF      | 0.4              | 0.903            | -0.6              | 0.77             | 0.2              | 0.913            |
| NSFL1C   | 0.1              | 0.982            | -0.8              | 0.69             | -0.1             | 0.945            |
| NSMCE3   | -0.3             | 0.972            | 0.3               | 0.899            | 0.2              | 0.841            |
| NT5E     | -0.3             | 0.972            | -0.5              | 0.792            | 0.5              | 0.463            |
| NUCB1    | 0.2              | 0.969            | -1.1              | 0.346            | 0.9              | 0.164            |
| NUCB2    | -0.1             | 0.988            | -0.1              | 0.989            | -0.3             | 0.846            |
| NUCKS1   | -0.9             | 0.9              | -0.2              | 0.891            | 0.4              | 0.48             |
| NUDC     | -0.5             | 0.9              | -0.4              | 0.818            | 0.4              | 0.63             |
| NUDT2    | -0.3             | 0.946            | -1.5              | 0.468            | 0.7              | 0.572            |
| NUDT5    | -0.3             | 0.944            | -0.4              | 0.821            | -0.2             | 0.862            |
| NUTF2    | -0.2             | 0.982            | -0.3              | 0.848            | 0.1              | 1.00             |
| OAF      | -0.4             | 0.982            | -1                | 0.323            | 0.8              | 0.179            |
| OAT      | 0.1              | 0.996            | -0.3              | 0.826            | 0.1              | 0.863            |
### Supplementary Table III. Continued.

| Gene       | Log₂FC TAA/TADA | Adjusted P value | Log₂FC TBAD/TADA | Adjusted P value | Log₂FC TAA/TBAD | Adjusted P value |
|------------|-----------------|------------------|------------------|------------------|-----------------|------------------|
| OBSCN      | −2              | .857             | −0.1             | .989             | −0.3            | .901             |
| OGDH       | 0.1             | .982             | 0.1              | .993             | −0.1            | .998             |
| OCN        | −0.6            | .903             | −1               | .815             | −1.1            | .466             |
| OLA1       | −0.1            | .982             | −0.1             | .973             | 0.2             | .862             |
| OLFM1      | −0.5            | .946             | −0.9             | .683             | 0.3             | .785             |
| OLFML1     | 0.2             | .982             | −0.3             | .792             | 0.2             | .707             |
| OLFML3     | −0.4            | .965             | −1.3             | .502             | 0.9             | .394             |
| OMD        | 0.2             | .982             | −0.3             | .866             | 0.5             | .523             |
| OPTN       | 0.1             | .99              | −0.7             | .773             | 0.4             | .75              |
| OR10T2     | −1.1            | .862             | −0.4             | .862             | 0.6             | .613             |
| OR4C3      | −0.2            | .982             | −0.4             | .853             | 0.4             | .681             |
| OR51Q1     | −1.8            | .857             | −0.1             | .975             | −1              | .342             |
| OR56B4     | −0.6            | .941             | 0.3              | .917             | −0.5            | .742             |
| ORM1       | −0.4            | .941             | −1.7             | .583             | −0.2            | .945             |
| ORM2       | −0.3            | .941             | −0.3             | .933             | −0.3            | .863             |
| OSTF1      | 0.5             | .9               | −0.9             | .452             | 0.6             | .343             |
| OTUB1      | −0.4            | .941             | −1.3             | .225             | 1               | .053             |
| OVOS2      | 0.5             | .903             | −0.2             | .904             | 0.6             | .239             |
| OXCT1      | 0.2             | .982             | −0.6             | .784             | 0.2             | .825             |
| OXSR1      | 0.2             | .972             | −0.6             | .792             | 1.1             | .123             |
| PA4HB      | 0.2             | .982             | −0.1             | .985             | 0.2             | .813             |
| PA2G4      | −0.1            | .997             | 0.4              | .792             | −0.2            | .795             |
| PACSIN2    | −0.5            | .9               | −0.6             | .985             | 0.1             | .898             |
| PAFAH1B1   | −0.1            | .982             | −0.3             | .917             | 0.2             | .825             |
| PAFAH1B2   | 0.1             | .982             | −0.5             | .762             | −0.1            | .979             |
| PAFAH1B3   | 0.7             | .9               | −0.2             | .911             | 0.1             | .934             |
| PAICS      | −0.2            | .972             | −0.7             | .492             | 0.8             | .093             |
| PALLD      | −0.4            | .903             | −0.5             | .815             | 1.1             | .08              |
| PARK7      | −0.2            | .947             | 0.2              | .951             | −0.4            | .685             |
| PARVA      | −0.9            | .857             | −0.3             | .826             | −0.1            | .945             |
| PAWR       | −0.4            | .947             | −0.5             | .583             | 0.3             | .493             |
| PBXIP1     | −0.8            | .9               | −0.6             | .766             | −0.4            | .63              |
| PCD1       | −0.4            | .959             | −0.2             | .919             | −0.2            | .915             |
| PCBP1      | 0.1             | .997             | 0.5              | .847             | −1.3            | .145             |
| PCBP2      | 0.4             | .927             | −0.5             | .826             | 0.1             | .949             |
| PCDHB14    | −0.4            | .941             | −0.1             | .995             | 0.1             | .984             |
| PCMT1      | 0.1             | .992             | 0.1              | .988             | 0.3             | .682             |
| PCOLCE     | 0.2             | .966             | −0.6             | .789             | 0.2             | .846             |
| PCOLCE2    | 0.1             | .982             | −0.5             | .586             | 0.6             | .197             |
| PCYOX1     | −0.3            | .941             | −0.1             | .942             | 0.3             | .602             |
| PCYT2      | 0.5             | .927             | 0.2              | .933             | −0.2            | .926             |
| PDAP1      | −0.5            | .957             | −0.6             | .68              | 0.3             | .688             |
| PDCD10     | 0.5             | .9               | 0.4              | .826             | 0.1             | .975             |
| PDCD5      | 0.2             | .982             | 0.1              | .989             | −0.5            | .705             |
| PDCD6      | −0.5            | .9               | 0.3              | .872             | 0.3             | .811             |
| PDCD6IP    | 0.1             | .99              | −0.2             | .899             | 0.4             | .647             |
### Supplementary Table III. Continued.

| Gene       | Log₂FC TAA/TADA | Adjusted P value | Log₂FC TBAD/TADA | Adjusted P value | Log₂FC TAA/TBAD | Adjusted P value |
|------------|-----------------|------------------|------------------|------------------|-----------------|------------------|
| PDCD7      | 1.9             | 0.3              | 0.891            | 0.3              | 0.785           |
| PDGFC      | 0.3             | 0.7              | 0.927            | 0.3              | 0.826           | 0.3              | 0.785 |
| PDHA1      | 0.7             | 0.9              | 0.677            | 0.1              | 0.972           |
| PDHB       | 0.4             | 0.9              | 0.98             | 0.6              | 0.684           |
| Pdia2      | 0.4             | 0.9              | 0.989            | 0.7              | 0.367           |
| Pdia3      | 0.1             | 0.9              | 0.917            | 0.1              | 0.962           |
| Pdia4      | 0.2             | 0.9              | 0.694            | 0.7              | 0.561           |
| Pdia5      | 0.5             | 0.9              | 0.942            | 0.2              | 0.763           |
| Pdia6      | 0.2             | 0.9              | 0.821            | 0.5              | 0.388           |
| Pdlm1      | 0.1             | 0.9              | 0.825            | 0.2              | 0.855           |
| Pdlm2      | 0.1             | 0.9              | 0.792            | 0.6              | 0.261           |
| Pdlm3      | 0.1             | 0.9              | 0.792            | 0.1              | 1.00            |
| Pdlm4      | 0.1             | 0.9              | 0.821            | 0.2              | 0.87            |
| Pdlm5      | 0.1             | 0.9              | 0.792            | 0.3              | 0.825           |
| Pdlm7      | 0.1             | 0.9              | 0.826            | 0.3              | 0.77            |
| Pdss1      | 0.1             | 0.9              | 0.815            | 0.4              | 0.757           |
| Pdxk       | 0.1             | 0.9              | 0.589            | 0.3              | 0.654           |
| Pea15      | 0.1             | 0.9              | 0.457            | 0.6              | 0.28            |
| Peb1       | 0.1             | 0.9              | 0.755            | 0.2              | 0.82            |
| Pef1       | 0.1             | 0.9              | 0.848            | 0.1              | 0.945           |
| Pefp       | 0.1             | 0.9              | 0.583            | 0.3              | 0.691           |
| Pf4        | 0.1             | 0.9              | 0.674            | 0.5              | 0.515           |
| Pfdn1      | 0.1             | 0.9              | 0.225            | 0.7              | 0.05            |
| Pfdn2      | 0.1             | 0.9              | 0.899            | 0.3              | 0.898           |
| Pfdn5      | 0.1             | 0.9              | 0.822            | 0.2              | 0.865           |
| Pfkl       | 0.1             | 0.9              | 0.789            | 0.5              | 0.607           |
| Pfk1       | 0.1             | 0.9              | 0.762            | 0.4              | 0.509           |
| Pfkp       | 0.1             | 0.9              | 0.993            | 0.2              | 0.873           |
| Pfnt       | 0.1             | 0.9              | 0.932            | 0.6              | 0.483           |
| Pfnt2      | 0.1             | 0.9              | 0.899            | 0.8              | 0.262           |
| Pgama1     | 0.1             | 0.9              | 0.934            | 0.1              | 0.982           |
| Pgd        | 0.1             | 0.9              | 0.989            | 0.4              | 0.457           |
| Pck1       | 0.1             | 0.9              | 0.789            | 0.1              | 0.998           |
| Pck2       | 0.1             | 0.9              | 0.962            | 0.2              | 0.827           |
| Pcls       | 0.1             | 0.9              | 0.872            | 0.1              | 0.968           |
| Plgry2     | 0.1             | 0.9              | 0.75             | 0.3              | 0.839           |
| Pgm1       | 0.1             | 0.9              | 0.474            | 0.6              | 0.185           |
| Pgm2       | 0.1             | 0.9              | 0.668            | 0.6              | 0.324           |
| Pgm3       | 0.1             | 0.9              | 0.892            | 0.1              | 0.851           |
| Pgm5       | 0.1             | 0.9              | 0.704            | 0.6              | 0.372           |
| Pgp        | 0.1             | 0.9              | 0.853            | 0.4              | 0.567           |
| Prm1       | 0.1             | 0.9              | 0.808            | 0.6              | 0.525           |
| Phb        | 0.1             | 0.9              | 0.67             | 0.3              | 0.797           |
| Phb2       | 0.1             | 0.9              | 0.847            | 0.3              | 0.707           |
| Phgdh      | 0.1             | 0.9              | 0.792            | 0.4              | 0.463           |
| Phpt1      | 0.1             | 0.9              | 0.753            | 0.4              | 0.462           |
| Gene       | Log₂FC TAA/TADA | Adjusted P value | Log₂FC TBAD/TADA | Adjusted P value | Log₂FC TAA/TBAD | Adjusted P value |
|------------|----------------|------------------|------------------|------------------|----------------|------------------|
| PI4KA      | −0.9           | 0.878            | −0.7             | 0.677            | −0.1           | 0.958            |
| PIK3C3     | −0.5           | 0.941            | −0.3             | 0.826            | 0.1            | 0.966            |
| PIMREG     | −0.7           | 0.9              | −1               | 0.583            | 0.2            | 0.887            |
| PITHD1     | −0.1           | 0.982            | −0.5             | 0.826            | 0.1            | 0.983            |
| PITPNB     | −0.5           | 0.927            | −1.3             | 0.421            | 0.6            | 0.505            |
| PIRRM1     | −0.8           | 0.9              | −0.5             | 0.765            | 0.4            | 0.515            |
| PKD2       | −0.8           | 0.862            | −0.4             | 0.832            | −0.1           | 0.957            |
| PKM        | −0.3           | 0.957            | −0.4             | 0.866            | −0.4           | 0.729            |
| PKP4       | −0.9           | 0.966            | −0.1             | 0.973            | −0.8           | 0.346            |
| PLA2G2A    | −0.9           | 0.862            | −0.3             | 0.821            | 0.1            | 0.916            |
| PLAUR      | 0.5            | 0.972            | 0.9              | 0.891            | −1.7           | 0.447            |
| PLCD1      | −0.7           | 0.9              | −0.3             | 0.895            | −0.6           | 0.518            |
| PLCH1      | −0.2           | 0.982            | 0.2              | 0.962            | 0.3            | 0.902            |
| PLD3       | 0.1            | 0.984            | −0.3             | 0.906            | −0.4           | 0.674            |
| PLEC       | 0.3            | 0.957            | −0.2             | 0.917            | 0.1            | 0.945            |
| PLG        | 0.2            | 0.982            | −0.6             | 0.792            | 0.7            | 0.4              |
| PLIN1      | −0.5           | 0.912            | −0.2             | 0.939            | 0.4            | 0.571            |
| PLIN3      | −0.1           | 0.982            | −0.1             | 0.992            | 0.2            | 0.818            |
| PLOD1      | 0.2            | 0.982            | −0.6             | 0.759            | 0.2            | 0.863            |
| PLP2       | −0.8           | 0.9              | −0.7             | 0.657            | 0.6            | 0.368            |
| PLS3       | −0.5           | 0.9              | 0.3              | 0.917            | −0.1           | 0.945            |
| PLTP       | 0.5            | 0.927            | −0.5             | 0.895            | −0.4           | 0.812            |
| PLXDC2     | −0.3           | 0.969            | −0.5             | 0.792            | −0.1           | 0.998            |
| PLXNB2     | −0.1           | 0.982            | −0.5             | 0.826            | 0.9            | 0.234            |
| PNP        | 0.4            | 0.929            | −0.9             | 0.452            | 0.7            | 0.28             |
| PODN       | 0.4            | 0.927            | −0.1             | 0.993            | −0.1           | 0.974            |
| POLD1      | 0.5            | 0.974            | −0.2             | 0.933            | 0.5            | 0.441            |
| PON1       | 0.3            | 0.967            | −0.6             | 0.703            | 0.9            | 0.08             |
| POSTN      | 0.5            | 0.927            | 1.4              | 0.761            | −0.9           | 0.657            |
| POTEF      | −0.4           | 0.966            | −0.9             | 0.614            | 1.2            | 0.093            |
| POTEI      | −0.7           | 0.9              | −0.2             | 0.952            | 0.7            | 0.493            |
| POTEJ      | −0.4           | 0.941            | −1.2             | 0.421            | 0.9            | 0.258            |
| PPA1       | −0.2           | 0.972            | −1               | 0.583            | 0.4            | 0.774            |
| PPA2       | 0.3            | 0.941            | −1               | 0.552            | 0.6            | 0.484            |
| PPBP       | 0.3            | 0.969            | −0.7             | 0.6              | 0.5            | 0.483            |
| PPCS       | 0.1            | 0.982            | −0.1             | 0.973            | 0.4            | 0.588            |
| PPIBP1     | 0.4            | 0.927            | 0.2              | 0.953            | 0.2            | 0.899            |
| PPIA       | −0.3           | 0.947            | −0.4             | 0.826            | 0.4            | 0.587            |
| PPIB       | 0.1            | 0.984            | −0.2             | 0.957            | 0.5            | 0.451            |
| PPC        | 0.3            | 0.959            | −0.4             | 0.792            | 0.2            | 0.862            |
| PPM1F      | 0.2            | 0.982            | −0.2             | 0.933            | 0.2            | 0.824            |
| PPME1      | 0.4            | 0.972            | 0.2              | 0.917            | 0.1            | 0.945            |
| PPP1CB     | −0.7           | 0.9              | 0.5              | 0.824            | −0.4           | 0.728            |
| PPP1CC     | −0.1           | 0.982            | −0.2             | 0.953            | 0.5            | 0.688            |
| PPP1R12A   | −0.1           | 0.982            | −0.2             | 0.932            | −0.5           | 0.526            |
| PPP1R12B   | −1             | 0.857            | 0.3              | 0.951            | −0.4           | 0.862            |
### Supplementary Table III. Continued.

| Gene   | Log₂FC TAA/ TADA | Adjusted P value | Log₂FC TBAD/ TADA | Adjusted P value | Log₂FC TAA/ TBAD | Adjusted P value |
|--------|------------------|------------------|-------------------|------------------|------------------|------------------|
| PPP1R14A | −1.1             | 0.857            | −0.1              | 0.942            | −0.1             | 1.00             |
| PPP1R7  | 0.3              | 0.969            | −0.7              | 0.759            | −0.4             | 0.688            |
| PPP2R1A | −0.3             | 0.941            | −0.7              | 0.762            | −0.4             | 0.681            |
| PPP6R3  | −0.6             | 0.969            | 0.3               | 0.917            | 0.1              | 0.963            |
| PPT1    | 0.3              | 0.969            | −0.1              | 0.934            | −0.2             | 0.825            |
| PRAF2   | −0.1             | 0.982            | −1                | 0.821            | 0.4              | 0.863            |
| PRDBP   | −1               | 0.862            | −0.4              | 0.821            | 0.6              | 0.343            |
| PRDX1   | −0.2             | 0.974            | −0.3              | 0.891            | 0.2              | 0.855            |
| PRDX2   | 0.3              | 0.903            | −0.4              | 0.911            | −0.7             | 0.506            |
| PRDX3   | 0.3              | 0.93             | −0.4              | 0.746            | 0.3              | 0.602            |
| PRDX4   | 0.4              | 0.957            | −0.4              | 0.759            | 0.7              | 0.083            |
| PRDX5   | 0.1              | 0.982            | −0.2              | 0.826            | 0.4              | 0.262            |
| PRDX6   | −0.2             | 0.941            | 0.4               | 0.862            | −0.1             | 0.988            |
| PRELP   | −0.1             | 0.982            | −0.3              | 0.808            | 0.3              | 0.402            |
| PRKACA  | −0.4             | 0.903            | −0.4              | 0.703            | 0.2              | 0.697            |
| PRKACB  | −1.1             | 0.862            | −0.9              | 0.497            | 0.8              | 0.198            |
| PRKAR1A | −0.1             | 0.982            | −0.4              | 0.802            | 0.1              | 1.00             |
| PRKAR2A | −0.6             | 0.9              | −0.6              | 0.821            | −0.6             | 0.591            |
| PRKCB   | −1.6             | 0.9              | −0.4              | 0.762            | 0.3              | 0.585            |
| PRKCSH  | 0.1              | 0.982            | −0.4              | 0.826            | −0.2             | 0.863            |
| PRKGI   | −0.9             | 0.857            | −1.5              | 0.769            | −0.1             | 0.998            |
| PROC    | 0.3              | 0.954            | −0.4              | 0.792            | 0.5              | 0.441            |
| PROS1   | −0.2             | 0.974            | −0.3              | 0.911            | −0.7             | 0.344            |
| PROSC   | 0.1              | 0.982            | −0.7              | 0.526            | 0.9              | 0.057            |
| PROX2   | −0.6             | 0.9              | −1                | 0.288            | 0.9              | 0.105            |
| PRPF4B  | 0.3              | 0.981            | −0.3              | 0.937            | 0.3              | 0.834            |
| PRPS1   | 0.2              | 0.972            | −0.3              | 0.917            | −0.4             | 0.704            |
| PRR36   | −0.3             | 0.981            | 0.2               | 0.933            | 0.1              | 0.879            |
| PRSS23  | 0.2              | 0.982            | 0.1               | 0.965            | 0.2              | 0.894            |
| PRTG    | 0.7              | 0.9              | −0.3              | 0.9              | −0.1             | 0.998            |
| PRTN3   | −0.3             | 0.982            | 0.2               | 0.942            | 0.1              | 0.991            |
| PRXL2A  | −0.7             | 0.878            | −0.9              | 0.638            | 1.6              | 0.037            |
| PSAP    | −0.4             | 0.903            | 0.5               | 0.826            | −0.7             | 0.452            |
| PSIP1   | 0.1              | 0.982            | −1.2              | 0.286            | 0.6              | 0.416            |
| PSMA1   | −0.1             | 0.984            | −0.4              | 0.792            | 0.1              | 0.979            |
| PSMA2   | 0.1              | 0.982            | −0.3              | 0.826            | 0.4              | 0.544            |
| PSMA3   | 0.2              | 0.969            | −0.7              | 0.583            | 0.7              | 0.234            |
| PSMA4   | 0.1              | 0.982            | −0.4              | 0.792            | 0.5              | 0.366            |
| PSMA5   | 0.1              | 0.982            | −0.2              | 0.899            | 0.4              | 0.497            |
| PSMA6   | −0.1             | 0.982            | −0.6              | 0.587            | 0.6              | 0.153            |
| PSMA7   | −0.4             | 0.903            | −0.6              | 0.526            | 0.7              | 0.123            |
| PSMB1   | −0.2             | 0.976            | −0.7              | 0.327            | 0.7              | 0.083            |
| PSMB2   | −0.1             | 0.982            | −0.6              | 0.769            | 0.2              | 0.912            |
| PSMB3   | 0.1              | 0.982            | −0.5              | 0.792            | 0.3              | 0.728            |
| PSMB4   | −0.2             | 0.974            | −0.6              | 0.776            | 0.5              | 0.499            |
| PSMB5   | −0.1             | 0.984            | −0.8              | 0.474            | 0.9              | 0.107            |

(Continued on next page)
### Supplementary Table III. Continued.

| Gene    | Log₂FC TAA/ TADA | Adjusted P value | Log₂FC TBAD/ TADA | Adjusted P value | Log₂FC TAA/ TBAD | Adjusted P value |
|---------|------------------|------------------|-------------------|------------------|------------------|------------------|
| PSMB6   | −0.1             | 0.997            | −0.7              | 0.592            | 0.5              | 4.09             |
| PSMB7   | −0.1             | 0.982            | −0.7              | 0.677            | 0.6              | 3.42             |
| PSMB8   | −0.8             | 0.878            | −0.5              | 0.718            | 0.5              | 3.5              |
| PSMB9   | 0.1              | 0.982            | −0.4              | 0.917            | 0.3              | 0.878            |
| PSMC1   | 0.2              | 0.982            | −1                | 0.583            | 0.2              | 0.898            |
| PSMC2   | −0.1             | 0.982            | −0.6              | 0.674            | 0.7              | 21               |
| PSMC3   | 0.2              | 0.982            | −0.2              | 0.917            | 0.4              | 0.657            |
| PSMC4   | −0.2             | 0.982            | −0.6              | 0.776            | 0.7              | 0.286            |
| PSMC5   | 0.2              | 0.982            | −0.3              | 0.848            | 0.1              | 0.945            |
| PSMC6   | 0.4              | 0.927            | −0.3              | 0.826            | 0.3              | 0.763            |
| PSMC11  | −0.1             | 0.982            | −0.3              | 0.895            | 0.2              | 0.888            |
| PSMC12  | −0.2             | 0.982            | −0.3              | 0.862            | 0.3              | 0.811            |
| PSMC13  | −0.1             | 0.992            | −0.4              | 0.792            | 0.4              | 0.537            |
| PSMC14  | 0.2              | 0.982            | −0.4              | 0.895            | 0.2              | 0.906            |
| PSMC15  | 0.2              | 0.982            | −0.5              | 0.792            | 0.5              | 0.526            |
| PSMC16  | −0.1             | 0.982            | −0.6              | 0.632            | 0.7              | 0.133            |
| PSMC17  | −0.5             | 0.9              | −0.1              | 0.993            | 0.2              | 0.863            |
| PSMC18  | 0.1              | 0.982            | −0.2              | 0.933            | 0.1              | 0.945            |
| PSMD1   | −0.1             | 0.982            | −0.4              | 0.847            | −0.2             | 0.836            |
| PSMD2   | 0.2              | 0.982            | −0.5              | 0.792            | 0.5              | 0.526            |
| PSMD3   | −0.1             | 0.982            | −0.6              | 0.632            | 0.7              | 0.133            |
| PSMD4   | −0.5             | 0.9              | −0.3              | 0.848            | 0.3              | 0.631            |
| PSMD7   | −0.2             | 0.982            | −0.4              | 0.847            | −0.2             | 0.836            |
| PSMD9   | −0.5             | 0.9              | −0.3              | 0.808            | 0.4              | 0.707            |
| PSMF1   | 0.3              | 0.927            | −0.9              | 0.323            | 0.5              | 0.376            |
| PSMF2   | −0.4             | 0.927            | −0.4              | 0.75             | 0.5              | 0.286            |
| PTBPI   | 0.2              | 0.982            | −0.4              | 0.815            | 0.7              | 0.185            |
| PTGES3  | −0.4             | 0.941            | −0.4              | 0.816            | 0.1              | 0.994            |
| PTGS1   | −0.9             | 0.857            | −0.5              | 0.782            | 0.6              | 0.328            |
| PTGRI   | −0.1             | 0.982            | −0.6              | 0.759            | 0.2              | 0.818            |
| PTK2    | −0.5             | 0.9              | −0.1              | 0.978            | −0.8             | 0.185            |
| PTMA    | −0.2             | 0.974            | 0.4               | 0.866            | −0.5             | 0.675            |
| PTMS    | −0.4             | 0.903            | −0.7              | 0.674            | 0.2              | 0.835            |
| PTPA    | −0.1             | 0.984            | −0.3              | 0.862            | 0.1              | 0.925            |
| PTPN1   | −0.2             | 0.972            | −0.7              | 0.674            | 0.3              | 0.784            |
| PTPN3   | −0.3             | 0.982            | −0.6              | 0.647            | 0.5              | 0.301            |
| PTPN4   | −1               | 0.862            | −0.1              | 0.996            | −0.2             | 0.814            |
| PTRF    | −0.4             | 0.941            | 0.6               | 0.792            | −0.9             | 0.307            |
| PURA    | −0.5             | 0.9              | 0.2               | 0.942            | −1.2             | 0.137            |
| PUS10   | −0.7             | 0.944            | −0.1              | 0.989            | −0.4             | 0.707            |
| PXDN    | −0.4             | 0.942            | −0.3              | 0.865            | −0.2             | 0.835            |
| PYGB    | −0.5             | 0.903            | −1.1              | 0.789            | 0.5              | 0.825            |
| PYGL    | −0.3             | 0.969            | −0.5              | 0.815            | 0.2              | 0.916            |
| PZP     | −0.3             | 0.974            | −0.5              | 0.792            | 0.1              | 0.979            |
| QARS1   | 0.6              | 0.9              | 0.3               | 0.861            | −0.5             | 0.441            |
| QDPR    | −0.3             | 0.957            | 0.4               | 0.869            | −0.7             | 0.497            |
| QSOX1   | −0.3             | 0.941            | 0.1               | 0.961            | 0.5              | 0.532            |
| QTRT1   | −0.4             | 0.966            | −0.7              | 0.596            | 0.4              | 0.497            |
### Supplementary Table III. Continued.

| Gene       | Log2FC TAA/TADA | Adjusted P value | Log2FC TBAD/TADA | Adjusted P value | Log2FC TAA/TBAD | Adjusted P value |
|------------|----------------|------------------|------------------|------------------|----------------|------------------|
| RAB10      | 0.2            | 0.982            | -0.3             | 0.877            | -0.1           | 0.97             |
| RAB11B     | -0.8           | 0.903            | -1               | 0.604            | 0.6            | 0.483            |
| RAB14      | 0.2            | 0.982            | -0.1             | 0.985            | -0.1           | 0.915            |
| RAB18      | 0.4            | 0.974            | 0.3              | 0.948            | -1.1          | 0.421            |
| RAB21      | -0.1           | 0.992            | -0.2             | 0.951            | 0.3            | 0.743            |
| RAB23      | -0.9           | 0.857            | 0.1              | 0.989            | 0.3            | 0.848            |
| RAB2A      | -0.3           | 0.957            | -0.4             | 0.818            | 0.4            | 0.618            |
| RAB35      | -0.1           | 0.982            | -0.5             | 0.792            | -0.5           | 0.578            |
| RAB41      | -0.5           | 0.903            | -0.6             | 0.706            | 0.4            | 0.646            |
| RAB5B      | -0.7           | 0.878            | -0.1             | 0.951            | -0.1           | 1.00             |
| RAB5C      | -0.5           | 0.969            | -1.4             | 0.225            | 0.9            | 0.17             |
| RAB7A      | 0.1            | 0.982            | -1               | 0.452            | 0.3            | 0.714            |
| RAC1       | -0.4           | 0.941            | -1.7             | 0.459            | 1.3            | 0.287            |
| RAC3       | -0.2           | 0.982            | -0.4             | 0.762            | 0.5            | 0.308            |
| RACK1      | 0.1            | 0.982            | -0.8             | 0.718            | 0.4            | 0.733            |
| RAD18      | -0.3           | 0.982            | -0.1             | 0.993            | -0.2           | 0.961            |
| RAD23A     | -0.5           | 0.927            | -0.2             | 0.913            | 0.2            | 0.739            |
| RAD23B     | 0.2            | 0.969            | 0.6              | 0.826            | -0.9           | 0.452            |
| RALY       | -0.5           | 0.903            | -0.7             | 0.769            | 0.3            | 0.863            |
| RAN        | 0.1            | 0.982            | -0.4             | 0.802            | 0.5            | 0.287            |
| RANBP1     | -0.2           | 0.966            | -0.5             | 0.792            | 0.1            | 0.974            |
| RAP1A      | -0.2           | 0.982            | -0.1             | 0.998            | 0.1            | 0.961            |
| RAP1GDS1   | -0.2           | 0.982            | -0.7             | 0.583            | 0.5            | 0.441            |
| RARRES2    | -0.4           | 0.941            | 0.3              | 0.934            | -0.4           | 0.726            |
| RBBP8NL    | -0.9           | 0.9              | -0.1             | 0.985            | -0.2           | 0.913            |
| RBCK1      | -0.3           | 0.957            | -0.2             | 0.951            | -0.3           | 0.811            |
| RBM3       | -0.1           | 0.982            | -0.5             | 0.899            | -0.5           | 0.757            |
| RBP1       | -0.8           | 0.862            | -1.1             | 0.391            | 0.8            | 0.234            |
| RBP4       | 0.3            | 0.946            | -0.3             | 0.826            | 0.3            | 0.726            |
| RBPM5      | -0.6           | 0.9              | -0.5             | 0.808            | -0.4           | 0.65             |
| RBX1       | 0.9            | 0.9              | -0.9             | 0.524            | 1.1            | 0.05             |
| RCN1       | -0.3           | 0.969            | -0.6             | 0.759            | 0.1            | 1.00             |
| RCN3       | 0.2            | 0.982            | -0.8             | 0.792            | 1.6            | 0.068            |
| RDX        | 0.1            | 0.982            | -0.6             | 0.718            | 0.4            | 0.633            |
| RECQL      | -0.1           | 0.992            | 0.1              | 0.993            | 0.1            | 0.913            |
| REEP5      | 0.2            | 0.982            | 0.6              | 0.815            | -0.6           | 0.658            |
| REEP6      | -0.4           | 0.957            | -0.2             | 0.942            | 0.2            | 0.906            |
| RFTN1      | -0.2           | 0.979            | -0.6             | 0.808            | 0.8            | 0.391            |
| RGS22      | -0.5           | 0.941            | -0.6             | 0.808            | 0.2            | 0.863            |
| RHBDI1     | 0.1            | 0.984            | -1.4             | 0.324            | 0.9            | 0.229            |
| RHOA       | -0.4           | 0.93              | -0.6             | 0.822            | -0.3           | 0.855            |
| RHOB       | -0.5           | 0.941            | 0.2              | 0.953            | -0.2           | 0.883            |
| RHOC       | -0.5           | 0.941            | 0.1              | 0.998            | -0.4           | 0.638            |
| RHOG       | -0.2           | 0.982            | -0.5             | 0.833            | 0.1            | 0.995            |
| RIC8A      | -0.1           | 0.982            | 0.2              | 0.923            | -0.4           | 0.657            |

(Continued on next page)
### Supplementary Table III. Continued.

| Gene      | Log2FC TAA/TADA | Adjusted P value | Log2FC TBAD/TADA | Adjusted P value | Log2FC TAA/TBAD | Adjusted P value |
|-----------|-----------------|------------------|------------------|------------------|-----------------|------------------|
| RIF1/C0   | 0.3             | 957              | 0.4              | 818              | 0.4             | 525              |
| RILPL1/C0 | 0.8             | 963              | −0.4             | 826              | 0.1             | 945              |
| RINT1/C0  | −0.7            | 941              | −0.4             | 792              | 0.2             | 811              |
| RNASE1/C0 | 0.6             | 912              | −1.2             | 762              | 0.5             | 797              |
| RNASE4/C0 | −0.4            | 957              | −0.2             | 972              | 0.7             | 487              |
| RNF31/C0  | −0.2            | 982              | 0.1              | 986              | −0.4            | 684              |
| RNH1/C0   | −0.3            | 903              | −0.7             | 819              | 0.6             | 688              |
| RNPEP/C0  | 0.2             | 982              | −0.2             | 899              | −0.2            | 825              |
| RPL10/C0  | −0.1            | 997              | 0.1              | 993              | 0.2             | 871              |
| RPL10A/C0 | −0.2            | 982              | 0.1              | 985              | −0.1            | 962              |
| RPL11/C0  | −0.2            | 982              | −0.2             | 942              | −0.1            | 99               |
| RPL12/C0  | −0.1            | 982              | −0.5             | 826              | 0.4             | 739              |
| RPL13/C0  | −0.2            | 982              | 0.1              | 995              | −0.2            | 897              |
| RPL14/C0  | 0.1             | 982              | −0.4             | 826              | 0.3             | 818              |
| RPL15/C0  | −0.1            | 982              | −0.4             | 848              | 0.4             | 593              |
| RPL17/C0  | 0.2             | 982              | 0.1              | 975              | −0.2            | 893              |
| RPL18/C0  | −0.2            | 982              | −0.4             | 836              | 0.6             | 487              |
| RPL18A/C0 | −0.1            | 982              | −0.5             | 818              | 0.3             | 77               |
| RPL22/C0  | −0.4            | 941              | 0.3              | 899              | −0.4            | 72               |
| RPL23/C0  | 0.2             | 982              | −0.5             | 818              | 0.1             | 952              |
| RPL23A/C0 | 0.1             | 982              | −0.2             | 917              | 0.3             | 688              |
| RPL24/C0  | 0.5             | 927              | −0.4             | 808              | 0.5             | 447              |
| RPL27/C0  | −0.3            | 972              | 0.3              | 933              | 0.3             | 82               |
| RPL27A/C0 | −0.1            | 992              | −0.7             | 792              | 0.4             | 74               |
| RPL28/C0  | −0.1            | 982              | −0.3             | 899              | 0.3             | 8                |
| RPL29/C0  | 0.2             | 974              | −0.3             | 891              | 0.2             | 827              |
| RPL3/C0   | −0.1            | 982              | −0.3             | 891              | 0.5             | 523              |
| RPL30/C0  | −0.6            | 903              | −0.2             | 917              | 0.2             | 913              |
| RPL31/C0  | −0.1            | 982              | −0.9             | 653              | 0.4             | 744              |
| RPL34/C0  | 0.4             | 957              | −0.7             | 792              | 0.6             | 543              |
| RPL35/C0  | −0.7            | 927              | 0.4              | 899              | 0.1             | 968              |
| RPL38/C0  | 0.7             | 927              | −1.2             | 674              | 0.5             | 719              |
| RPL4/C0   | 0.1             | 997              | 0.3              | 944              | 0.5             | 753              |
| RPL5/C0   | −0.2            | 981              | −0.3             | 917              | 0.3             | 825              |
| RPL6/C0   | −0.2            | 982              | −0.5             | 818              | 0.3             | 811              |
| RPL7/C0   | −0.2            | 974              | −0.4             | 818              | 0.3             | 757              |
| RPL7A/C0  | −0.1            | 997              | −0.1             | 988              | −0.2            | 863              |
| RPL8/C0   | 0.3             | 978              | −0.2             | 942              | 0.2             | 888              |
| RPL9/C0   | −0.1            | 992              | −0.5             | 859              | 0.7             | 487              |
| RPLP0/C0  | −0.3            | 974              | −0.4             | 872              | 0.4             | 757              |
| RPLP1/C0  | −0.2            | 982              | −0.5             | 826              | 0.3             | 881              |
| RPLP2/C0  | −0.3            | 966              | −0.5             | 819              | 0.3             | 742              |
| RPN1/C0   | 0.2             | 972              | −0.5             | 792              | 0.2             | 811              |
| RPN2/C0   | 0.1             | 982              | −0.1             | 972              | 0.3             | 726              |
| RPS10/C0  | −0.2            | 982              | 0.1              | 974              | 0.1             | 974              |
| RPS11/C0  | −0.1            | 982              | −0.6             | 78               | 0.4             | 655              |
### Supplementary Table III. Continued.

| Gene     | Log2FC TAA/TADA | Adjusted P value | Log2FC TBAD/TADA | Adjusted P value | Log2FC TAA/TBAD | Adjusted P value |
|----------|----------------|------------------|------------------|------------------|----------------|-----------------|
| RPS12    | 0.2            | .957             | −0.3             | .859             | 0.2            | .824            |
| RPS13    | 0.1            | .993             | −0.1             | .989             | 0.2            | .703            |
| RPS14    | −0.5           | .903             | −0.6             | .792             | 0.6            | .483            |
| RPS15A   | −0.2           | .982             | −0.6             | .792             | 0.1            | .962            |
| RPS16    | −0.4           | .957             | −0.1             | .973             | −0.1           | .961            |
| RPS18    | −0.1           | .982             | −0.5             | .815             | 0.2            | .887            |
| RPS19    | −0.2           | .974             | −0.2             | .935             | 0.1            | .962            |
| RPS2     | −0.1           | .982             | −0.5             | .742             | 0.4            | .595            |
| RPS20    | −0.1           | .982             | −0.2             | .953             | 0.1            | .962            |
| RPS21    | −0.2           | .982             | −0.4             | .853             | 0.3            | .801            |
| RPS23    | −0.2           | .982             | −0.8             | .615             | 0.7            | .342            |
| RPS24    | −0.6           | .903             | 0.3              | .917             | −0.4           | .697            |
| RPS25    | −0.1           | .997             | −0.4             | .899             | −0.3           | .815            |
| RPS27L   | −1.9           | .857             | −0.4             | .848             | 0.4            | .705            |
| RPS28    | −0.3           | .982             | −1.2             | .674             | −0.8           | .532            |
| RPS3     | 0.1            | .962             | 1.1              | .792             | −1.4           | .363            |
| RPS3A    | −0.1           | .982             | −0.4             | .821             | 0.4            | .506            |
| RPS4X    | 0.1            | .982             | −0.2             | .917             | 0.2            | .894            |
| RPS5     | 0.1            | .984             | 0.1              | .985             | 0.1            | .989            |
| RPS6     | 0.2            | .982             | −0.2             | .933             | 0.2            | .824            |
| RPS6KA2  | −0.3           | .982             | 0.4              | .792             | −0.3           | .704            |
| RPS6KA3  | −1.7           | .857             | −1.1             | .718             | 0.8            | .506            |
| RPS7     | −0.3           | .969             | −1.9             | .442             | 0.3            | .909            |
| RPS8     | −0.1           | .982             | −0.5             | .821             | 0.2            | .889            |
| RPS9     | −0.3           | .946             | 0.1              | .974             | −0.1           | .901            |
| RPSA     | 0.3            | .969             | −0.1             | .966             | −0.3           | .8              |
| RRAD     | −0.8           | .9               | −0.6             | .745             | 0.8            | .173            |
| RRAS     | −0.7           | .878             | −0.7             | .821             | −0.2           | .916            |
| RRBP1    | 0.8            | .862             | −0.3             | .888             | −0.5           | .609            |
| RSAD2    | −0.9           | .9               | 0.3              | .891             | 0.6            | .483            |
| RSUI     | −0.4           | .927             | 0.3              | .942             | −1.2           | .347            |
| RTCB     | −0.4           | .927             | −0.4             | .812             | 0.1            | .97             |
| RTN4     | 0.1            | .982             | −0.2             | .899             | −0.2           | .863            |
| RTRAF    | −0.2           | .982             | 0.2              | .934             | −0.1           | .939            |
| RUNDC3A  | 0.2            | .982             | −0.5             | .679             | 0.4            | .471            |
| RUVBL1   | −0.1           | .982             | −0.9             | .75              | 1              | .306            |
| RUVBL2   | 0.1            | .984             | −0.1             | .951             | 0.1            | .965            |
| S100A11  | 0.1            | .982             | −0.3             | .826             | 0.4            | .592            |
| S100A13  | 0.2            | .982             | −0.2             | .922             | 0.2            | .753            |
| S100A16  | −0.1           | .982             | −0.3             | .877             | 0.4            | .59             |
| S100A4   | −0.4           | .903             | −0.4             | .821             | 0.3            | .719            |
| S100A6   | −0.2           | .969             | −0.2             | .917             | −0.3           | .763            |
| S100A8   | −0.4           | .963             | −0.5             | .699             | 0.3            | .578            |
| SAA1     | −1.9           | .857             | 0.1              | .993             | −0.5           | .726            |
| SAMHD1   | −0.1           | .982             | −1.7             | .474             | −0.2           | .931            |
| SAMM50   | −1.2           | .862             | −0.7             | .718             | 0.6            | .437            |
### Supplementary Table III. Continued.

| Gene      | Log₂FC TAA/TADA | Adjusted P value | Log₂FC TBAD/TADA | Adjusted P value | Log₂FC TAA/TBAD | Adjusted P value |
|-----------|-----------------|------------------|------------------|------------------|-----------------|------------------|
| SARS1     | –0.3            | 0.941            | –0.9             | 0.762            | –0.3            | 0.883            |
| SBDS      | –0.6            | 0.9              | –0.5             | 0.785            | 0.2             | 0.825            |
| SBSPON    | –0.5            | 0.903            | –0.8             | 0.583            | 0.3             | 0.811            |
| SCARB2    | –0.5            | 0.946            | –0.2             | 0.939            | –0.4            | 0.699            |
| SCN8A     | –0.6            | 0.941            | –0.3             | 0.934            | –0.3            | 0.865            |
| SCR1      | –0.6            | 0.862            | –0.5             | 0.853            | –0.1            | 0.979            |
| SCUBE3    | –0.7            | 0.9              | –0.7             | 0.586            | 0.1             | 0.921            |
| SCYL2     | –0.8            | 0.941            | 0.3              | 0.916            | –0.9            | 0.187            |
| SDHA      | –0.2            | 0.982            | –2               | 0.537            | 1.2             | 0.474            |
| SDHB      | –0.3            | 0.972            | –0.5             | 0.818            | 0.3             | 0.729            |
| SEC11B    | –0.1            | 0.99             | –0.1             | 0.983            | –0.2            | 0.868            |
| SEC13     | 0.2             | 0.982            | –0.6             | 0.762            | 0.6             | 0.441            |
| SEC14L5   | –0.7            | 0.9              | –0.3             | 0.904            | 0.4             | 0.674            |
| SEC22B    | 0.3             | 0.974            | –0.9             | 0.745            | 0.2             | 0.898            |
| SEC23A    | 0.3             | 0.972            | 0.3              | 0.872            | –0.1            | 0.941            |
| SEC31A    | 0.4             | 0.927            | –0.1             | 0.989            | 0.3             | 0.765            |
| SELENBP1  | –0.2            | 0.927            | 0.3              | 0.862            | 0.1             | 0.932            |
| SELENOM   | –0.2            | 0.982            | –0.6             | 0.391            | 0.4             | 0.335            |
| SELENOP   | –0.2            | 0.982            | 0.2              | 0.951            | –0.3            | 0.757            |
| SEMA3B    | –0.8            | 0.862            | –0.5             | 0.808            | 0.3             | 0.734            |
| SEMA5B    | –0.9            | 0.9              | –0.2             | 0.961            | –0.7            | 0.399            |
| SERBP1    | 0.1             | 0.982            | –2               | 0.323            | 1.1             | 0.36             |
| SERPINA1  | –0.1            | 0.988            | 0.2              | 0.951            | –0.1            | 0.974            |
| SERPINA10 | 0.2             | 0.982            | –12              | 0.225            | 1.1             | 0.025            |
| SERPINA5  | –0.5            | 0.903            | –0.8             | 0.762            | 0.9             | 0.337            |
| SERPINA4  | –0.1            | 0.982            | –11              | 0.401            | 0.6             | 0.389            |
| SERPINA5  | –0.5            | 0.9              | –0.4             | 0.815            | 0.3             | 0.702            |
| SERPINA6  | 0.1             | 0.984            | –0.4             | 0.826            | –0.2            | 0.862            |
| SERPINA7  | 0.3             | 0.966            | –0.8             | 0.519            | 0.9             | 0.135            |
| SERPINB1  | –0.2            | 0.982            | –1               | 0.363            | 1.2             | 0.03             |
| SERPINB6  | –0.5            | 0.941            | –0.1             | 0.998            | –0.1            | 0.894            |
| SERPINC1  | –0.2            | 0.969            | –0.5             | 0.826            | 0.1             | 0.991            |
| SERPIND1  | –0.2            | 0.972            | –0.5             | 0.717            | 0.3             | 0.613            |
| SERPINE2  | 0.2             | 0.982            | –0.9             | 0.346            | 0.7             | 0.161            |
| SERPINF1  | 0.3             | 0.957            | –0.5             | 0.848            | 0.7             | 0.572            |
| SERPINF2  | –0.2            | 0.982            | –0.5             | 0.706            | 0.7             | 0.128            |
| SERPINC1  | –0.3            | 0.957            | 0.2              | 0.944            | –0.3            | 0.705            |
| SERPINH1  | –0.1            | 0.982            | –1               | 0.346            | 0.8             | 0.198            |
| SETD1B    | –0.5            | 0.927            | –0.2             | 0.933            | 0.2             | 0.911            |
| SF3B6     | 0.2             | 0.982            | –11              | 0.421            | 0.7             | 0.366            |
| SFPQ      | 0.6             | 9                | –1.5             | 0.497            | 1.6             | 0.994            |
| SFRP1     | –0.4            | 0.941            | 0.3              | 0.907            | 0.4             | 0.681            |
| SFXN3     | –0.3            | 0.941            | –0.2             | 0.933            | –0.2            | 0.863            |
| SGCD      | –0.9            | 0.857            | –0.5             | 0.791            | 0.2             | 0.863            |
| SH3BGRL   | –0.3            | 0.947            | –0.1             | 0.985            | –0.9            | 0.123            |
| SH3BGRL3  | 0.1             | 0.982            | –0.8             | 0.452            | 0.6             | 0.329            |
**Supplementary Table III. Continued.**

| Gene   | Log₂FC TAA/TADA | Adjusted P value | Log₂FC TBAD/TADA | Adjusted P value | Log₂FC TAA/TBAD | Adjusted P value |
|--------|-----------------|------------------|------------------|------------------|-----------------|------------------|
| SH3BP5 | 0.4             | 0.927            | 0.5              | 0.759            | 0.6             | 0.305            |
| SH3GLB1| −0.2            | 0.982            | −0.2             | 0.917            | −0.2            | 0.825            |
| SH3GLB2| −0.1            | 0.982            | −0.4             | 0.821            | 0.2             | 0.791            |
| SH3RF2 | −0.4            | 0.947            | −0.7             | 0.722            | 0.6             | 0.441            |
| SHMT1  | −0.2            | 0.982            | 0.5              | 0.815            | −0.8            | 0.276            |
| SIN3B  | −0.2            | 0.982            | −0.3             | 0.899            | 0.1             | 0.93             |
| SKP1   | −0.2            | 0.982            | −1               | 0.667            | 0.8             | 0.394            |
| SLC22A17| −0.5            | 0.959            | −0.4             | 0.816            | 0.3             | 0.739            |
| SLC25A1| −0.3            | 0.957            | −1.9             | 0.391            | 1.4             | 0.226            |
| SLC25A11| 0.1             | 0.982            | −0.3             | 0.899            | −0.1            | 0.97             |
| SLC25A12| 0.2             | 0.974            | −0.2             | 0.937            | 0.3             | 0.768            |
| SLC25A24| −0.1            | 0.982            | 0.5              | 0.808            | −0.3            | 0.787            |
| SLC25A3| 0.1             | 0.984            | 0.1              | 0.988            | −0.2            | 0.916            |
| SLC25A4| −1              | 0.857            | −0.1             | 0.993            | 0.1             | 0.961            |
| SLC25A5| 0.1             | 0.997            | −0.3             | 0.928            | −0.8            | 0.313            |
| SLC27A2| 0.1             | 0.982            | −0.5             | 0.891            | 0.5             | 0.753            |
| SLC27A3| −0.1            | 0.983            | −0.6             | 0.713            | 0.6             | 0.286            |
| SLC2A1 | 0.2             | 0.982            | −0.2             | 0.956            | 0.1             | 0.961            |
| SLC2A12| −1              | 0.857            | 0.1              | 0.988            | 0.2             | 0.916            |
| SLC30A10| −0.4            | 0.982            | −12              | 0.324            | 0.3             | 0.825            |
| SLC3A2 | 0.6             | 0.9              | −14              | 0.718            | 1               | 0.514            |
| SLC4A1 | 0.9             | 0.862            | 0.1              | 0.972            | 0.5             | 0.447            |
| SLC7A6 | −0.5            | 0.941            | −0.2             | 0.933            | 1.1             | 0.164            |
| SLC9A3R1| −0.3            | 0.982            | 0.2              | 0.973            | −0.6            | 0.567            |
| SLC9A5 | −0.7            | 0.903            | −11              | 0.583            | 0.9             | 0.339            |
| SLC9A8 | −1.4            | 0.857            | −1.5             | 0.497            | 0.8             | 0.526            |
| SLMAP  | −0.8            | 0.862            | 0.1              | 0.98             | −1.5            | 0.084            |
| SLPI   | −1              | 0.862            | −0.2             | 0.951            | −0.6            | 0.328            |
| SLX4   | −1              | 0.9              | 0.5              | 0.826            | −1.5            | 0.08             |
| SMARCA5| −0.5            | 0.9              | −0.9             | 0.792            | −0.1            | 0.971            |
| SMO2C  | −0.2            | 0.982            | −0.6             | 0.699            | 0.2             | 0.894            |
| SMTN   | −0.9            | 0.857            | 0.1              | 0.988            | −0.2            | 0.84             |
| SNCA   | 0.4             | 0.927            | −0.4             | 0.826            | −0.5            | 0.467            |
| SNCG   | −1              | 0.862            | −0.8             | 0.604            | 1.2             | 0.058            |
| SNI1   | 0.3             | 0.941            | −0.6             | 0.812            | −0.5            | 0.688            |
| SNRP200| −0.7            | 0.9              | 0.4              | 0.815            | −0.1            | 0.928            |
| SNRPD1 | −0.3            | 0.974            | −1.1             | 0.742            | 0.5             | 0.787            |
| SNRPD2 | 0.3             | 0.957            | −0.6             | 0.78             | 0.4             | 0.691            |
| SNRPD3 | 0.1             | 0.982            | −0.1             | 0.988            | 0.4             | 0.688            |
| SNTB2  | −0.5            | 0.9              | −0.6             | 0.759            | 0.7             | 0.324            |
| SNX1   | 0.4             | 0.941            | −0.4             | 0.821            | −0.1            | 0.911            |
| SNX12  | −0.6            | 0.9              | 0.1              | 0.994            | 0.3             | 0.674            |
| SNX18  | −0.4            | 0.927            | −0.3             | 0.917            | −0.4            | 0.664            |
| SNX2   | 0.3             | 0.965            | 0.1              | 0.989            | −0.5            | 0.584            |
| SNX29  | −0.5            | 0.927            | −0.3             | 0.899            | 0.5             | 0.478            |
| SNX3   | −0.1            | 0.972            | −0.7             | 0.77             | 0.3             | 0.863            |
| Gene   | Log₂FC TAA/ TADA | Adjusted P value | Log₂FC TBAD/ TADA | Adjusted P value | Log₂FC TAA/ TBAD | Adjusted P value |
|--------|------------------|------------------|-------------------|------------------|------------------|------------------|
| SNX6   | 0.3              | 0.957            | –0.1              | 1.00             | –0.1             | 0.815            |
| SNX9   | 0.8              | 0.9              | –0.6              | 0.574            | 0.4              | 0.444            |
| SOD1   | –0.2             | 0.941            | –0.8              | 0.715            | –0.1             | 1.00             |
| SOD2   | –0.1             | 0.993            | –0.3              | 0.785            | 0.1              | 0.863            |
| SOD3   | –1               | 0.862            | –0.6              | 0.537            | 0.6              | 0.179            |
| SOGA1  | –0.1             | 0.984            | –0.3              | 0.899            | –0.7             | 0.394            |
| SON    | –0.2             | 0.982            | –0.6              | 0.833            | 0.5              | 0.719            |
| SORBS1 | –0.8             | 0.862            | –0.2              | 0.953            | –0.1             | 0.958            |
| SORBS2 | –1               | 0.857            | –0.3              | 0.919            | –0.6             | 0.452            |
| SORBS3 | –0.6             | 0.9              | –0.6              | 0.792            | –0.5             | 0.625            |
| SORD   | –0.8             | 0.9              | –0.3              | 0.912            | –0.4             | 0.624            |
| SOST   | –0.8             | 0.9              | –0.6              | 0.814            | –0.3             | 0.863            |
| SOX6   | –0.2             | 0.982            | 0.4               | 0.911            | –1.1             | 0.285            |
| SPARC  | 0.4              | 0.93             | –0.9              | 0.327            | 0.7              | 0.128            |
| SPARCL1| –0.6             | 0.862            | –0.2              | 0.951            | 0.5              | 0.495            |
| SPCS2  | 2                | 0.857            | –1                | 0.286            | 0.5              | 0.451            |
| SPCS3  | 0.3              | 0.972            | 1                 | 0.721            | 1                | 0.334            |
| SPON1  | 0.3              | 0.947            | 0.1               | 0.998            | 0.3              | 0.808            |
| SPR    | –0.7             | 0.9              | 0.2               | 0.944            | 0.2              | 0.862            |
| SPTA1  | 0.6              | 0.9              | –0.7              | 0.75             | 0.1              | 0.985            |
| SPTAN1 | –0.2             | 0.982            | 0.1               | 0.988            | 0.6              | 0.523            |
| SPTB   | 0.7              | 0.9              | –0.6              | 0.725            | 0.5              | 0.529            |
| SPTBN1 | –0.2             | 0.982            | 0.1               | 0.993            | 0.7              | 0.377            |
| SQOR   | 0.2              | 0.982            | –0.4              | 0.815            | 0.3              | 0.757            |
| SQRD   | 0.2              | 0.982            | –0.6              | 0.776            | 0.7              | 0.301            |
| SREBF2 | –0.4             | 0.982            | 0.2               | 0.942            | –0.1             | 0.988            |
| SRFBP1 | –0.7             | 0.9              | –0.1              | 0.993            | –0.4             | 0.862            |
| SRGAP3 | 0.3              | 0.982            | –1.2              | 0.497            | 0.5              | 0.652            |
| SRI    | –0.1             | 0.974            | 0.2               | 0.966            | 0.2              | 0.953            |
| SRM    | 0.2              | 0.972            | –0.2              | 0.844            | 0.1              | 0.898            |
| SRP9   | –0.3             | 0.963            | –0.4              | 0.808            | 0.6              | 0.326            |
| SRPX   | –0.7             | 0.916            | –0.5              | 0.792            | 0.3              | 0.784            |
| SRRT   | –0.4             | 0.946            | 0.5               | 0.861            | –1.1             | 0.28             |
| SRSF1  | –0.4             | 0.944            | 0.6               | 0.792            | –0.9             | 0.209            |
| SRSF3  | –0.3             | 0.957            | –0.5              | 0.812            | 0.2              | 0.911            |
| SRSF7  | –0.6             | 0.9              | –0.1              | 0.997            | –0.3             | 0.752            |
| SSB    | –0.4             | 0.9              | –0.1              | 0.989            | –0.5             | 0.552            |
| SSBP1  | 0.4              | 0.972            | –0.8              | 0.459            | 0.4              | 0.564            |
| SSR1   | 0.6              | 0.9              | 1                 | 0.652            | –0.7             | 0.467            |
| SSR4   | 0.1              | 0.982            | 0.1               | 0.989            | 0.5              | 0.452            |
| SSTR2  | –1.2             | 0.9              | –0.3              | 0.942            | 0.3              | 0.84             |
| ST3GAL6| –1.4             | 0.857            | –1.6              | 0.701            | 0.4              | 0.863            |
| STAT1  | –0.4             | 0.941            | –0.3              | 0.933            | –1.2             | 0.203            |
| STAMBP | 0.7              | 0.972            | –0.6              | 0.808            | 0.2              | 0.913            |
| STAT6  | –0.3             | 0.957            | –0.6              | 0.826            | 0.5              | 0.707            |
### Supplementary Table III. Continued.

| Gene    | Log₂FC TAA/TADA | Adjusted P value | Log₂FC TBAD/TADA | Adjusted P value | Log₂FC TAA/TBAD | Adjusted P value |
|---------|------------------|------------------|------------------|------------------|-----------------|------------------|
| STIP1   | −0.2             | 0.96             | 0.1              | 0.986            | −0.3            | 0.688            |
| STK25   | −0.7             | 0.947            | −0.6             | 0.583            | 0.4             | 0.453            |
| STK31   | 0.7              | 0.9              | −0.6             | 0.897            | −0.1            | 0.966            |
| STN1    | −0.5             | 0.922            | −0.3             | 0.936            | 1               | 0.35             |
| STOM    | 0.2              | 0.982            | −1.9             | 0.225            | 1.4             | 0.064            |
| STT3A   | −0.1             | 0.982            | 0.3              | 0.93             | −0.1            | 0.968            |
| STX7    | −0.2             | 0.972            | −0.1             | 0.997            | −0.1            | 0.962            |
| STXB3P5 | −0.1             | 0.982            | −0.3             | 0.822            | 0.2             | 0.862            |
| SUCLA2  | 0.1              | 0.982            | −0.3             | 0.809            | 0.3             | 0.647            |
| SUCLG1  | −0.2             | 0.982            | −0.5             | 0.679            | 0.6             | 0.28             |
| SUCLG2  | −0.1             | 0.982            | −0.6             | 0.853            | 0.4             | 0.811            |
| SULF1   | 0.1              | 0.988            | −0.4             | 0.815            | 0.4             | 0.654            |
| SUMF2   | −0.6             | 0.9              | 0.3              | 0.861            | −0.3            | 0.753            |
| SUN2    | −0.7             | 0.864            | −0.5             | 0.836            | −0.2            | 0.878            |
| SUSD2   | −0.5             | 0.927            | −0.1             | 0.985            | −0.7            | 0.354            |
| SUSD5   | −0.7             | 0.9              | −0.2             | 0.965            | −0.4            | 0.707            |
| SVIL    | 0.1              | 0.988            | 0.1              | 0.989            | −0.8            | 0.346            |
| SYG     | 0.3              | 0.966            | 0.2              | 0.917            | −0.2            | 0.862            |
| SYHC    | −0.1             | 0.982            | 0.1              | 0.988            | 0.3             | 0.812            |
| SYNCRIP | 0.2              | 0.979            | −0.3             | 0.88             | 0.3             | 0.799            |
| SYNE1   | −0.6             | 0.9              | −0.1             | 0.966            | 0.3             | 0.743            |
| SYNM    | −0.2             | 0.974            | −0.4             | 0.831            | −0.2            | 0.865            |
| SYNP0   | −0.2             | 0.982            | −0.1             | 0.961            | −0.1            | 0.912            |
| SYNP02  | −0.5             | 0.9              | 0.2              | 0.941            | −0.3            | 0.719            |
| SYPL1   | −0.6             | 0.927            | −0.1             | 0.972            | −0.4            | 0.59             |
| TAGLN   | −1.2             | 0.857            | −0.5             | 0.839            | −0.1            | 0.963            |
| TAGLN2  | −0.4             | 0.927            | −0.8             | 0.769            | −0.5            | 0.668            |
| TALDO1  | 0.2              | 0.957            | −0.5             | 0.792            | 0.1             | 0.945            |
| TARDBP  | −0.1             | 0.982            | −0.2             | 0.897            | 0.3             | 0.447            |
| TARSI1  | 0.4              | 0.941            | −0.6             | 0.704            | 0.5             | 0.416            |
| TARS2   | −0.7             | 0.929            | 0.1              | 0.973            | 0.3             | 0.757            |
| TASOR2  | −0.5             | 0.927            | −0.9             | 0.808            | 0.2             | 0.945            |
| TAXIBP3 | −0.7             | 0.903            | 0.2              | 0.957            | −0.6            | 0.492            |
| TBCD5   | −1.1             | 0.862            | −0.8             | 0.792            | 0.1             | 0.962            |
| TBCA    | −0.5             | 0.9              | −0.2             | 0.961            | −1              | 0.278            |
| TBCB    | −0.5             | 0.9              | −0.7             | 0.624            | 0.2             | 0.82             |
| TCP1    | −0.2             | 0.982            | −0.7             | 0.519            | 0.3             | 0.769            |
| TENT2   | 0.1              | 0.982            | −0.4             | 0.792            | 0.3             | 0.691            |
| TES     | −0.6             | 0.9              | −0.3             | 0.989            | −0.5            | 0.363            |
| TF      | −0.2             | 0.974            | −0.1             | 0.989            | −0.5            | 0.363            |
| TFE2    | −0.9             | 0.941            | −1               | 0.346            | 0.8             | 0.157            |
| TFG     | 0.1              | 0.992            | −1.1             | 0.821            | 0.2             | 0.956            |
| TCFB1   | 0.2              | 0.982            | −0.3             | 0.899            | 0.3             | 0.762            |
| TCFB1I1 | −0.9             | 0.857            | 0.8              | 0.708            | −0.7            | 0.438            |
| TCFB1   | −0.3             | 0.969            | −0.3             | 0.891            | −0.7            | 0.368            |
| TCM2    | −0.8             | 0.862            | −0.3             | 0.847            | 0.1             | 0.945            |

(Continued on next page)
### Supplementary Table III. Continued.

| Gene   | Log₂FC TAA/TADA | Adjusted P value | Log₂FC TBAD/TADA | Adjusted P value | Log₂FC TAA/TBAD | Adjusted P value |
|--------|-----------------|------------------|------------------|------------------|-----------------|------------------|
| TH     | −1.2            | .862             | −0.5             | .792             | −0.3            | .72              |
| THBS1  | 1.3             | .857             | −0.3             | .933             | −1              | .343             |
| THBS2  | 0.4             | .97              | 0.2              | .953             | 1.1             | .16              |
| THOP1  | −0.5            | .927             | 0.1              | .985             | 0.3             | .84              |
| THSD1  | −0.6            | .862             | −1.1             | .508             | 0.6             | .497             |
| THSD4  | −0.3            | .941             | 0.2              | .904             | −0.8            | .135             |
| THTPA  | 1.6             | .862             | 0.5              | .691             | −0.7            | .094             |
| THY1   | 0.6             | 9                | 1.1              | .792             | 0.6             | .761             |
| TIMP1  | 0.8             | 9                | −0.4             | .826             | 1               | .179             |
| TIMP2  | −0.4            | .957             | −0.1             | .994             | 0.8             | .409             |
| TIMP3  | 1               | .878             | −0.6             | .808             | 0.2             | .863             |
| TINAGLI| −1.1            | .857             | 0.2              | .95              | 0.8             | .447             |
| TJP2   | 0.3             | .981             | −0.2             | .942             | −1              | .182             |
| TKT    | −0.3            | 9                | 0.3              | .895             | −0.1            | .957             |
| TLE7   | −0.3            | .927             | −0.5             | .401             | 0.3             | .447             |
| TLN1   | −0.2            | .974             | −0.5             | .632             | 0.3             | .671             |
| TLN2   | −0.4            | .941             | 0.2              | .904             | −0.4            | .557             |
| TM3C   | 0.2             | .982             | 0.2              | .933             | −0.5            | .489             |
| TMCC2  | 0.7             | .903             | −0.4             | .932             | 0.6             | .791             |
| TMED7  | −0.4            | .941             | −0.7             | .792             | 1.3             | .135             |
| TMEM109| −0.5            | 9                | −0.4             | .826             | 0.1             | .979             |
| TMEM198| −0.3            | .972             | −0.6             | .674             | 0.2             | .84              |
| TMEM214| −0.7            | 9                | −1.1             | .586             | 0.8             | .406             |
| TMEM33 | −0.6            | .969             | −0.2             | .933             | −0.5            | .623             |
| TMEM43 | −0.2            | .974             | 0.5              | .917             | −1              | .526             |
| TMEM67 | −1.2            | .862             | −0.3             | .904             | 0.1             | .978             |
| TMOD1  | −0.7            | .862             | −0.9             | .762             | −0.3            | .84              |
| TMSB4X | 0.1             | .988             | −0.7             | .656             | −0.1            | .97              |
| TNC    | −0.2            | .982             | −0.3             | .896             | 0.4             | .74              |
| TNFRSF11B| 0.1             | .984             | −0.7             | .808             | 0.5             | .676             |
| TNFSF13| −0.4            | .941             | −0.4             | .83              | 0.4             | .623             |
| TNN    | −0.2            | .982             | −0.1             | .986             | −0.4            | .72              |
| TNPO1  | −0.2            | .982             | −1.2             | .391             | 1.1             | .128             |
| TNPO2  | 0.4             | .972             | −0.2             | .899             | 0.1             | .913             |
| TNRC6C | −0.4            | .969             | −0.7             | .826             | 1.1             | .397             |
| TNS1   | −0.8            | .862             | −1.9             | .225             | 1.6             | .044             |
| TNS2   | −0.1            | .982             | 0.1              | .988             | −0.8            | .273             |
| TNXB   | −0.8            | .857             | 0.2              | .916             | −0.3            | .743             |
| TOLLIP | −0.1            | .982             | −0.9             | .392             | 0.1             | .933             |
| TOM1   | −0.3            | .967             | 0.4              | .847             | −0.5            | .616             |
| TOMIL2 | 0.5             | 9                | −0.5             | .802             | 0.2             | .825             |
| TOTIAIP1| −0.3            | .947             | 0.5              | .792             | −0.1            | 1.00             |
| TPDS2L2| 0.1             | .992             | 0.3              | .826             | −0.6            | .334             |
| TPI    | −0.4            | 9                | −0.5             | .792             | 0.5             | .489             |
| TPM1   | −0.9            | .862             | −0.5             | .67              | 0.2             | .878             |
| TPM2   | −1.3            | .862             | −0.7             | .78              | −0.3            | .811             |
## Supplementary Table III. Continued.

| Gene   | Log2FC TAA/ TADA | Adjusted P value | Log2FC TBAD/ TADA | Adjusted P value | Log2FC TAA/ TBAD | Adjusted P value |
|--------|------------------|------------------|-------------------|------------------|------------------|------------------|
| TPM3   | 0.4              | 9                | –0.7              | 0.815            | –0.6             | 0.626            |
| TPM4   | –0.1             | 982              | –0.3              | 0.848            | 0.6              | 0.198            |
| TPP1   | 0.6              | 9                | –0.3              | 0.826            | 0.2              | 0.77             |
| TPP2   | –0.7             | 9                | –0.1              | 0.966            | 0.7              | 0.286            |
| TPT1   | –0.3             | 974              | –0.8              | 0.721            | 0.2              | 0.914            |
| TRIM38 | –1.6             | 857              | –0.5              | 0.853            | 0.2              | 0.916            |
| TRIOBP | –0.1             | 982              | –0.8              | 0.808            | –0.8             | 0.561            |
| TRIP6  | 0.1              | 982              | 0.5               | 0.792            | –0.6             | 0.42             |
| TSG101 | –0.1             | 99               | 0.4               | 0.853            | –0.3             | 0.811            |
| TSN    | 0.1              | 993              | –0.5              | 0.821            | 0.4              | 0.641            |
| TTN    | –0.1             | 988              | –0.2              | 0.914            | 0.3              | 0.8              |
| TTR    | 0.1              | 984              | –0.6              | 0.718            | 0.5              | 0.378            |
| TTYH2  | –0.6             | 862              | –0.7              | 0.583            | 0.7              | 0.179            |
| TUBA4A | 0.1              | 982              | –0.1              | 0.951            | –0.5             | 0.363            |
| TUBB   | 0.1              | 987              | 0.1               | 0.988            | 0.1              | 0.893            |
| TUBB1  | –0.1             | 99               | –0.5              | 0.792            | 0.6              | 0.441            |
| TUBB2A | 0.1              | 982              | 0.6               | 0.899            | –0.6             | 0.753            |
| TUBB4A | 0.5              | 969              | –0.4              | 0.815            | 0.5              | 0.521            |
| TUBB4B | –0.3             | 974              | 0.4               | 0.93             | 0.2              | 0.962            |
| TUBB6  | –0.1             | 982              | –0.9              | 0.552            | 0.7              | 0.352            |
| TUFM   | 0.1              | 982              | –0.4              | 0.818            | 0.4              | 0.697            |
| TUT7   | –0.6             | 903              | –0.2              | 0.917            | 0.2              | 0.769            |
| TVC2   | –1               | 862              | –0.4              | 0.895            | –0.3             | 0.8              |
| TWFI   | –0.4             | 93               | –0.6              | 0.674            | 0.3              | 0.705            |
| TWF2   | 0.3              | 982              | 0.3               | 0.933            | 0.1              | 1.00             |
| TXN    | –0.3             | 957              | –0.4              | 0.792            | 0.2              | 0.849            |
| TXNDC12| 1.1              | 862              | 0.9               | 0.755            | 0.2              | 0.916            |
| TXNDC17| –0.4             | 9                | –0.7              | 0.401            | 0.4              | 0.441            |
| TXNDC5 | 0.3              | 957              | –0.5              | 0.792            | 0.7              | 0.21             |
| TXNL1  | –0.2             | 957              | –0.6              | 0.477            | 0.4              | 0.344            |
| TXNRD1 | –0.4             | 912              | –0.6              | 0.668            | 0.3              | 0.734            |
| TYMP   | 0.5              | 9                | –0.2              | 0.932            | 0.7              | 0.328            |
| TYRPI1 | –0.5             | 941              | –0.7              | 0.792            | 0.2              | 0.878            |
| U2AF2  | 0.5              | 912              | 0.2               | 0.944            | 0.3              | 0.737            |
| UAPI   | –0.6             | 9                | –0.1              | 0.973            | –0.5             | 0.59             |
| UBA1   | –0.2             | 941              | –0.3              | 0.808            | 0.1              | 0.902            |
| UBAP2L | 0.2              | 969              | 0.1               | 0.993            | 0.2              | 0.8              |
| UBE2I  | –0.5             | 903              | –0.1              | 0.978            | –0.4             | 0.654            |
| UBE2K  | 0.4              | 941              | –0.4              | 0.808            | 0.7              | 0.199            |
| UBE2L3 | 0.1              | 992              | –0.1              | 0.989            | 0.1              | 0.968            |
| UBE2M  | –0.2             | 982              | –0.3              | 0.917            | 0.2              | 0.913            |
| UBE2N  | –0.4             | 941              | –0.3              | 0.933            | –0.2             | 0.863            |
| UBE2O  | 1.4              | 857              | –0.6              | 0.818            | –0.9             | 0.306            |
| UBE2V1 | 0.1              | 982              | –0.2              | 0.951            | 0.2              | 0.841            |
| UBL5   | –0.7             | 862              | –0.8              | 0.583            | 0.2              | 0.911            |
| UBR4   | –0.9             | 903              | 0.4               | 0.934            | –1.2             | 0.399            |

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### Supplementary Table III. Continued.

| Gene   | Log₂FC TAA/ TADA | Adjusted P value | Log₂FC TBAD/ TADA | Adjusted P value | Log₂FC TAA/ TBAD | Adjusted P value |
|--------|------------------|------------------|-------------------|------------------|------------------|------------------|
| UCHL1  | –0.4             | .927             | –0.7              | .703             | 0.3              | 0.76             |
| UFC1   | –0.3             | .903             | –0.5              | .614             | 0.3              | 0.693            |
| UFL1   | –0.1             | .993             | –0.4              | .844             | 0.4              | 0.701            |
| UFM1   | –0.1             | .982             | –0.9              | .457             | 0.8              | 1.145            |
| UGDH   | –0.3             | .974             | –0.2              | .933             | –0.1             | 0.968            |
| UGTT1  | 0.4              | .941             | 0.4               | .822             | –0.1             | 0.974            |
| UGP2   | –0.3             | .9               | –0.2              | .822             | –0.1             | 0.913            |
| UNC45A | –0.2             | .982             | –0.5              | .821             | 0.3              | 0.761            |
| UQCR10 | 0.5              | .903             | 0.2               | .922             | 0.3              | 0.779            |
| UQRC1  | 0.3              | .966             | 0.1               | .982             | 0.3              | 0.825            |
| UQRC2  | 0.3              | .972             | 0.3               | .895             | –0.1             | 0.977            |
| UQCRH  | –0.1             | .982             | –0.3              | .892             | 0.3              | 0.843            |
| USO1   | –0.6             | .9               | –1.1              | .431             | 0.6              | 0.463            |
| USP14  | –0.1             | .982             | –0.5              | .792             | 0.4              | 0.561            |
| USP15  | –1               | .862             | –0.5              | .855             | –0.6             | 0.581            |
| USP17L13 | 0.1             | .99              | –0.4              | .762             | 0.5              | 0.391            |
| USP17L18 | –0.2             | .974             | –0.3              | .891             | 0.1              | 0.961            |
| USP17L19 | –0.9             | .862             | –0.8              | .721             | –0.1             | 0.958            |
| USP17L20 | 0.3              | .967             | –0.3              | .853             | 0.5              | 0.409            |
| USP17L22 | 0.1              | .982             | –0.2              | .911             | 0.3              | 0.744            |
| USP5   | –0.1             | .997             | –0.1              | .951             | 0.1              | 0.911            |
| UTP14A | –0.7             | .903             | –0.9              | .759             | 0.2              | 0.902            |
| UTRO   | –0.3             | .941             | –0.3              | .853             | –0.1             | 0.989            |
| VAPA   | 0.1              | .982             | –0.1              | .989             | 0.2              | 0.943            |
| VASP   | 0.1              | .992             | 0.3               | .797             | –0.3             | 0.543            |
| VAT1   | –0.1             | .988             | –0.4              | .808             | 0.3              | 0.572            |
| VCAN   | –0.7             | .9               | 0.3               | .922             | –0.9             | 0.286            |
| VCL    | –0.6             | .862             | –0.2              | .933             | –0.4             | 0.457            |
| VCP    | 0.2              | .972             | –0.1              | .944             | 0.3              | 0.652            |
| VDAC1  | 0.3              | .9               | –0.1              | .988             | 0.4              | 0.402            |
| VDAC2  | 0.3              | .966             | –0.4              | .826             | 0.6              | 0.342            |
| VDAC3  | 0.2              | .982             | 0.3               | .917             | –0.2             | 0.922            |
| VILL   | –0.3             | .969             | –1.5              | .225             | 1.2              | 0.071            |
| VIM    | –0.4             | .9               | –0.4              | .816             | –0.1             | 0.962            |
| VIRMA  | –0.9             | .857             | –0.3              | .861             | –0.6             | 0.409            |
| VPS11  | –0.2             | .982             | –0.1              | .988             | –0.1             | 0.931            |
| VPS29  | –0.1             | .982             | –0.1              | .972             | 0.1              | 0.974            |
| VPS35  | –0.4             | .941             | –0.5              | .759             | 0.2              | 0.8              |
| VPS4B  | 0.1              | .982             | 0.1               | 1.00             | 0.1              | 0.968            |
| VTN    | 0.1              | .982             | –0.3              | .899             | 0.3              | 0.715            |
| VWA1   | –0.3             | .976             | –0.4              | .826             | 0.2              | 0.873            |
| VWA3A  | –0.1             | .984             | 0.3               | .858             | –0.4             | 0.674            |
| VWA3B  | –0.2             | .982             | –1                | .674             | 0.8              | 0.408            |
| WASHC1 | 0.2              | .982             | 0.4               | .946             | –0.3             | 0.944            |
| WASHC4 | –2.2             | .857             | –0.3              | .944             | –1.9             | 0.108            |
| WBP11  | –1.1             | .862             | 0.2               | .946             | –1.3             | 0.188            |
| Gene      | Log$_2$FC TAA/TADA | Adjusted $P$ value | Log$_2$FC TBAD/TADA | Adjusted $P$ value | Log$_2$FC TAA/TBAD | Adjusted $P$ value |
|-----------|---------------------|-------------------|---------------------|-------------------|---------------------|-------------------|
| WDR1      | 0.4                 | 0.862             | 0.3                 | 0.819             | 0.2                 | 0.71              |
| WDR76     | 0.2                 | 1.974             | 0.8                 | 0.474             | 0.7                 | 0.262             |
| WDR82     | 0.5                 | 0.966             | 0.2                 | 0.973             | 0.4                 | 0.84              |
| WDR83OS   | 1.0                 | 0.872             | 0.1                 | 0.974             | 1.1                 | 0.26              |
| WISP2     | −1.2                | 0.857             | 0.7                 | 0.759             | 0.5                 | 0.526             |
| WRAP73    | −1.2                | 0.862             | −1.3                | 0.583             | 0.1                 | 0.968             |
| WTIP      | −0.7                | 0.927             | −0.6                | 0.826             | 0.1                 | 0.971             |
| XDH       | −0.5                | 0.934             | 0.2                 | 0.962             | 0.6                 | 0.526             |
| XPO1      | −0.2                | 0.982             | −0.1                | 0.993             | 0.2                 | 0.894             |
| XRCC5     | −0.2                | 0.982             | −0.3                | 0.891             | 0.2                 | 0.9               |
| XRCC6     | −0.4                | 0.903             | −0.4                | 0.802             | 0.1                 | 1.00              |
| XRNI      | −1.1                | 0.9               | −0.9                | 0.762             | 0.2                 | 0.945             |
| YAPI      | −0.3                | 0.969             | −0.4                | 0.808             | 0.2                 | 0.84              |
| YKT6      | −0.5                | 0.903             | −0.5                | 0.8               | 0.1                 | 0.993             |
| YPEL1     | −1.1                | 0.9               | −1.1                | 0.742             | 0.1                 | 1.00              |
| YWHAH     | −0.2                | 0.941             | −0.3                | 0.808             | 0.1                 | 0.916             |
| YWHAE     | −0.1                | 0.982             | −0.4                | 0.792             | 0.4                 | 0.526             |
| YWHAG     | −0.4                | 0.9               | −0.5                | 0.583             | 0.2                 | 0.795             |
| YWHAH     | −0.1                | 0.982             | −0.4                | 0.792             | 0.3                 | 0.613             |
| YWHAQ     | −0.4                | 0.903             | −0.4                | 0.815             | 0.1                 | 0.998             |
| YWHAZ     | −0.1                | 0.982             | −0.2                | 0.891             | 0.2                 | 0.825             |
| ZBTB21    | −0.8                | 0.862             | 0.1                 | 0.993             | −0.8                | 0.287             |
| ZC2HC1C   | −0.8                | 0.9               | 0.4                 | 0.891             | −1.1                | 0.187             |
| ZMYND8    | −0.5                | 0.927             | 0.2                 | 0.934             | −0.7                | 0.431             |
| ZNF350    | 1.5                 | 0.862             | −0.1                | 0.985             | 1.6                 | 0.157             |
| ZNF385A   | −1.3                | 0.862             | 0.1                 | 0.998             | −1.3                | 0.287             |
| ZNF479    | −0.4                | 0.903             | −0.3                | 0.853             | −0.2                | 0.886             |
| ZNF507    | −0.4                | 0.947             | −0.9                | 0.634             | 0.5                 | 0.563             |
| ZNF597    | −0.8                | 0.9               | −0.8                | 0.762             | −0.1                | 0.974             |
| ZSCAN9    | −0.6                | 0.974             | −0.3                | 0.973             | −0.4                | 0.902             |
| ZSWIM9    | −0.3                | 0.957             | −1.1                | 0.327             | 0.8                 | 0.179             |
| ZYX       | −0.2                | 0.969             | −0.1                | 0.983             | −0.2                | 0.84              |

Log$_2$FC, Log$_2$ fold change; TAA, thoracic aorta aneurysm; TADA, thoracic aorta dissection and aneurysm; TBAD, type B aortic dissection.

*False discovery rate.