Data Article

Time course gene expression data in colon of mice after exposure to food-grade E171

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We investigated gene expression responses in BALB/c mice exposed by gavage to 5 mg/kg bw/day of E171 for 2, 7, 14 and 21 days. Food additive E171 (titanium dioxide) has been shown to induce oxidative stress and DNA damage in vitro as well as facilitating growth of colorectal tumours in vivo. Full genome expression changes of the colon of mice were investigated by using Agilent SurePrint G3 mouse Gene exp 60kv2 microarrays slides. The data presented in this DIB include all differentially expressed for each time point with EntrezGeneID, gene symbols, gene names and Log2FC as well as genes included in pathways after over-representation analysis in ConsensusPathDataBase. The functions of these genes in relation to the colon were described in our associated article (Proquin et al., 2017 in press) [1]. Raw and normalized gene expression data are available through NCBI GEO (GEO accession: GSE92563).

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### Specifications Table

| Subject area               | Biology                      |
|----------------------------|------------------------------|
| More specific subject area | Food Toxicogenomics          |
| Type of data               | Tables                       |
| How data was acquired      | Agilent SurePrint G3 mouse Gene exp 60Kv2 microarrays |
| Data format                | Differentially expressed genes (DEG) and DEG in pathways (after over-representation analysis in ConsensusPathDatabase) with Log2FC per time point |
| Experimental factors       | BALB/c mice were exposed by gavage to 5 mg/kg bw/day of E171 for 2, 7, 14 and 21 days |
| Experimental features      | Data from each time point of exposure was corrected by its time-matched control |
| Data source location       | Department of Toxicogenomics, Maastricht University, the Netherlands |
| Data accessibility         | Raw and normalized gene expression data are available through NCBI GEO (GEO accession: GSE92563) |

### Value of the data

- The DEG obtained after exposure to E171 in colon of mice can serve as a benchmark to validate functional measurements such as metabolomics and proteomics.

- These data can be compared to further advance time series studies in other organs after E171 exposure.

- All the differentially expressed genes that could not be linked directly to pathways are of major interest for further studies since these might be related to yet unknown (biological) processes activated by exposure to E171.

### 1. Data

Titanium dioxide, referred to as E171, is used as a colouring agent in various types of food like sweets, cookies, coffee creamers, and salad dressings [1,2]. To establish molecular responses that may relate to potential health effects in the colon, BALB/c mouse were intragastrically exposed to 5 mg/kg bw/day of E171 for 2, 7, 14, and 21 days. Microarray analyses of the colon of the mice showed the effects of E171 exposure on the whole transcriptome. The number of DEG was 417 after 2 days of exposure (Table 1), 971 after 7 days of exposure (Table 2), 1512 after 14 days (Table 3), and 229 after 21 days of exposure (Table 4). The data shows that exposure to E171 affects the expression of genes which are involved in oxidative stress, immune response, DNA repair, development of cancer for instance colon cancer, and regulation of GPCR/olfactory and serotonin receptors (Tables 5, 6, 7, and 8). A relatively large proportion of the DEG could not be linked to known molecular pathways which indicate that E171 is affecting the biological response beyond currently known processes (Figure 3, in Ref. [3]).
### Table 1
Differentially expressed genes (DEG) in the colon of mice after 2 days of exposure to E171.

| Entrez gene ID | Gene symbol | Gene name                                      | Log2FC |
|---------------|-------------|-----------------------------------------------|--------|
| 11434         | Acr         | acrosin prepropeptide                          | −0.94033 |
| 11498         | Adam4       | a disintegrin and metallopeptidase domain 4    | 0.725974 |
| 12064         | Bdnf        | brain derived neurotrophic factor             | −1.07104 |
| 12154         | Bmp10       | bone morphogenetic protein 10                 | −0.79709 |
| 12575         | Cdkn1a      | cyclin-dependent kinase inhibitor 1A (P21)     | 0.728624 |
| 12965         | Crygb       | crystallin, gamma B                           | −0.98104 |
| 13078         | Cyp1b1      | cytochrome P450, family 1, subfamily b, polypeptide 1 | 2.613566 |
| 13119         | Cyp4a14     | cytochrome P450, family 4, subfamily a, polypeptide 14 | −0.85899 |
| 13172         | Dbx1        | developing brain homeobox 1                    | 1.557234 |
| 13411         | Dnah11      | dynein, axonemal, heavy chain 11               | 1.85893 |
| 13476         | Reep5       | receptor accessory protein 5                   | 0.737949 |
| 13492         | Drd5        | dopamine receptor D5                           | −1.0558 |
| 14380         | G6pd2       | glucose-6-phosphate dehydrogenase 2            | 0.842643 |
| 14599         | Gh          | growth hormone                                 | −1.02848 |
| 14602         | Ghrhr       | growth hormone releasing hormone receptor      | −1.05079 |
| 14610         | Gja10       | gap junction protein, alpha 10                 | −0.92558 |
| 14676         | Gna15       | guanine nucleotide binding protein, alpha 15   | −0.86407 |
| 14764         | Ptgdr2      | prostaglandin D2 receptor 2                    | −1.13784 |
| 14997         | H2-M9       | histocompatibility 2, M region locus 9         | −2.12823 |
| 15132         | Hbb-bh1     | hemoglobin Z, beta-like embryonic chain        | −1.10259 |
| 15202         | Hemt1       | hematopoietic cell transcript 1                | −0.61414 |
| 15502         | Dnaj1       | Dnaj (Hsp40) homolog, subfamily A, member 1    | −0.89922 |
| 15505         | Hsp90b1     | heat shock 105kDa/110kDa protein 1             | −1.21534 |
| 15511         | Hspa1b      | heat shock protein 1B                          | −2.10535 |
| 16150         | Ikbkb       | inhibitor of kappaB kinase beta                | 0.601827 |
| 16639         | Kir8        | killer cell lectin-like receptor, subfamily A, member 8 | 1.072256 |
| 17139         | Magea3      | melanoma antigen, family A, 3                 | −0.67136 |
| 17884         | Cited2      | Chop/p300-interacting transactivator, with Glu/Asp-rich carboxy-terminal domain, 2 | 0.580504 |
| 17873         | Gad45b      | growth arrest and DNA-damage-inducible 45 beta | 0.779545 |
| 17928         | Myog        | myogenin                                       | −1.80681 |
| 18013         | Neurod2     | neurogenic differentiation 2                   | 0.814139 |
| 18331         | Olfr32      | olfactory receptor 32                          | −0.96808 |
| 19127         | Prop1       | paired like homeodomain factor 1               | −0.79344 |
| 19206         | Ptch1       | patched homolog 1                              | −0.92845 |
| 19661         | Rbp3        | retinol binding protein 3, interstitial        | 1.042255 |
| 20302         | Ccl3        | chemokine (C-C motif) ligand 3                 | 2.147125 |
| 20430         | Cytfp1      | cytoplasmic FMRI interacting protein 1          | 0.689064 |
| 20445         | St6galnac1  | ST6 (alpha-N-acetylated-2,3-beta-galactosyl-1,3)-N-acetylgalactosaminidase alpha-2,6-sialyltransferase 1 | −0.64032 |
| 20539         | Slc7a5      | solute carrier family 7 (cationic amino acid transporter, y+ system), member 5 | −0.76003 |
| 20612         | Siglec1     | sialic acid binding Ig-like lectin 1, sialoadhesin | 0.668819 |
| 20776         | Tmie        | transmembrane inner ear                        | 0.849596 |
| 21784         | Tff1        | trefoil factor 1                               | −0.94951 |
| 21924         | Tncn1       | troponin C, cardiac/slow skeletal              | −1.05397 |
| 22213         | Ube2g2      | ubiquitin-conjugating enzyme E2G 2             | −0.6056 |
| 22599         | Slc6a20b    | solute carrier family 6 (neurotransmitter transporter), member 20B | −1.60112 |
| 22691         | Zscan2      | zinc finger and SCAN domain containing 2       | 0.805138 |
| 27412         | Peg12       | paternally expressed 12                        | 0.62484 |
| 30959         | Ddx25       | DEAD (Asp-Glu-Ala-Asp) box polypeptide 25      | −1.41324 |
| 51960         | Kctd18      | potassium channel tetramerisation domain 18    | 0.766087 |
| 52392         | D1Ertd622e  | DNA segment, Chr 1, ERATO Doi 622, expressed   | −0.71485 |
| 53311         | Mybph       | myosin binding protein H                       | −1.5695 |
| 53871         | Pkd212      | polycystic kidney disease 2-like              | 0.633894 |
| 54652         | Cacna1f     | calcium channel, voltage-dependent, alpha 1F subunit | 0.882943 |
| 55981         | Pigh        | phosphatidylinositol glycan anchor biosynthesis, class B | 0.646794 |
| 56293         | Slc35g3     | solute carrier family 35, member G3            | −0.98906 |
| 56544         | Vmn2r1      | vomeronasal 2, receptor 1                      | 1.00315 |
| 56747         | Sez6l       | seizure related 6 homolog like                 | −0.61524 |
| 57271         | Olfr1509    | olfactory receptor 1509                       | −0.79153 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 57355         | BC051019    | cDNA sequence BC051019 | 1.033251 |
| 57429         | Sult5a1     | sulfotransferase family 5A, member 1 | −0.7115 |
| 57764         | Ntn4        | netrin 4 | 0.724402 |
| 57778         | Fmnl1       | formin-like 1 | 1.015557 |
| 58803         | Pga5        | pepsinogen 5, group 1 | −0.74806 |
| 57778         | Rtn4        | reticulon 4 receptor | 1.409669 |
| 6139          | Tmem8c      | transmembrane protein 8C | −0.6415 |
| 6184          | Rps4l       | ribosomal protein S4-like | −0.76974 |
| 6154          | Asrg1       | asparaginase like 1 | −0.6953 |
| 66547         | 2010203P06Rik | RIKEN cDNA 2010203P06 gene | −1.49869 |
| 66784         | Fam187a     | family with sequence similarity 187, member A | 1.564028 |
| 66917         | Chordc1     | cysteine and histidine-rich domain (CHORD)-containing, zinc-binding protein 1 | −0.67857 |
| 66933         | 1700025L06Rik | RIKEN cDNA 1700025L06 gene | 0.83979 |
| 67261         | 29000005J15Rik | RIKEN cDNA 29000005J15 gene | 0.664871 |
| 67316         | 1700037F03Rik | RIKEN cDNA 1700037F03 gene | 0.99754 |
| 67349         | 1700086P04Rik | RIKEN cDNA 1700086P04 gene | 0.841403 |
| 67548         | 4933424M12Rik | RIKEN cDNA 4933424M12 gene | −0.89088 |
| 67553         | Gsctd       | glutathione S-transferase, C-terminal domain containing | 1.160582 |
| 67585         | 4930455J16Rik | RIKEN cDNA 4930455J16 gene | −1.27365 |
| 67603         | Dusp6       | dual specificity phosphatase 6 | −0.65975 |
| 67610         | Rspry1      | ring finger and SPRY domain containing 1 | −0.59499 |
| 67637         | 4930470P17Rik | RIKEN cDNA 4930470P17 gene | −1.41889 |
| 67685         | Dyx1c1      | dyslexia susceptibility 1 candidate 1 homolog (human) | 0.596986 |
| 67914         | Coq9        | coenzyme Q9 homolog (yeast) | 0.596446 |
| 68067         | 3010026009Rik | RIKEN cDNA 3010026009 gene | −1.08629 |
| 68175         | 4930591A17Rik | RIKEN cDNA 4930591A17 gene | −1.09635 |
| 68206         | 2900060N18Rik | RIKEN cDNA 2900060N18 gene | −0.84487 |
| 68208         | 1700039O17Rik | RIKEN cDNA 1700039O17 gene | 1.044673 |
| 68348         | Serpina1f   | serine (or cysteine) peptidase inhibitor, clade A, member 1F | −0.90621 |
| 69241         | Polr2d      | polymerase (RNA) II (DNA directed) polypeptide D | −0.66069 |
| 69294         | Cst13       | cystatin 13 | −1.32139 |
| 69307         | Pxt1        | peroxisomal, testis specific 1 | −0.72362 |
| 69308         | 170007P06Rik | RIKEN cDNA 170007P06 gene | −0.76625 |
| 69384         | Tmem89      | transmembrane protein 89 | 1.226223 |
| 69439         | Mrob4       | maestro heat-like repeat family member 4 | −0.96061 |
| 69732         | 2410018L13Rik | RIKEN cDNA 2410018L13 gene | 0.624498 |
| 69851         | 2010007E15Rik | RIKEN cDNA 2010007E15 gene | 1.098482 |
| 70248         | Dazap1      | DAZ associated protein 1 | 0.61928 |
| 70417         | Megf10      | multiple EGF-like-domains 10 | −0.9536 |
| 70426         | Tek5        | tekin 5 | −0.6079 |
| 70448         | Atad3aos    | ATPase family, AAA domain containing 3A, opposite strand | 0.771291 |
| 70688         | 4921515L22Rik | RIKEN cDNA 4921515L22 gene | −1.18193 |
| 70993         | Prss54      | protease, serine 54 | −0.87092 |
| 71011         | 4933401B06Rik | RIKEN cDNA 4933401B06 gene | 0.707354 |
| 71296         | Crnede      | colorectal neoplasia differentially expressed (non-protein coding) | −0.82775 |
| 71766         | Raver1      | ribonucleoprotein, PTB-binding 1 | 0.836389 |
| 71873         | 2310003N18Rik | RIKEN cDNA 2310003N18 gene | −1.10333 |
| 71918         | Zchc24      | zinc finger, CCHC domain containing 24 | 0.796492 |
| 71939         | Apol6       | apolipoprotein L 6 | 0.990353 |
| 72647         | 2700089I24Rik | RIKEN cDNA 2700089I24 gene | −0.849698 |
| 72753         | 2810442N19Rik | RIKEN cDNA 2810442N19 gene | −0.59812 |
| 72789         | Veph1       | ventricular zone expressed PH-domain-containing 1 | −0.82245 |
| 73335         | 1700047K16Rik | RIKEN cDNA 1700047K16 gene | 1.993123 |
| 73353         | Actr2       | actin-related protein T2 | −1.00022 |
| 73472         | Spata18     | spermatogenesis associated 18 | −0.87035 |
| 73603         | Trps1g5     | transformation related protein 53 target 5 | −0.82983 |
| 73795         | 4930405D01Rik | RIKEN cDNA 4930405D01 gene | −0.84615 |
| 73906         | 4833417C18Rik | RIKEN cDNA 4833417C18 gene | 0.841393 |
| 74314         | 1700120G07Rik | RIKEN cDNA 1700120G07 gene | 1.44201 |
| 75010         | Tmbim7      | transmembrane BAX inhibitor motif containing 7 | −0.81651 |
| 75100         | 4930525D18Rik | RIKEN cDNA 4930525D18 gene | −1.07596 |
| Entrez gene ID | Gene symbol  | Gene name                                         | Log2FC |
|---------------|--------------|---------------------------------------------------|--------|
| 75120         | 4930509E22Rik| RIKEN cDNA 4930509E22 gene                        | −1.07432 |
| 75601         | 1810049I09Rik| RIKEN cDNA 1810049I09 gene                        | −1.47298 |
| 75802         | 4930458D05Rik| RIKEN cDNA 4930458D05 gene                        | 0.666758 |
| 75878         | 4930579P08Rik| RIKEN cDNA 4930579P08 gene                        | −0.91714 |
| 75913         | 4930579G18Rik| RIKEN cDNA 4930579G18 gene                        | −0.98207 |
| 76432         | 2310001H17Rik| RIKEN cDNA 2310001H17 gene                        | 0.823092 |
| 76511         | 2010004M13Rik| RIKEN cDNA 2010004M13 gene                        | −0.77825 |
| 76646         | Wdr38        | WD repeat domain 38                               | −0.68665 |
| 76668         | Mdh1b        | malate dehydrogenase 18, NAD (soluble)           | −1.31239 |
| 76713         | 1700039E15Rik| RIKEN cDNA 1700039E15 gene                        | 0.931671 |
| 77128         | Crebrf       | CREB3 regulatory factor                           | 0.658846 |
| 77252         | 9430338I01Rik| RIKEN cDNA 9430338I01 gene                        | 0.636072 |
| 77521         | Mtus2        | microtubule associated tumor suppressor candidate 2 | −0.75097 |
| 77645         | Pptprtos     | protein tyrosine phosphatase, receptor type T, opposite strand | 1.675105 |
| 78082         | 9230117E06Rik| RIKEN cDNA 9230117E06 gene                        | −1.31484 |
| 78223         | 4930577H14Rik| RIKEN cDNA 4930577H14 gene                        | −0.89476 |
| 78257         | Lrc9         | leucine rich repeat containing 9                 | 0.847065 |
| 81489         | Dnajb1       | DnaJ (Hsp40) homolog, subfamily B, member 1       | −0.67696 |
| 83491         | Prame1       | preferentially expressed antigen in melanoma-like 1 | −1.36516 |
| 83557         | Lin28a       | lin-28 homolog A (C. elegans)                    | 0.674165 |
| 100061        | Lrrc19       | leucine rich containing 19                      | 0.722962 |
| 100855        | Tbc1d14      | TBC1 domain family, member 14                    | 1.260915 |
| 102402        | AA414992     | expressed sequence AA414992                     | 1.11508 |
| 102787        | AW552889     | expressed sequence AW552889                     | −0.78721 |
| 103161        | Apol         | apolipoprotein F                                | 2.630612 |
| 104896        | Ali852580    | expressed sequence Ali852580                    | −0.76398 |
| 105271        | AU017674     | expressed sequence AU017674                     | −0.6189  |
| 108803        | 4933402P03Rik| RIKEN cDNA 4933402P03 gene                       | −0.94556 |
| 110902        | Chrm2a       | cholinergic receptor, nicotinic, alpha polypeptide 2 (neuronal) | 0.618069 |
| 113849        | Vmmr152      | vromeronosal 1 receptor 52                      | −1.06252 |
| 114652        | Ly6g5c       | lymphocyte antigen 6 complex, locus G5C          | −0.93519 |
| 117005        | Olfr74       | olfactory receptor 74                            | −1.04523 |
| 170484        | Nhrs2        | nephrosis 2, podocin                             | −0.99487 |
| 171190        | Vmmr126      | vromeronosal 1 receptor 26                      | −1.05033 |
| 171230        | Vmmr1231     | vromeronosal 1 receptor 231                     | −1.11209 |
| 171255        | Vmmr1201     | vromeronosal 1 receptor 201                     | 1.43574  |
| 171257        | Vmmr1195     | vromeronosal 1 receptor 195                     | −0.82871 |
| 171273        | Vmmr1217     | vromeronosal 1 receptor 217                     | −0.68616 |
| 171279        | Vmmr1216     | vromeronosal 1 receptor 216                     | −0.83986 |
| 171469        | Gpr3711      | G protein-coupled receptor 37-like 1             | −1.00965 |
| 193740        | Hspa1a       | heat shock protein 1A                            | −1.78004 |
| 195555        | Pramef6      | PRAME family member 6                           | 1.168758 |
| 195564        | Skint3       | selection and upkeep of intraepithelial T cells 3 | −0.91023 |
| 210373        | A530095I07Rik| RIKEN cDNA A530095I07 gene                       | −0.90452 |
| 211383        | Amer3        | APC membrane recruitment 3                      | −1.01366 |
| 211770        | Trib1        | tribbles homolog 1 (Drosophila)                  | −0.81808 |
| 212332        | AA474331     | expressed sequence AA474331                    | −0.96037 |
| 214685        | Chadl        | chondroadherin-like                             | −0.61683 |
| 214899        | Kdms5a       | lysine (K)-specific demethylase 5A               | 0.640463 |
| 216766        | Gemin5       | gem (nuclear organelle) associated protein 5    | 1.158108 |
| 217695        | Zfyve1       | zinc finger, FYVE domain containing 1            | 0.640463 |
| 218341        | Rfesd        | Rieske (Fe-S) domain containing                 | 0.761426 |
| 218772        | Barb         | retinoic acid receptor, beta                    | −0.63463 |
| 223262        | Timm8a2      | translocale of inner mitochondrial membrane 8A2  | 0.763222 |
| 224754        | H2-M11       | histocompatibility 2, M region locus 11          | 1.200937 |
| 225579        | Stc27a6      | solute carrier family 27 (fatty acid transporter), member 6 | −1.53388 |
| 226356        | Cflap221     | cilia and flagella associated protein 221       | −0.60972 |
| 226894        | Cerkl        | ceramide kinase-like                            | 1.033832 |
| 229615        | Pias3        | protein inhibitor of activated STAT 3            | 0.627799 |
| 231070        | Insig1       | insulin induced gene 1                          | 0.823299 |
| 231503        | Tmem150c     | transmembrane protein 150C                      | 1.284752 |
| 233210        | Prr12        | proline rich 12                                 | 0.604208 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 233230        | Mrgrpr4     | MAS-related GPR, member B4 | −0.99996 |
| 233544        | A63009E10Rik| RIKEN cDNA A63009E10 gene | 0.895014 |
| 235493        | Fam214a     | family with sequence similarity 214, member A | 0.747692 |
| 237716        | Gpr75       | G protein-coupled receptor 75 | 0.60654 |
| 237831        | Slc13a5     | solute carrier family 13 (sodium-dependent citrate transporter), member 5 | −0.75315 |
| 239167        | Synb        | syncytin b | −1.08261 |
| 239368        | Erich5      | glutamate rich 5 | 1.148509 |
| 240726        | Slco5a1     | solute carrier organic anion transporter family, member 5A | −0.79222 |
| 241589        | D430041D05Rik| RIKEN cDNA D430041D05 gene | −1.10155 |
| 242100        | Pglyrp3     | peptidoglycan recognition protein 3 | −1.08284 |
| 244911        | C2cd4a      | C2 calcium-dependent domain containing 4A | −0.9676 |
| 252864        | Dusp15      | dual specificity phosphatase-like 15 | −0.78664 |
| 252868        | Odf4        | outer dense fiber of sperm tails 4 | −0.79222 |
| 257888        | Olfr1386    | olfactory receptor 1386 | −1.78702 |
| 258046        | Olfr951     | olfactory receptor 951 | −1.127 |
| 258069        | Olfr787     | olfactory receptor 787 | −0.88202 |
| 258224        | Olfr1358    | olfactory receptor 1358 | −0.84454 |
| 258236        | Olfr391-ps  | olfactory receptor 391, pseudogene | −0.70202 |
| 258285        | Olfr122     | olfactory receptor 122 | −1.24794 |
| 258290        | Olfr1143    | olfactory receptor 1143 | −0.7162 |
| 258366        | Olfr434     | olfactory receptor 434 | −0.7381 |
| 258375        | Olfr794     | olfactory receptor 794 | −0.85019 |
| 258507        | Olfr96      | olfactory receptor 96 | −0.87258 |
| 258589        | Olfr703     | olfactory receptor 703 | −0.66525 |
| 258590        | Olfr702     | olfactory receptor 702 | −1.59164 |
| 258677        | Olfr76      | olfactory receptor 76 | −0.91511 |
| 258716        | Olfr424     | olfactory receptor 424 | −1.15653 |
| 258750        | Olfr551     | olfactory receptor 551 | −0.69055 |
| 258825        | Olfr975     | olfactory receptor 975 | −0.91639 |
| 258877        | Olfr1395    | olfactory receptor 1395 | −0.93299 |
| 258926        | Olfr476     | olfactory receptor 476 | −1.66123 |
| 259006        | Olfr399     | olfactory receptor 399 | −1.18 |
| 259021        | Olfr1054    | olfactory receptor 1054 | −0.93971 |
| 268390        | Ahsa2       | AHA1, activator of heat shock protein ATPase 2 | −0.60857 |
| 268782        | Agxt2       | alanine-glyoxylate aminotransferase 2 | 0.692485 |
| 269023        | Zfp608      | zinc finger protein 608 | 0.679619 |
| 269604        | Gpr157      | G protein-coupled receptor 157 | 0.910932 |
| 269630        | S031425E22Rik| RIKEN cDNA S031425E22 gene | 0.615826 |
| 270185        | BC043934    | cDNA sequence BC043934 | 0.589127 |
| 271697        | Cdk15       | cyclin-dependent kinase 15 | −0.72819 |
| 271813        | Agb2       | ATP/GTP binding protein-like 2 | 1.805137 |
| 272589        | Tbc1       | tubulin folding cofactor E-like | 0.651273 |
| 277496        | Lkaear1     | LKAEAR motif containing 1 (LKAEAR murine motif) | −1.31271 |
| 279499        | Kctd19      | potassium channel tetramerisation domain containing 19 | 1.83617 |
| 286940        | Flnb       | filamin, beta | −0.81259 |
| 319433        | Serpine3    | serpin peptidase inhibitor, clade E (nexin, plasminogen activator inhibitor type 1), member 3 | −1.00758 |
| 319525        | D330013E07Rik| RIKEN cDNA D330013E07 gene | 0.69013 |
| 319587        | 4930539J05Rik| RIKEN cDNA 4930539J05 gene | 0.604507 |
| 319615        | Zfp944      | zinc finger protein 944 | 0.631042 |
| 319805        | C130073E24Rik| RIKEN cDNA C130073E24 gene | −1.43705 |
| 319839        | A530002G20Rik| RIKEN cDNA A530002G20 gene | 0.934835 |
| 319990        | C730014E05Rik| RIKEN cDNA C730014E05 gene | −1.10032 |
| 320099        | BC106179    | cDNA sequence BC106179 | 0.833723 |
| 320178        | 4921529L05Rik| RIKEN cDNA 4921529L05 gene | 0.934835 |
| 320223        | A930038B10Rik| RIKEN cDNA A930038B10 gene | 2.479141 |
| 320333        | D830030K20Rik| RIKEN cDNA D830030K20 gene | 0.806415 |
| 320771        | C030040A22Rik| RIKEN cDNA C030040A22 gene | 1.11646 |
| 320790        | Chd7       | chromodomain helicase DNA binding protein 7 | 0.595491 |
| 320940        | Atp11c     | ATPase, class VI, type 11C | 0.606641 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 327780        | 4933439G19Rik | RIKEN cDNA 4933439G19 gene | -0.81745 |
| 328231        | Gm5082      | predicted gene 5082 | 1.265112 |
| 328354        | Gm5087      | predicted gene 5087 | -0.95851 |
| 329509        | 1810024B03Rik | RIKEN cDNA 1810024B03 gene | 0.86008 |
| 329679        | Fnip2       | folliculin interacting protein 2 | 0.684577 |
| 330031        | Gm5106      | predicted gene 5106 | -1.01833 |
| 330149        | Hfm1        | HFM1, ATP-dependent DNA helicase homolog (S. cerevisiae) | -1.1337 |
| 330183        | Gm16063     | predicted gene 16063 | -0.7011 |
| 331532        | Tceal5      | transcription elongation factor A (SII)-like 5 | -0.77416 |
| 335371        | Oxt2b       | 3-oxoacid CoA transferase 2B | 1.40638 |
| 338150        | Spag6l      | sperm associated antigen 6 like | -2.56876 |
| 338152        | Mamdc4      | MAM domain containing 4 | -0.81521 |
| 338154        | Gm1661      | predicted gene 1661 | -0.58549 |
| 338205        | Ces3a       | carboxylesterase 3A | 2.49537 |
| 3382202       | LOC382202   | uncharacterized LOC382202 | -1.22603 |
| 3382253       | Cdk5        | cyclin-dependent kinase-like 5 | -1.18451 |
| 3382551       | Cd300lh     | CD300 antigen like family member H | -0.8993 |
| 3383243       | Olf1r128    | olfactory receptor 128 | -0.81569 |
| 3384185       | Arf9        | ADP-riboseylation factor-like 9 | -0.79354 |
| 3385109       | Igk4v-72    | immunoglobulin kappa chain variable 4-72 | 0.782378 |
| 3385343       | Rhox1       | reproductive homeobox 1 | -0.74473 |
| 3387285       | Hcrt2       | hypocretin (orexin) receptor 2 | -1.70246 |
| 3403345       | BC037438    | cDNA sequence BC037438 | -0.61835 |
| 3404284       | Vmn1r59     | vomeronasal 1 receptor 59 | -1.04937 |
| 3404580       | Al117821    | expressed sequence Al117821 | 0.788304 |
| 3408065       | Zfp456      | zinc finger protein 456 | 0.689588 |
| 3410066       | BC037032    | cDNA Sequence BC037032 | 0.679343 |
| 3410475       | BC049265    | cDNA sequence BC049265 | -1.08853 |
| 3414284       | G630064G18Rik | RIKEN cDNA G630064G18 gene | 0.768383 |
| 3428282       | LOC432842   | uncharacterized LOC432842 | -1.10406 |
| 3433873       | Gm9903      | predicted gene 9903 | 0.774662 |
| 3442282       | Gm5600      | predicted gene 5600 | -0.80092 |
| 3442828       | Gm5608      | predicted gene 5608 | 0.680106 |
| 3447974       | Gm5640      | predicted gene 5640 | -0.77576 |
| 345766        | Tnni3k      | TNNI3 interacting kinase | -0.98123 |
| 442825        | A230083G16Rik | RIKEN cDNA A230083G16 gene | 0.83851 |
| 474160        | Platr17     | pluripotency associated transcript 17 | -0.72374 |
| 504186        | Chnra10     | cholinergic receptor, nicotinic, alpha polypeptide 10 | -2.03423 |
| 544763        | Hbq1b       | hemoglobin, theta 1b | -0.97634 |
| 544808        | AA623943    | expressed sequence AA623943 | -1.17616 |
| 544881        | BB287469    | expressed sequence BB287469 | -0.75438 |
| 546096        | Gm29682     | predicted gene, 29682 | -0.95289 |
| 574519        | Vax2os      | ventral anterior homeobox 2, opposite strand | -0.752 |
| 622629        | Gm10318     | predicted gene 10318 | 0.763521 |
| 622733        | Olf1r764-ps1 | olfactory receptor 764, pseudogene 1 | -1.0235 |
| 626275        | A930012L18Rik | RIKEN cDNA A930012L18 gene | 0.800218 |
| 626299        | Vmn1r194    | vomeronasal 1 receptor 194 | -1.05125 |
| 628185        | Vmn2r112    | vomeronasal 2, receptor 112 | -1.75223 |
| 628422        | Vmn2r58     | vomeronasal 2, receptor 58 | -0.95768 |
| 632534        | Vmn1r191    | vomeronasal 1 receptor 191 | -1.16439 |
| 632687        | March10     | membrane-associated ring finger (C3HC4) | -0.69425 |
| 639390        | BC094435    | cDNA sequence BC094435 | 0.855954 |
| 653030        | Arhgap27os3 | Rho GTPase activating protein 27, opposite strand 3 | -0.72239 |
| 665413        | Gm7628      | predicted gene 7628 | 0.705552 |
| 665466        | Gm7644      | predicted gene 7644 | 0.873983 |
| 665797        | Gm7788      | glyceraldehyde-3-phosphate dehydrogenase pseudogene | -1.09479 |
| 666919        | Gm8363      | non-SMC condensin II complex, subunit H2 pseudogene | 1.21668 |
| 668308        | Gm13288     | predicted gene 13288 | 0.586814 |
| 723792        | Pinc        | pregnancy induced noncoding RNA | -0.80514 |
| 791273        | B630006N21Rik | RIKEN cDNA B630006N21 gene | 0.896019 |
| 791292        | Gm9936      | predicted gene 9936 | -0.92668 |
| 791338        | Gm10190     | predicted gene 10190 | -0.63181 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 791359        | Gm9961      | predicted gene 9961 | −0.77249 |
| 791394        | Gm9878      | predicted gene 9878  | 1.279629 |
| 791415        | Gm12500     | predicted gene 12500 | 0.63538  |
| 100036523     | Gm16982     | predicted gene 16982 | 1.878863 |
| 100036541     | Gm9744      | predicted gene 9744  | 0.840898 |
| 100038512     | Gm12542     | predicted gene 12542 | −0.85287 |
| 100038580     | 6820445E23Rik | RIKEN cDNA 6820445E23 gene | 0.704537 |
| 100038608     | Gm10389     | predicted gene 10389 | −1.62243 |
| 100038721     | Gm10781     | predicted gene 10781 | −0.66451 |
| 100038736     | Gm10209     | predicted gene 10209 | 0.818848 |
| 100038752     | Gm10825     | predicted gene 10825 | −0.9288  |
| 100038780     | 6820445E23Rik | RIKEN cDNA 6820445E23 gene | 0.704537 |
| 100038808     | Gm10389     | predicted gene 10389 | −1.62243 |
| 100038821     | Gm10781     | predicted gene 10781 | −0.66451 |
| 100038831     | Gm10753     | predicted gene 10753 | −0.93414 |
| 100038856     | Gm10209     | predicted gene 10209 | 0.818848 |
| 100038872     | Tceal7      | transcription elongation factor A (SII)-like 7 | −1.177  |
| 100041230     | Hist1h4m    | histone cluster 1, H4m | −0.84498 |
| 100041562     | Gm14762     | predicted gene 14762 | 0.804936 |
| 100041605     | Gm3428      | predicted gene 3428  | −0.60764 |
| 100042202     | Gm3718      | predicted gene 3718  | 0.702933 |
| 100042679     | Gm16386     | zinc finger protein 946 pseudogene | 0.667103 |
| 100042769     | Gm16386     | zinc finger protein 946 pseudogene | 0.667103 |
| 100042769     | Gm10697     | predicted gene 10697 | 0.726064 |
| 100042960     | Gm4131      | predicted gene 4131  | −1.06387 |
| 100043063     | Gm4203      | predicted gene 4203  | 1.02296  |
| 100043123     | Gm11710     | predicted gene 11710 | −0.73285 |
| 100043314     | Tig1        | T cell immunoreceptor with Ig and ITIM domains | 0.996306 |
| 100043407     | Gm4419      | predicted gene 4419  | 0.650398 |
| 100043450     | AA387883    | expressed sequence AA387883 | −1.05861 |
| 100043604     | Vmn1r132    | vomeronasal 1 receptor 132 | 2.563148 |
| 100043831     | Gm4681      | predicted gene 4681  | −0.95104 |
| 100049155     | D930027P08Rik | RIKEN cDNA D930027P08 gene | 0.673712 |
| 100126224     | Gm11747     | predicted gene 11747 | 0.777315 |
| 100216455     | Gm14124     | predicted gene 14124 | 0.631449 |
| 100359411     | Gm9798      | predicted gene 9798  | 0.772542 |
| 100379611     | Gm11767     | predicted gene 11767 | 1.126146 |
| 100502644     | AA419673    | expressed sequence AA419673 | −0.88892 |
| 100502868     | Gm20597     | predicted gene 20597 | 0.782722 |
| 100502923     | Gm17619     | predicted gene 17619 | 0.793983 |
| 100502967     | Sper4c      | spermatogenesis associated glutamate (E)-rich protein 4c | 0.674691 |
| 100503007     | Gm19500     | predicted gene 19500 | −1.23075 |
| 100503292     | Gm12279     | predicted gene 12279 | 1.207112 |
| 100503307     | Gm15408     | predicted gene 15408 | −1.05318 |
| 100503347     | Gm19648     | predicted gene 19648 | 0.592679 |
| 100503474     | Platr22     | pluripotency associated transcript 22 | −1.87808 |
| 100503481     | 4930453H23Rik | RIKEN cDNA 4930453H23 gene | −0.89361 |
| 100503498     | Gm16675     | predicted gene, 16675 | 0.74548  |
| 100503584     | Zfp534      | zinc finger protein 534 | 0.686315 |
| 100503790     | Gm19897     | predicted gene, 19897 | −0.94176 |
| 100504007     | Gm15787     | predicted gene 15787 | 0.88342  |
| 100504207     | Arhgap33os  | Rho GTPase activating protein 33, opposite strand | 1.28465 |
| 100504231     | Gm15708     | predicted gene 15708 | 0.705311 |
| 100504464     | E230016K23Rik | RIKEN cDNA E230016K23 gene | 0.666816 |
| 100504734     | Gm16794     | predicted gene, 16794 | 0.718494 |
| 101055939     | LOC101055939 | kinesin-like protein KIF19 | −0.73348 |
| 101055983     | Gm14569     | predicted gene 14569 | −0.85428 |
| 101056219     | LOC101056219 | uncharacterized LOC101056219 | 0.693252 |
| 102632036     | Gm30211     | predicted gene, 30211 | −1.35883 |
| 102632061     | Gm30234     | predicted gene, 30234 | −0.92374 |
| 102632158     | Gm30305     | predicted gene, 30305 | −0.87698 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 102632434     | Gm30509     | predicted gene, 30509 | -0.59183 |
| 102632567     | Gm30606     | predicted gene, 30606 | -1.45024 |
| 102633273     | Gm31137     | predicted gene, 31137 | -0.92847 |
| 102633545     | Gm31344     | predicted gene, 31344 | -0.68016 |
| 102633682     | Gm31447     | predicted gene, 31447 | -0.81639 |
| 102633740     | Gm31493     | predicted gene, 31493 | -0.99917 |
| 102633780     | Gm28321     | predicted gene 28321  | 0.833415 |
| 102633974     | Gm28905     | predicted gene 28905 | -1.02829 |
| 102634240     | Gm31872     | predicted gene, 31872 | 0.739554 |
| 102634384     | Gm31980     | predicted gene, 31980 | -0.60487 |
| 102634445     | Gm32026     | predicted gene, 32026 | 0.893706 |
| 102634642     | Gm32178     | predicted gene, 32178 | 0.716286 |
| 102634759     | Gm32265     | predicted gene, 32265 | -0.76659 |
| 102634913     | Gm32070     | predicted gene 32070  | -0.73195 |
| 102634922     | Gm32391     | predicted gene, 32391 | 0.617974 |
| 102634964     | Gm24474     | predicted gene, 24474  | -0.95048 |
| 102635707     | LOC102635707 | uncharacterized LOC102635707 | -1.14721 |
| 102636049     | Gm33228     | predicted gene, 33228  | -1.45513 |
| 102636446     | Gm33509     | predicted gene, 33509  | 1.151381 |
| 102636463     | Gm38488     | predicted gene, 38488  | 0.790117 |
| 102636681     | Gm11342     | predicted gene 11342  | 1.225075 |
| 102636777     | LOC102636777 | uncharacterized LOC102636777 | -1.35573 |
| 102637182     | Gm34059     | predicted gene, 34059 | -1.15365 |
| 102637349     | Gm34184     | predicted gene, 34184  | -0.65116 |
| 102637460     | Gm34263     | predicted gene, 34263  | -1.01607 |
| 102637485     | Gm34280     | predicted gene, 34280  | -0.80203 |
| 102637601     | Gm34368     | predicted gene, 34368  | 1.341957 |
| 102637900     | Gm34596     | predicted gene, 34596  | 0.726827 |
| 102638146     | Gm34780     | predicted gene, 34780  | -0.69991 |
| 102638234     | Gm34843     | predicted gene, 34843  | 0.712561 |
| 102638424     | Gm34995     | predicted gene, 34995  | -0.6454 |
| 102638626     | Gm35147     | predicted gene, 35147  | 0.631503 |
| 102638746     | Gm35236     | predicted gene, 35236  | -2.02371 |
| 102640039     | Gm36208     | predicted gene, 36208  | -0.66706 |
| 102640419     | Gm16322     | predicted gene 16322  | 0.770732 |
| 102640765     | Gm36757     | predicted gene, 36757  | 0.746976 |
| 102640779     | LOC102640779 | uncharacterized LOC102640779 | 0.871822 |
| 102641312     | LOC102641312 | cytochrome P450 3A41-like | -1.07723 |
| 102641681     | LOC102641681 | uncharacterized LOC102641681 | -1.06471 |
| 102641860     | Gm26578     | predicted gene, 26578  | -0.64534 |
| 102641978     | LOC102641978 | uncharacterized LOC102641978 | 0.598838 |
| 102642028     | LOC102642028 | uncharacterized LOC102642028 | -1.1585 |
| 102642104     | LOC102642104 | uncharacterized LOC102642104 | -0.65471 |
| 102642578     | LOC102642578 | uncharacterized LOC102642578 | 0.962956 |
| 102642723     | LOC102642723 | uncharacterized LOC102642723 | -0.59406 |
| 105242927     | Gm38999     | predicted gene, 38999  | -0.60384 |
| 102523155     | Gm26795     | predicted gene, 26795  | -0.91603 |
| 102543232     | Gm40798     | predicted gene, 40798  | 0.663404 |
| 102546049     | Gm41408     | predicted gene, 41408  | 0.8216 |
| 102546057     | LOC105246057 | IgE-binding protein-like | 0.672734 |
| 102546506     | LOC105246506 | uncharacterized LOC105246506 | -0.70599 |
| 102547651     | LOC105247651 | uncharacterized LOC105247651 | 0.630204 |
| Entrez gene ID | Gene symbol | Gene name                                                                 | Log2FC |
|---------------|-------------|---------------------------------------------------------------------------|--------|
| 11304         | Abca4       | ATP-binding cassette, sub-family A (ABC1), member 4                         | −0.66413 |
| 11428         | Aco1        | aconitase 1                                                                | 0.725006 |
| 11496         | Adam22      | a disintegrin and metallopeptidase domain 22                              | −0.69335 |
| 11498         | Adam4       | a disintegrin and metallopeptidase domain 4                                | 0.810901 |
| 11549         | Adra1a      | adrenergic receptor, alpha 1a                                              | −0.95816 |
| 11648         | Akl3        | alkaline phosphatase 3, intestine, not Mn requiring                        | −1.3038 |
| 11652         | Akt2        | thymoma viral proto-oncogene 2                                           | 0.802731 |
| 11684         | Alox12      | arachidonate 12-lipoxygenase                                               | −1.24333 |
| 11686         | Alox12b     | arachidonate 12-lipoxygenase, 12R type                                    | −2.15796 |
| 11688         | Alox8       | arachidonate 8-lipoxygenase                                               | −2.48602 |
| 11765         | Ap1g1       | adaptor protein complex AP-1, gamma 1 subunit                             | 0.803441 |
| 11789         | Apc         | adenomatosis polyposis coli                                               | 0.608252 |
| 11989         | Slc7a3      | solute carrier family 7 (cationic amino acid transporter, y+ system), member 3 | −1.63447 |
| 12012         | Baat        | bile acid-Coenzyme A: amino acid N-acyltransferase                        | 0.757634 |
| 12023         | Barx2       | BarH-like homeobox 2                                                       | −1.39414 |
| 12035         | Bcat1       | branched chain aminotransferase 1, cytosolic                              | −1.27812 |
| 12154         | Bmp10       | bone morphogenetic protein 10                                              | −1.15523 |
| 12168         | Bmpr2       | bone morphogenetic protein receptor, type II (serine/threonine kinase)    | 0.808147 |
| 12180         | Smo1        | SET and MYND domain containing 1                                           | −0.86328 |
| 12296         | Cacnb2      | calcium channel, voltage-dependent, beta 2 subunit                        | 1.086221 |
| 12631         | Cfl1c       | coatomer protein complex subunit alpha                                     | 0.659294 |
| 12660         | Chka        | choline kinase alpha                                                       | 0.672888 |
| 12704         | Cit         | citron                                                                    | 0.858472 |
| 12750         | Clk4        | CDC like kinase 4                                                          | −0.70824 |
| 12776         | Ccr8        | chemokine (C-C motif) receptor 8                                           | −0.9491 |
| 12836         | Col7a1      | collagen, type VII, alpha 1                                               | −1.37157 |
| 12847         | Copa        | coatomer protein complex subunit alpha                                     | 0.659294 |
| 12922         | Crhr2       | corticotropin releasing hormone receptor 2                                 | −0.83929 |
| 12931         | Cri1        | cytokine-receptor-like factor 1                                           | −2.01808 |
| 12965         | Crygb       | crystallin, gamma B                                                        | −1.18537 |
| 12966         | Crygc       | crystallin, gamma C                                                        | 0.60513 |
| 12992         | Csr1a2b     | casein alpha s2-like B                                                     | −1.13408 |
| 13162         | Slc6a3      | solute carrier family 6 (neurotransmitter transporter, dopamine), member 3 | −1.15454 |
| 13168         | Dbl5        | diazepam binding inhibitor-like 5                                          | −0.6261 |
| 13185         | Dsc3        | Down syndrome critical region gene 3                                       | 0.653566 |
| 13207         | Ddx5        | DEAD (Asp-Glu-Ala-Asp) box polypeptide 5                                   | 0.698294 |
| 13367         | Diap1       | diaphanous homolog 1 (Drosophila)                                         | 1.034071 |
| 13518         | Dst         | dystonin                                                                   | 0.841131 |
| 13522         | Adam2       | a disintegrin and metallopeptidase domain 28                              | −0.98253 |
| 13618         | Ednrb       | endothelin receptor type B                                                 | 0.846174 |
| 13619         | Phc1        | polyhomeotic-like 1 (Drosophila)                                           | −0.62828 |
| 13645         | Egf         | epidermal growth factor                                                    | −1.01864 |
| 13806         | Eno1        | enolase 1, alpha non-neuron                                                 | 0.683879 |
| 13821         | Epb4.111    | erythrocyte protein band 4.1 like 1                                        | 0.592088 |
| 13822         | Epb4.112    | erythrocyte protein band 4.1 like 2                                        | 0.632162 |
| 13849         | Ephx1       | epoxide hydrolase 1, microsomal                                            | −0.61294 |
| 13860         | Ep8         | epidermal growth factor receptor pathway substrate 8                      | 0.78414 |
| 13882         | Er1         | estrogen receptor 1 (alpha)                                                | −0.60031 |
| 14013         | Mecom       | MDS1 and EV1 complex locus                                                 | 0.782283 |
| 14043         | Ext2        | exostoses (multiple) 2                                                     | 0.625909 |
| 14050         | Eya3        | eyes absent 3 homolog (Drosophila)                                         | 0.591668 |
| 14264         | Fmod        | fibromodulin                                                               | −0.60553 |
| 14275         | Foli        | folate receptor 1 (adult)                                                  | −0.60525 |
| 14343         | Fut1        | fucosyltransferase 1                                                       | −1.19602 |
| 14346         | Fut4-ps1    | fucosyltransferase 4, pseudogene 1                                        | −0.70855 |
| 14367         | Fzd5        | frizzled homolog 5 (Drosophila)                                            | 0.653371 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 14459         | Gast        | gastrin   | -1.77078 |
| 14463         | Gata4       | GATA binding protein 4 | -1.75728 |
| 14552         | Gdap7       | ganglioside-induced differentiation-associated-protein 7 | 0.801168 |
| 14602         | Ghrhr       | growth hormone releasing hormone receptor | -0.99429 |
| 14619         | Gjb2        | gap junction protein, beta 2 | -1.53492 |
| 14628         | Gstm1       | osteopetrosis associated transmembrane protein 1 | -0.6966 |
| 14659         | Glrpl1      | glutamine repeat protein 1 | -0.73874 |
| 14664         | Slc6a9      | solute carrier family 6 (neurotransmitter transporter, glycine), member 9 | -0.67572 |
| 14686         | Gnat2       | guanine nucleotide binding protein, alpha transducing 2 | -0.96149 |
| 14788         | Gpr162      | G protein-coupled receptor 162 | -0.90054 |
| 15260         | Hira        | histone cell cycle regulation defective homolog A (S. cerevisiae) | 0.740336 |
| 15277         | Hk2         | hexokinase 2 | -0.66671 |
| 15381         | Hmrncp      | heterogeneous nuclear ribonucleoprotein C | 0.672078 |
| 15401         | Hoxa4       | homeobox A4 | 0.824422 |
| 15423         | Hoxc4       | homeobox C4 | -2.12955 |
| 15441         | Hp1bp3      | heterochromatin protein 1, binding protein 3 | 0.682279 |
| 15482         | Hspa11      | heat shock protein 1-like | -1.394 |
| 15495         | Hsd3b4      | hydroxy-delta-5-steroid dehydrogenase, 3 beta- and steroid delta-isomerase 4 | -1.67818 |
| 15932         | Idua        | iduronidase, alpha-L- | 0.597911 |
| 16162         | Il12rb2     | interleukin 12 receptor, beta 2 | -1.01715 |
| 16178         | Il1r2       | interleukin 1 receptor, type II | -1.83541 |
| 16187         | Il3         | interleukin 3 | -2.15191 |
| 16333         | Ins1        | insulin 1 | -2.1446 |
| 16337         | Insr        | insulin receptor | 0.602833 |
| 16402         | Itga5       | integrin alpha 5 (fibronectin receptor alpha) | 1.552823 |
| 16415         | Itgb2l      | integrin beta 2-like | -1.39667 |
| 16468         | Jarid2      | jumonji, AT rich interactive domain 2 | 0.87411 |
| 16554         | Kif13b      | kinesin family member 13B | 0.872857 |
| 16640         | Klrb9       | killer cell lectin-like receptor subfamily A, member 9 | -0.72199 |
| 16641         | Klrc1       | killer cell lectin-like receptor subfamily C, member 1 | -1.64803 |
| 16661         | Krt10       | keratin 10 | -2.78614 |
| 16678         | L1cam       | L1 cell adhesion molecule | 0.808527 |
| 16689         | Lhx1        | LIM homeobox protein 1 | -1.33538 |
| 16674         | Lhx6        | LIM homeobox protein 6 | 0.833857 |
| 16971         | Lrp1        | low density lipoprotein receptor-related protein 1 | -0.65473 |
| 16979         | Lrrn1       | leucine rich repeat protein 1, neuronal | -2.835808 |
| 17002         | Ltf         | lactotransferrin | -3.67152 |
| 17184         | Matr3       | matrin 3 | 0.613994 |
| 17188         | Maz         | MYC-associated zinc finger protein (purine-binding transcription factor) | 0.716238 |
| 17240         | Mdfi        | MyoD family inhibitor | -1.47494 |
| 17300         | Foxc1       | forkhead box C1 | -1.72822 |
| 17311         | Kitl        | kit ligand | 0.738123 |
| 17391         | Mmp24       | matrix metalloproteinase 24 | 1.012113 |
| 17863         | Myb         | myeloblastosis oncogene | 0.958352 |
| 18145         | Npc1        | Niemann-Pick type C1 | 0.671266 |
| 18292         | Sebox       | SEBOX homeobox | -1.03382 |
| 18314         | Olfr17      | olfactory receptor 17 | -0.31665 |
| 18315         | Olfr18      | olfactory receptor 18 | -1.44533 |
| 18359         | Olfr59      | olfactory receptor 59 | -2.08316 |
| 18365         | Olfr65      | olfactory receptor 65 | -1.93793 |
| 18439         | P2rx7       | purinergic receptor P2X, ligand-gated ion channel 7 | -1.05118 |
| 18554         | Pcsk7       | proprotein convertase subtilisin/kexin type 7 | 0.596425 |
| 18571         | Pdcd6ip     | programmed cell death 6 interacting protein | 0.688597 |
| 18576         | Pde3b       | phosphodiesterase 3B, cGMP-inhibited | 0.699416 |
| 18599         | Padi1       | peptidyl arginine deiminase, type I | -1.40412 |
| 18600         | Padi2       | peptidyl arginine deiminase, type II | -0.92956 |
| 18626         | Per1        | period circadian clock 1 | -0.618 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 18708 | Pik3r1 | phosphatidylinositol 3-kinase, regulatory subunit, polypeptide 1 (p85 alpha) | 0.711339 |
| 18753 | Prkcd | protein kinase C, delta | 0.684102 |
| 18767 | Pkia | protein kinase inhibitor, alpha | −0.89003 |
| 19152 | Prtn3 | proteinase 3 | −1.40275 |
| 19206 | Ptc1 | patched homolog 1 | 1.232834 |
| 19208 | Ptcra | pre T cell antigen receptor alpha | −0.96217 |
| 19229 | Pik2b | PROTK2 protein tyrosine kinase 2 beta | 0.605902 |
| 18767 | Pkia | protein kinase inhibitor, alpha | −0.80903 |
| 19152 | Prtn3 | proteinase 3 | −1.40275 |
| 19206 | Ptc1 | patched homolog 1 | 1.232834 |
| 19208 | Ptcra | pre T cell antigen receptor alpha | −0.96217 |
| 19229 | Pik2b | PROTK2 protein tyrosine kinase 2 beta | 0.605902 |
| 19337 | Rab33a | RAB33A, member RAS oncogene family | −0.93374 |
| 19344 | Rab5b | RAB5B, member RAS oncogene family | 0.657767 |
| 19358 | Rad23a | RAD23a homolog (S. cerevisiae) | 0.585802 |
| 19377 | Ral1 | retinoic acid induced 1 | 0.757726 |
| 19400 | Rapsn | receptor-associated protein of the synapse | −1.07501 |
| 19649 | Robo3 | roundabout homolog 3 (Drosophila) | −0.87983 |
| 19654 | Rbm6 | RNA binding motif protein 6 | 0.778903 |
| 19672 | Rcn1 | reticulocalbin 1 | −0.611 |
| 19724 | Rfx1 | regulatory factor X, 1 (influences HLA class II expression) | 0.763957 |
| 19730 | Ralgd5 | ral guanine nucleotide dissociation stimulator | 0.760822 |
| 20354 | Sema4d | sema domain, immunoglobulin domain (lg), transmembrane domain (TM) and short cytoplasmic domain, (semahorin) 4D | −0.86875 |
| 20430 | Cyflp1 | cytoplasmic FMR1 interacting protein 1 | 0.717621 |
| 20471 | Sip1 | sine oculis-related homeobox 1 | −2.06588 |
| 20474 | Sip4 | sine oculis-related homeobox 4 | −2.28741 |
| 20482 | Ski | SKI-like | 0.743497 |
| 20538 | Slc6a2 | solute carrier family 6 (neurotransmitter transporter, noradrenaline), member 2 | −1.95069 |
| 20586 | Smarca4 | SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 4 | 0.823711 |
| 20616 | Snap91 | synaptosomal-associated protein 91 | −1.00674 |
| 20652 | Sox1 | sterol O-acyltransferase 1 | 0.763694 |
| 20661 | Solt1 | sortilin 1 | 0.744495 |
| 20680 | Soy7 | SRY (sex determining region Y)-box 7 | −1.5204 |
| 20682 | Soy9 | SRY (sex determining region Y)-box 9 | 0.92932 |
| 20750 | Spp1 | secreted phosphoprotein 1 | −2.47243 |
| 20770 | Src | Rous sarcoma oncogene | 0.618214 |
| 20858 | Sc2 | stanniolcalcin 2 | −1.06827 |
| 20913 | Soxbp4 | syntaxin binding protein 4 | 0.717937 |
| 20917 | Sgcu1 | succinate-Coenzyme A ligase, GDP-forming, beta subunit | 0.991799 |
| 20962 | Sycp3 | synaptonemal complex protein 3 | 1.533723 |
| 21337 | Tacl | tachykinin receptor 2 | 0.860064 |
| 21372 | Tbl1x | transducin (beta)-like 1 X-linked | 0.594507 |
| 21784 | Tff1 | trefoil factor 1 | −0.86501 |
| 21816 | Tgm1 | transglutaminase 1, K polypeptide | −2.39971 |
| 21946 | Pglyrp1 | peptidoglycan recognition protein 1 | 0.672286 |
| 21951 | Tnks | tankyrase, TRF1-interacting ankyrin-related ADP-ribose polymerase | 0.624257 |
| 21987 | Tpd52l1 | tumor protein D52-like 1 | −0.78489 |
| 22042 | Terc | transferrin receptor | 0.631074 |
| 22059 | Trp53 | transformation related protein 53 | 0.607334 |
| 22239 | Ug58a | UDP galactosyltransferase 8A | −1.8794 |
| 22287 | Sgcb1a1 | secretoglobin, family 1A, member 1 (uteroglobin) | −1.7998 |
| 22296 | Vnmr1r51 | vomeronasal 1 receptor 51 | 1.806044 |
| 22378 | Wbp2 | WW domain binding protein 2 | 0.673888 |
| 22410 | Wnt10b | wingless-type MMTV integration site family, member 10B | −0.77983 |
| 22422 | Wnt7b | wingless-type MMTV integration site family, member 7B | −1.2964 |
| 22427 | Wnn | Werner syndrome homolog (human) | 0.689264 |
| 22688 | Zfp26 | zinc finger protein 26 | 0.702018 |
| 22750 | Zfp9 | zinc finger protein 9 | −0.74203 |
| 22775 | Zik1 | zinc finger protein interacting with K protein 1 | −0.83276 |
| 23789 | Coro1b | coronin, actin binding protein 1B | 0.643091 |
| 23790 | Coro1c | coronin, actin binding protein 1C | 0.630664 |
| 23985 | Slc26a4 | solute carrier family 26, member 4 | −1.05828 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 24044         | Scamp2      | secretory carrier membrane protein 2 | 0.628678 |
| 24102         | Trex2       | three prime repair exonuclease 2 | −3.56133 |
| 26570         | Slc7a11     | solute carrier family 7 (cationic amino acid transporter, y+ system), member 11 | −1.64966 |
| 26920         | Cntrl      | centrinol | 0.638412 |
| 26936         | Mprp        | myosin phosphatase Rho interacting protein | 0.829495 |
| 26942         | Spag1       | sperm associated antigen 1 | −0.95497 |
| 26965         | Cull1       | cullin 1 | 0.587056 |
| 27382         | Tc11b5      | T cell leukemia/lymphoma 1B, 5 | −0.67158 |
| 27411         | Slc14a2     | solute carrier family 14 (urea transporter), member 2 | −0.61673 |
| 27493         | A230006K03Rik | RIKEN cDNA A230006K03 gene | 0.713618 |
| 28006         | Fam21       | family with sequence similarity 21 | 0.700624 |
| 28114         | Nsun2       | NOL1/NOP2/Sun domain family member 2 | 0.748181 |
| 28248         | Slco1a1     | solute carrier organic anion transporter family, member 1a1 | −0.83729 |
| 28784         | Olfr29-ps1  | olfactory receptor 29, pseudogene 1 | −0.88445 |
| 29006         | Mfi2        | antigen p97 (melanoma associated) identified by monoclonal antibodies 133.2 and 96.5 | −0.97835 |
| 29848         | Olfr29-ps1  | olfactory receptor 29, pseudogene 1 | −0.88445 |
| 30060         | Mapk6       | mitogen-activated protein kinase 6 | 0.700356 |
| 50772         | Dkk3        | dickkopf homolog 3 (Xenopus laevis) | 0.674366 |
| 50934         | Slc7a8      | solute carrier family 7 (cationic amino acid transporter, y+ system), member 8 | −1.28248 |
| 50994         | Mtg2        | metastasis associated gene 2 | −1.28582 |
| 52108         | D9Erd115e   | DNA segment, Chr 9, ERATO Dori 115, expressed | −0.69487 |
| 52850         | Sgsm1       | small G protein signaling modulator 1 | 0.768399 |
| 53322         | Nucb2       | nucleobindin 2 | −1.29668 |
| 53381         | Prdx4       | peroxiredoxin 4 | −0.59671 |
| 54126         | Arhgef7     | Arh guanine nucleotide exchange factor (GEF7) | 0.671002 |
| 54199         | Ccr2        | chemokine (C-C motif) receptor-like 2 | −0.80972 |
| 54338         | Slc23a2     | solute carrier family 23 (nucleobase transporters), member 2 | 0.768156 |
| 54383         | Phc2        | polyhomeotic-like 2 (Drosophila) | 0.702052 |
| 54448         | Il1f6       | interleukin 1 family, member 6 | −3.48841 |
| 54611         | Pde3a       | phosphodiesterase 3A, cGMP inhibited | 0.612094 |
| 54652         | Cacna1f     | calcium channel, voltage-dependent, alpha 1F subunit | 0.914421 |
| 55981         | Pigb        | phosphatidylinositol glycan anchor biosynthesis, class B | 0.74657 |
| 55993         | Msb4        | mutS homolog 4 (E. coli) | 1.158784 |
| 56070         | Tcerg1      | transcription elongation regulator 1 (CA150) | −0.74169 |
| 56149         | Grasp       | GRP1 (general receptor for phosphoinositides 1)-associated scaffold protein | −0.87899 |
| 56215         | Acin1       | apoptotic chromatin condensation inducer 1 | 0.594454 |
| 56219         | Ext1        | exostoses (multiple)-like 1 | −1.27118 |
| 56306         | Fam60a      | family with sequence similarity 60, member A | 0.636922 |
| 56384         | Letm1       | leucine zipper-EF-hand containing transmembrane protein 1 | 0.784147 |
| 56406         | Ncoa6       | nuclear receptor coactivator 6 | 0.637659 |
| 56468         | Soc5        | suppressor of cytokine signaling 5 | 0.438932 |
| 56506         | Cib2        | calcium and integrin binding family member 2 | −0.60266 |
| 56538         | Klk11       | kallikrein related-peptidase 11 | −2.3751 |
| 56727         | Slurp1      | secreted Ly6/Plaur domain containing 1 | −2.95558 |
| 57738         | Slc15a2     | solute carrier family 15 (H+/peptide transporter), member 2 | −1.30016 |
| 58170         | Asic5       | acid-sensing (proton-gated) ion channel family member 5 | −1.42954 |
| 58214         | Cst10       | cystatin 10 (chondrocytes) | −1.19353 |
| 58865         | Tdh         | L-threonine dehydrogenase | −2.57185 |
| 59026         | Huwe1       | HECT, UBA and WWE domain containing 1 | 0.622268 |
| 59083         | Fetub       | fetuin beta | −2.29439 |
| 63913         | Fam129a     | family with sequence similarity 129, member A | 0.61201 |
| 64176         | Sv2b        | synaptic vesicle glycoprotein 2 b | −0.92457 |
| 64340         | Dhx38       | DEAH (Asp-Glu-Ala-His) box polypeptide 38 | 0.645424 |
| 64654         | Fgf23       | fibroblast growth factor 23 | 0.61382 |
| 65086         | Lpar3       | lysophosphatidic acid receptor 3 | −0.70333 |
| 65107         | Lrp10       | low-density lipoprotein receptor-related protein 10 | 0.593185 |
| 66011         | Ranbp17     | RAN binding protein 17 | −0.91862 |
| 66084         | Rmd1        | required for meiotic nuclear division 1 homolog (S. cerevisiae) | 0.609075 |
## Table 2 (continued)

| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|----------------|-------------|-----------|--------|
| 66127          | 1110014L15Rik | RIKEN cDNA 1110014L15 gene | -0.95708 |
| 66240          | Kcne1l       | potassium voltage-gated channel, Isk-related family, member 1-like, pseudogene | -2.1844 |
| 66313          | Smur2        | SMAD specific E3 ubiquitin protein ligase 2 | 0.696636 |
| 66341          | Eid3         | EF300 interacting inhibitor of differentiation 3 | 0.613088 |
| 66344          | Lce3b        | late cornified envelope 3B | -3.89494 |
| 66561          | Teddm3       | transmembrane epididymal family member 3 | -3.46887 |
| 66637          | Tsen15       | tRNA splicing endonuclease 15 homolog (S. cerevisiae) | 0.734184 |
| 66829          | Lrcc75aos2   | leucine rich repeat containing 75A, opposite strand 2 | 0.916303 |
| 66830          | Nacc1        | nucleosuperseded associated 1, BEN and BTB [POZ] domain containing | 1.249668 |
| 66839          | 06100090020Rik | RIKEN cDNA 0610009020 gene | 0.742334 |
| 66898          | Bap22l1      | BAI1-associated protein 2-like 1 | 0.597833 |
| 66932          | Rexo1        | REX1, RNA exonuclease 1 homolog (S. cerevisiae) | 0.61969 |
| 66939          | Aagab        | alpha- and gamma-adaptin binding protein | 0.604241 |
| 66957          | Serpinb11    | serine (or cysteine) peptidase inhibitor, clade B (ovalbumin), member 11 | -2.87268 |
| 67040          | Ddx17        | DEAD (Asp-Glu-Ala-Asp) box polypeptide 17 | 0.629016 |
| 67088          | Cand2        | cullin-associated and neddylation-dissociated 2 (putative) | -0.75137 |
| 67289          | 3110021A11Rik | RIKEN cDNA 3110021A11 gene | 0.741633 |
| 67327          | 1700031L13Rik | RIKEN cDNA 1700031L13 gene | -1.50459 |
| 67342          | Kcnmb4os1    | potassium large conductance calcium-activated channel, subfamily M, beta member 4, opposite strand 1 | -1.5008 |
| 67492          | Zflnd4       | zinc finger, AN1-type domain 4 | -0.91248 |
| 67498          | Kcnv1        | potassium channel, subfamily V, member 1 | -1.10495 |
| 67547          | Slc39a8      | solute carrier family 39 (metal ion transporter), member 8 | 0.917607 |
| 67561          | Wdr48        | WD repeat domain 48 | 0.646133 |
| 67685          | Dxy1c1       | dyslexia susceptibility 1 candidate 1 homolog (human) | -0.63112 |
| 67712          | Slc25a37     | solute carrier family 25, member 37 | 0.683473 |
| 67848          | Ddx55        | DEAD (Asp-Glu-Ala-Asp) box polypeptide 55 | -0.723513 |
| 67928          | Abca14       | ATP-binding cassette, sub-family A (ABC1), member 14 | -0.9217 |
| 67956          | Setd8        | SET domain containing (lysine methyltransferase) 8 | 0.754544 |
| 67978          | Tctn2        | tectonic family member 2 | 0.630605 |
| 67988          | Tmx3         | thioxedoxin-related transmembrane protein 3 | 0.839764 |
| 68149          | Otub2        | OTU domain, ubiquitin aldehyde binding 2 | -0.78583 |
| 68175          | 4930591A17Rik | RIKEN cDNA 4930591A17 gene | -0.77172 |
| 68178          | Cgnl1        | cingulin-like 1 | 0.679068 |
| 68214          | Gsto2        | glutathione S-transferase omega 2 | -0.79791 |
| 68226          | Efcab2       | EF-hand calcium binding domain 2 | 0.687146 |
| 68228          | 1700095K22Rik | RIKEN cDNA 1700095K22 gene | -0.83216 |
| 68311          | Lyd2         | Ly6/Plaur domain containing 2 | -1.15122 |
| 68396          | Nat8         | N-acetyltransferase 8 (GCN5-related, putative) | -1.49203 |
| 68465          | Adipor2      | adiponectin receptor 2 | 0.767648 |
| 68697          | 1110036E04Rik | RIKEN cDNA 1110036E04 gene | 0.878523 |
| 68744          | Zfp740       | zinc finger protein 740 | 0.627958 |
| 68770          | Phtf2        | putative homeodomain transcription factor 2 | -0.67831 |
| 68964          | Ctc1         | CTS telomere maintenance complex compone 1 | 0.736298 |
| 69031          | Galm6os      | UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetyl-galactosaminyltransferase 6, opposite strand | -1.56979 |
| 69065          | Chac1        | ChAc, cation transport regulator 1 | -1.65248 |
| 69202          | Ptns         | parathyminosin | 0.61983 |
| 69206          | 2010016I18Rik | RIKEN cDNA 2010016I18 gene | 0.805808 |
| 69207          | Srsf11       | serine/arginine-rich splicing factor 11 | 0.592404 |
| 69307          | Ptx1         | peroxisomal, testis specific 1 | -0.86674 |
| 69309          | Slc16a13      | solute carrier family 16 (monocarboxylic acid transporters), member 13 | 0.61424 |
| 69349          | 1700008003Rik | RIKEN cDNA 1700008003 gene | -0.79128 |
| 69374          | 1700023A20Rik | RIKEN cDNA 1700023A20 gene | -1.51032 |
| 69384          | Tmem89       | transmembrane protein 89 | 1.234292 |
| 69432          | 1700026J14Rik | RIKEN cDNA 1700026J14 gene | -1.71345 |
| 69489          | 2310007J06Rik | RIKEN cDNA 2310007J06 gene | -1.02391 |
| 69511          | Klk12        | kallikrein related-peptidase 12 | -2.12594 |
| 69543          | Capns2       | calpain, small subunit 2 | -1.198091 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 69571         | 2310034O05Rik | RIKEN cDNA 2310034O05 gene | −0.63191 |
| 69602         | Otop3        | ototeprin 3 | −2.23857 |
| 69739         | 24100401Rik  | RIKEN cDNA 241000401 gene | −0.64746 |
| 69772         | Bdh2         | 3-hydroxybutyrate dehydrogenase, type 2 | −0.91556 |
| 69857         | 1810053B23Rik | RIKEN cDNA 1810053B23 gene | −2.51944 |
| 69926         | Dnah17       | dynein, axonemal, heavy chain 17 | −1.12593 |
| 70007         | 1700029J08Rik | RIKEN cDNA 1700029J08 gene | −0.81257 |
| 70055         | 1700030L20Rik | RIKEN cDNA 1700030L20 gene | −1.80562 |
| 70061         | Sdr9c7       | 3-hydroxybutyrate/reductase family 9C, member 7 | −1.6906 |
| 70230         | 3300002P13Rik | RIKEN cDNA 3300002P13 gene | −0.9735 |
| 70237         | Bhlhb9       | basic helix-loop-helix domain containing, class B9 | −0.61368 |
| 70296         | Tbc1d13      | TBC1 domain family, member 13 | 0.680468 |
| 70355         | Gprc5c       | G protein-coupled receptor, family C, group 5, member C | −0.65647 |
| 70439         | Taf15        | RNA polymerase II, TATA box binding protein (TBP)-associated factor | 0.658771 |
| 70470         | Rprd1b       | regulation of nuclear pre-mRNA domain containing 1B | 0.644537 |
| 70568         | Cpe3         | copeine III | 0.771544 |
| 70730         | 6330409D20Rik | RIKEN cDNA 6330409D20 gene | −1.0955 |
| 70835         | Pssr22       | protease, serine 22 | −1.81815 |
| 70963         | 4931402H11Rik | RIKEN cDNA 4931402H11 gene | 1.21475 |
| 71065         | 4933417C20Rik | RIKEN cDNA 4933417C20 gene | −1.21629 |
| 71078         | Adam30       | a disintegrin and metallopeptidase domain 30 | −1.12467 |
| 71128         | 4933417C20Rik | RIKEN cDNA 4933417C20 gene | 0.878534 |
| 71137         | Rfx4         | regulatory factor X, 4 (influences HLA class II expression) | −1.01222 |
| 71263         | Mro          | maestro | −1.13673 |
| 71406         | 5430416O09Rik | RIKEN cDNA 5430416O09 gene | −0.88034 |
| 71523         | 2700005E23Rik | RIKEN cDNA 2700005E23 gene | −0.64663 |
| 71667         | Zfp444       | zinc finger protein 444 | 0.70073 |
| 71744         | Zbtb46       | zinc finger and BTB domain containing 46 | −0.59109 |
| 71861         | Zswim2       | zinc finger SWIM-type containing 2 | −2.35208 |
| 71864         | Fam217a      | family with sequence similarity 217, member A | 0.73753 |
| 71955         | Ist1         | increased sodium tolerance 1 homolog (yeast) | 0.59805 |
| 72014         | Btb17        | BTB (POZ) domain containing 17 | −0.65561 |
| 72061         | 2010111H01Rik | RIKEN cDNA 2010111H01 gene | 0.825361 |
| 72145         | Wdfy3        | WD repeat and FYVE domain containing 3 | 0.72186 |
| 72170         | Zbtb46       | zinc finger and BTB domain containing 46 | −0.59109 |
| 72215         | Dbnd1        | dysbindin (dystrobrevin binding protein 1) domain containing 1 | −0.95824 |
| 72224         | Psg21        | pregnancy-specific glycoprotein 21 | −1.09573 |
| 72252         | 1700022A21Rik | glycerol-3-phosphate dehydrogenase 1-like pseudogene | 1.285623 |
| 72475         | Ssbp3        | single-stranded DNA binding protein 3 | 0.93094 |
| 72523         | 2700005E23Rik | RIKEN cDNA 2700005E23 gene | −0.64663 |
| 72667         | Zfp444       | zinc finger protein 444 | 0.70073 |
| 72739         | Zkscan3      | zinc finger with KRAB and SCAN domains 3 | 0.618544 |
| 72747         | Tct39c       | tetraoctapeptide repeat domain 39C | −0.69873 |
| 72753         | 2810442N19Rik | RIKEN cDNA 2810442N19 gene | −1.00662 |
| 72805         | Zip839       | zinc finger protein 839 | 0.599802 |
| 72825         | March1       | membrane-associated ring finger (C3HC4) 1 | 0.850855 |
| 73009         | 2900057B20Rik | RIKEN cDNA 2900057B20 gene | −0.88695 |
| 73106         | Pssr22       | protease, serine 57 | −0.77097 |
| 73130         | Tmed5        | transmembrane emp24 protein transport domain containing 5 | −0.3263 |
| 73192         | Xpot         | exportin, tRNA (nuclear export receptor for tRNAs) | −0.66157 |
| 73395         | 1700049E22Rik | RIKEN cDNA 1700049E22 gene | −0.95191 |
| 73407         | Tepp         | testis, prostate and placenta expressed | −0.67367 |
| 73440         | 1700062C10Rik | RIKEN cDNA 1700062C10 gene | −1.10313 |
| Entrez gene ID | Gene symbol | Gene name                                      | Log2FC |
|---------------|-------------|------------------------------------------------|--------|
| 73466         | Ms4a13      | membrane-spanning 4-domains, subfamily A, member 13 | −1.24695 |
| 73603         | Trp53tg5    | transformation related protein 53 target 5         | −0.89139 |
| 73606         | 1700120E14Rik | RIKEN cDNA 1700120E14 gene                          | 0.969043 |
| 73696         | Platr9      | pluripotency associated transcript 9               | 0.690679 |
| 73707         | Gucy2g      | guanylate cyclase 2g                               | −2.27127 |
| 73719         | Lcer1c      | late cornified envelope 1C                         | −2.72812 |
| 73863         | 4930415020Rik | RIKEN cDNA 4930415020 gene                        | −0.81284 |
| 73941         | 4930412L05Rik | RIKEN cDNA 4930412L05 gene                        | −2.32861 |
| 73949         | Speer5-ps1  | spermatogenesis associated glutamate (E)-rich protein 9, pseudogene 1 | −1.33639 |
| 73994         | 4930449C09Rik | RIKEN cDNA 4930449C09 gene                       | −0.72145 |
| 74007         | Btdn11      | BTB (POZ) domain containing 11                     | −0.79803 |
| 74076         | 4933406C10Rik | RIKEN cDNA 4933406C10 gene                       | −0.96732 |
| 74081         | Cep350      | centrosomal protein 350                           | 0.849242 |
| 74127         | Krt80       | keratin 80                                        | −1.91014 |
| 74222         | sep-14      | septin 14                                         | −2.68921 |
| 74253         | Klr2        | killer cell lectin-like receptor subfamily G, member 2 | −1.52826 |
| 74286         | Tbc1d21     | TBC1 domain family, member 21                      | −1.17616 |
| 74297         | 1700093J21Rik | RIKEN cDNA 1700093J21 gene                      | −0.66263 |
| 74467         | Pus10       | pseudouridylate synthase 10                        | −0.61067 |
| 74525         | 8430419L09Rik | RIKEN cDNA 8430419L09 gene                    | −0.78417 |
| 74634         | 4930423D22Rik | RIKEN cDNA 4930423D22 gene                  | −0.74361 |
| 74849         | 4930412F12Rik | RIKEN cDNA 4930412F12 gene                 | 0.871862 |
| 74864         | 4930449E01Rik | RIKEN cDNA 4930449E01 gene                 | −0.759 |
| 75097         | Ube2dnl2    | ubiquitin-conjugating enzyme E2D N-terminal like 2 | −1.2845 |
| 75216         | Cep128      | centrosomal protein 128                           | 0.655509 |
| 75280         | 4930554G24Rik | RIKEN cDNA 4930554G24 gene                         | 1.010478 |
| 75309         | 4930565D16Rik | RIKEN cDNA 4930565D16 gene                        | −1.59875 |
| 75311         | 4930550C14Rik | RIKEN cDNA 4930550C14 gene                      | −1.83876 |
| 75400         | Defb29      | defensin beta 29                                  | −1.45368 |
| 75465         | Dynlrb2     | dynein light chain block-repeat-type 2             | −1.06277 |
| 75497         | Fabp12      | fatty acid binding protein 12                     | −1.16257 |
| 75510         | Izuomo2     | IZUMO family member 2                             | −1.55971 |
| 75535         | 1700016D02Rik | RIKEN cDNA 1700016D02 gene                     | −1.1259 |
| 75549         | 1700019L22Rik | RIKEN cDNA 1700019L22 gene                   | −1.04531 |
| 75571         | Spata9      | spermatogenesis associated 9                      | −0.59263 |
| 75689         | Hig1b       | HIG1 domain family, member 1B                      | −1.02087 |
| 75690         | Vsig10l     | ZV-set and immunoglobulin domain containing 10 like | −1.14018 |
| 75729         | Fam227a     | family with sequence similarity 227, member A      | 1.220646 |
| 75862         | 4930572O13Rik | RIKEN cDNA 4930572O13 gene                      | −0.98271 |
| 75863         | Clec4g      | C-type lectin domain family 4, member g            | −1.13827 |
| 75880         | 4930592A05Rik | RIKEN cDNA 4930592A05 gene                     | −0.85837 |
| 75900         | 4930566D17Rik | RIKEN cDNA 4930566D17 gene                 | −0.94911 |
| 75947         | 4930594O21Rik | RIKEN cDNA 4930594O21 gene                 | −0.80557 |
| 76007         | Zymym2      | zinc finger, MYM-type 2                           | 0.395213 |
| 76223         | Agbl3       | ATP/GTP binding protein-like 3                    | −1.36588 |
| 76382         | 1700012A03Rik | RIKEN cDNA 1700012A03 gene                   | −1.55164 |
| 76486         | Ly6k        | lymphocyte antigen 6 complex, locus K             | −0.74361 |
| 76614         | Lmmt        | inner membrane protein, mitochondrial             | 0.772655 |
| 76640         | 1700113H08Rik | RIKEN cDNA 1700113H08 gene                    | −1.32126 |
| 76645         | Pkd112      | polycystic kidney disease 1 like 2                | −0.94642 |
| 76936         | Hnrpm       | heterogeneous nuclear ribonucleoprotein M          | 0.880421 |
| 76954         | St5         | suppression of tumorigenicity 5                   | 0.802365 |
| 77015         | Mpped2      | metallophosphoesterase domain containing 2        | −0.71754 |
| 77044         | Arid2       | AT rich interactive domain 2 (ARID, RFX-like)      | −0.74807 |
| 77125         | Il13        | interleukin 33                                    | −1.39979 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 77188         | A430105D02Rik | RIKEN cDNA A430105D02 gene | 0.683667 |
| 77207         | 8030425K09Rik | RIKEN cDNA 8030425K09 gene | -0.85832 |
| 77271         | 9430024F10Rik | RIKEN cDNA 9430024F10 gene | 0.630722 |
| 77397         | 9530003J23Rik | RIKEN cDNA 9530003J23 gene | 0.979814 |
| 77417         | C030013C21Rik | RIKEN cDNA C030013C21 gene | 0.644658 |
| 77552         | Shisa4       | shisa family member 4 | -0.72836 |
| 77577         | Spns3        | spinster homolog 3 | -1.06179 |
| 77592         | 4931406H21Rik | RIKEN cDNA 4931406H21 gene | 0.720232 |
| 77678         | 77577        | Spns3 spinster homolog 3 | -1.06179 |
| 77678         | 7020427H10Rik | RIKEN cDNA 7020427H10 gene | 1.162931 |
| 77703         | 77877        | Hhip2 hedgehog interacting protein-like 2 | 0.630186 |
| 77784         | 77877        | Hhip2 hedgehog interacting protein-like 2 | 0.630186 |
| 77940         | A930004D18Rik | RIKEN cDNA A930004D18 gene | -0.83788 |
| 78031         | 4930547E08Rik | RIKEN cDNA 4930547E08 gene | -1.20674 |
| 78154         | 9530003J23Rik | RIKEN cDNA 9530003J23 gene | 0.979814 |
| 78154         | 9530003J23Rik | RIKEN cDNA 9530003J23 gene | 0.979814 |
| 78192         | 9530003J23Rik | RIKEN cDNA 9530003J23 gene | 0.979814 |
| 78211         | 9530003J23Rik | RIKEN cDNA 9530003J23 gene | 0.979814 |
| 78279         | 5330421C15Rik | RIKEN cDNA 5330421C15 gene | -0.93899 |
| 78500         | 1700063D05Rik | RIKEN cDNA 1700063D05 gene | -1.51247 |
| 78629         | 1700072I22Rik | RIKEN cDNA 1700072I22 gene | -0.59109 |
| 78757         | Rictor       | RPTOR independent companion of MTOR, complex 2 | 0.632871 |
| 78758         | 4921518K17Rik | RIKEN cDNA 4921518K17 gene | -0.9143 |
| 78762         | 4933424L21Rik | RIKEN cDNA 4933424L21 gene | -1.34361 |
| 78772         | 78829        | Tsc22d4 TSC22 domain family, member 4 | 0.608479 |
| 78926         | Gas521       | growth arrest-specific 2 like 1 | 0.821025 |
| 79362         | Bhlhe41      | basic helix-loop-helix family, member e41 | -1.25631 |
| 79459         | Aldoar2      | aldolase 1 A, retrogene 2 | 1.047077 |
| 80885         | Hcar2        | hydroxycarboxylic acid receptor 2 | -1.4179 |
| 80913         | Pum2         | pumilio RNA-binding family member 2 | 0.685887 |
| 80981         | Arl4d        | ADP-ribosylation factor-like 4D | -0.98255 |
| 81702         | Ankrd17      | ankyrin repeat domain 17 | 0.605263 |
| 81904         | Cacng7       | calcium channel, voltage-dependent, gamma subunit 7 | -0.65114 |
| 83766         | Actl6b       | actin-like 6B | -1.09156 |
| 83796         | Smarc2d      | SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily d, member 2 | 0.759713 |
| 93897         | Fzd10        | frizzled homolog 10 (Drosophila) | -1.96894 |
| 94060         | Lce3c        | late cornified envelope 3C | -4.23 |
| 94184         | Pdxdc1       | pyridoxal-dependent decarboxylase domain containing 1 | 0.841541 |
| 94353         | Hmg3         | high mobility group nucleosomal binding domain 3 | -0.63599 |
| 97086         | Sic9b2       | solute carrier family 9, subfamily B (NHA2, cation proton antiporter 2), member 2 | -0.8071 |
| 97122         | Hist2h4      | histone cluster 2, H4 | 0.763623 |
| 99094         | Ali849538    | expressed sequence Ali849538 | 0.6666 |
| 99167         | Ssx2ip       | synovial sarcoma, X breakpoint 2 interacting protein | 0.645126 |
| 99296         | Hrh3         | histamine receptor H3 | -0.84015 |
| 100088        | Rcc1         | regulator of chromosome condensation 1 | 0.643165 |
| 100470        | Lao1         | L-amino acid oxidase 1 | -2.07078 |
| 101100        | Ttl3         | tubulin tyrosine ligase-like family, member 3 | 0.837423 |
| 101533        | Klk9         | kalikrein-related-peptidase 9 | -2.37858 |
| 102570        | Sic22a13     | solute carrier family 22 (organic cation transporter), member 13 | -0.90109 |
| 102626        | Mappkapk3    | mitogen-activated protein kinase-activated protein kinase 3 | 0.621833 |
| 103067        | AA522020     | expressed sequence AA522020 | 0.654332 |
| 103080        | sep-10       | septin 10 | 0.681456 |
| 103268        | Cep571       | centrosomal protein 57-like 1 | 0.773083 |
| 103846        | Ali845619    | expressed sequence Ali845619 | -0.92823 |
| 104248        | Cabin1       | calcineurin binding protein 1 | 0.613774 |
| 104362        | Meig1        | meiosis expressed gene 1 | -1.59234 |
| 104681        | Sic16a6      | solute carrier family 16 (monocarboxylic acid transporters), member 6 | -0.63591 |
| 104708        | BB217526     | expressed sequence BB217526 | 0.657657 |
| 104859        | Tecpr2       | tectonin beta-propeller repeat containing 2 | 0.593026 |
| 105005        | Fam84a       | family with sequence similarity 84, member A | -1.76563 |
Table 2 (continued)

| Entrez gene ID | Gene symbol | Gene name                                                                 | Log2FC |
|---------------|-------------|---------------------------------------------------------------------------|--------|
| 105352        | Dusp22      | dual specificity phosphatase 22                                            | -0.96787 |
| 105511        | Fam170b     | family with sequence similarity 170, member B                              | -1.73188 |
| 105653        | Phyp        | phytanoyl-CoA hydroxylase interacting protein                              | -1.86543 |
| 106068        | Slc45a4     | solute carrier family 45, member 4                                         | 0.734586 |
| 106633        | Ift140      | intraflagellar transport 140                                              | 0.828963 |
| 106762        | AW047481    | expressed sequence AW047481                                              | 0.806171 |
| 107448        | Unc5a       | unc-5 homolog A (C. elegans)                                              | -0.92021 |
| 107477        | Guca1b      | guanylate cyclase activator 1B                                             | -0.72256 |
| 107503        | Aif5        | activating transcription factor 5                                          | -0.64083 |
| 107515        | Lgr4        | leucine-rich repeat-containing G protein-coupled receptor 4               | 0.968492 |
| 108800        | Ston2       | stonin 2                                                                  | 0.747513 |
| 108832        | Tmem74b     | transmembrane protein 74B                                                 | -0.84324 |
| 108897        | Aif11       | allograft inflammatory factor 1-like                                       | -1.1509 |
| 109095        | Rbm15b      | RNA binding motif protein 15B                                              | 0.658633 |
| 109198        | 6030407003Rik | RIKEN CDNA 6030407003 gene                                             | -1.2255 |
| 109342        | Slc5a10     | solute carrier family 5 (sodium/glucose cotransporter), member 10         | -1.11614 |
| 109359        | Fam175b     | family with sequence similarity 175, member B                             | 0.660947 |
| 109754        | Cyb5r3      | cytochrome b5 reductase 3                                                 | 0.61693 |
| 109857        | Cbr3        | carbonyl reductase 3                                                      | -0.70278 |
| 109978        | Art4        | ADP-ribosyltransferase 4                                                  | -1.81093 |
| 110175        | Ggct        | gamma-glutamyl cyclotransferase                                            | -0.68327 |
| 110637        | Grik4       | glutamate receptor, ionotropic, kainate 4                                 | -0.72295 |
| 113845        | Vmn1r48     | vomeronasal 1 receptor 49                                                 | -1.049 |
| 113846        | Vmn1r47     | vomeronasal 1 receptor 47                                                 | -1.51436 |
| 113847        | Vmn1r43     | vomeronasal 1 receptor 43                                                 | -1.70758 |
| 114585        | D17H6553E   | DNA segment, Chr 17, human D6553E                                        | 0.70983 |
| 114615        | Elac1       | elaC homolog 1 (E. coli)                                                   | -0.71608 |
| 116811        | Zim3        | zinc finger, imprinted 3                                                  | -1.69901 |
| 116903        | CalcB       | calcitonin-related polypeptide, beta                                       | -1.87798 |
| 116972        | Fam57a      | family with sequence similarity 57, member A                              | -0.95462 |
| 117147        | Acsm1       | acyl-CoA synthetase medium-chain family member 1                           | -1.12003 |
| 117590        | Asb10       | ankyrin repeat and SOCS box-containing 10                                 | -1.11281 |
| 140546        | Eri3        | exoribonuclease 3                                                         | 0.632673 |
| 140709        | Col26a1     | collagen, type XXVI, alpha 1                                              | -1.00617 |
| 140904        | Cnah1       | calneuron 1                                                               | -1.16418 |
| 170458        | Gpha2       | glycoprotein hormone alpha 2                                              | -0.78142 |
| 170719        | Oxr1        | oxidation resistance 1                                                    | 0.632419 |
| 170733        | Kfra17      | killer cell lecin-like receptor, subfamily A, member 17                   | -1.134296 |
| 170735        | Arr3        | arrestin 3, retinal                                                       | -0.91118 |
| 170740        | Zfp287      | zinc finger protein 287                                                   | 0.589692 |
| 170744        | Trlr8       | toll-like receptor 8                                                      | -0.82869 |
| 170829        | Tram2       | translocating chain-associating membrane protein 2                        | 0.708449 |
| 171229        | Vmn1r227    | vomeronasal 1 receptor 227                                                | -1.03346 |
| 171235        | Vmn1r236    | vomeronasal 1 receptor 236                                                | -1.86013 |
| 171248        | Vmn1r214    | vomeronasal 1 receptor 214                                                | -1.31339 |
| 171260        | Vmn1r89     | vomeronasal 1 receptor 89                                                 | -1.56777 |
| 171275        | Vmn1r212    | vomeronasal 1 receptor 212                                                | -1.56988 |
| 171281        | Acot3       | acyl-CoA thioesterase 3                                                   | 0.678602 |
| 171580        | Mical1      | microtubule associated monoxygenase, calponin and LIM domain containing 1 | 1.013549 |
| 192194        | Btn10       | butyrophilin-like 10                                                      | 0.811317 |
| 192285        | Phf21a      | PHD finger protein 21A                                                    | 0.905948 |
| 192734        | Lrc75b      | leucine rich repeat containing 75B                                         | -1.02733 |
| 194655        | Klf11       | Kruppel-like factor 11                                                    | -0.89779 |
| 194908        | Pld6        | phospholipase D family, member 6                                          | -0.68125 |
| 195644        | Skint3      | selection and upkeep of intraepithelial T cells 3                         | -1.27937 |
| 195733        | Grh1        | grainyhead-like 1 (Drosophila)                                            | -1.9831 |
| 207209        | Cdc5154     | coiled-coil domain containing 154                                         | -1.03486 |
| 208643        | Eif4g1      | eukaryotic translation initiation factor 4, gamma 1                       | 0.706288 |
| 208691        | Eif5a2      | eukaryotic translation initiation factor 5A                               | -0.58893 |
| 208982        | Hmgcl1      | 3-hydroxymethyl-3-methylglutaryl-Coenzyme A lyase-like 1                   | -0.83101 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|----------------|-------------|-----------|--------|
| 209824         | Vmn1r183    | vomeronasal 1 receptor 183 | −2.24989 |
| 211134         | Lzts1       | leucine zipper, putative tumor suppressor 1 | −1.10406 |
| 211550         | Tifa        | TRAF-interacting protein with forkhead-associated domain | −0.6945 |
| 212390         | KlhJ32      | kelch-like 32 | −0.69072 |
| 212528         | Trmt1       | tRNA methyltransferase 1 | 0.947646 |
| 213438         | A630033H20Rik | RIKEN cDNA A630033H20 gene | −0.75217 |
| 213498         | Arhgef11    | Rho guanine nucleotide exchange factor (GEF) 11 | 0.639783 |
| 213696         | Duoxa1      | dual oxidase maturation factor 1 | −2.2442 |
| 213783         | Plekhd1     | pleckstrin homology domain containing, family G (with RhoGef domain) member 1 | −0.84573 |
| 213948         | Atg9b       | autophagy related 9B | −2.11574 |
| 214812         | Zip609      | zinc finger protein 609 | 0.722991 |
| 215015         | Fam20b      | family with sequence similarity 20, member B | 0.757405 |
| 215274         | Il1f10      | interleukin 1 family, member 10 | −1.46053 |
| 215456         | Gpat2       | glycerol-3-phosphate acyltransferase 2, mitochondrial | −1.12537 |
| 215819         | Nhs1        | NHS-like 1 | 0.816479 |
| 215999         | Muc         | mitochondrial calcium uniporter | 0.8517 |
| 216033         | Ctnna3      | catenin (cadherin associated protein), alpha 3 | −2.53526 |
| 216188         | Aldh112     | aldehyde dehydrogenase 1 family, member L2 | −1.71 |
| 216238         | Eea1        | early endosome antigen 1 | 0.67036 |
| 216377         | Gm38403     | predicted gene, 38403 | 0.85941 |
| 216578         | Papolg      | poly(A) polymerase gamma | 0.639371 |
| 216643         | Gabrp       | gamma-aminoacyltransferase alpha, pi | −1.21446 |
| 216835         | Usp43       | ubiquitin specific peptidase 43 | 0.940283 |
| 216892         | Spsn2       | spinster homolog 2 | −1.27362 |
| 217217         | Ash6b       | ankyrin repeat and SOCS box-containing 16 | −0.98193 |
| 217294         | BCO069665   | cDNA sequence BCO069665 | −0.83067 |
| 217371         | Rab40b      | Rab40B, member RAS oncogene family | 0.85711 |
| 217674         | Gphb5       | glycoprotein hormone beta 5 | −1.60542 |
| 217837         | Itpk1       | inositol 1,4,5-triphosphate 5/6 kinase | 0.652385 |
| 217866         | Cdc42bp      | CDC42 binding protein kinase beta | 0.830481 |
| 218820         | Zip503      | zinc finger protein 503 | −0.76933 |
| 219150         | Hmbox1      | homeobox containing 1 | 0.948487 |
| 223658         | Mror1       | maestro heat-like repeat family member 1 | 0.745331 |
| 223809         | Smgc        | submandibular gland protein C | −1.3385 |
| 224023         | KlhJ22      | kelch-like 22 | 1.000464 |
| 224093         | Fam43a      | family with sequence similarity 43, member A | −0.86106 |
| 224143         | Poglut1     | protein O-glucosyltransferase 1 | −0.67618 |
| 224613         | Flywch1     | FLYWCH-type zinc finger 1 | 0.952196 |
| 224792         | Adgrf5      | adhesion G protein-coupled receptor F5 | −0.63765 |
| 225049         | Tct7        | tetratricopeptide repeat domain 7 | −0.73385 |
| 225131         | Wac         | WW domain containing adaptor with coiled-coil | 0.615318 |
| 225443         | Gm94        | predicted gene 94 | −3.59998 |
| 225908         | MyrF        | myelin regulatory factor | −1.22479 |
| 226075         | Glis3       | GLIS family zinc finger 3 | 0.663285 |
| 226245         | Plekhs1     | pleckstrin homology domain containing, family S member 1 | −1.06638 |
| 226255         | Atmm1       | attractin like 1 | 0.778521 |
| 226418         | Yodl1       | YOD1 OTU deubiquitinating enzyme 1 homologue (S. cerevisiae) | −0.62753 |
| 226922         | Kcnq5       | potassium voltage-gated channel, subfamily Q, member 5 | −0.88707 |
| 226970         | Arhgef4     | Rho guanine nucleotide exchange factor (GEF) 4 | −1.07033 |
| 227271         | Ppapdc3     | phosphatidic acid phosphatase type 2 domain containing 3 | −1.29695 |
| 228012         | Tlk1        | tousled-like kinase 1 | 0.613239 |
| 228355         | Madd        | MAP-kinase activating death domain | 0.612579 |
| 228543         | Rhov        | ras homolog gene family, member V | −0.90042 |
| 228775         | Trib3       | triboles homolog 3 (Drosophila) | −0.87301 |
| 228792         | Dmnt3bos    | DNA methyltransferase 3B, opposite strand | −0.74878 |
| 228796         | Bplb6       | BPI fold containing family B, member 6 | −0.70324 |
| 229542         | Gata2b      | GATA zinc finger domain containing 2B | 0.749205 |
| 229709         | Ahcy1l      | S-adenosylhomocysteine hydrolase-like 1 | 0.599917 |
| 229759         | Olfm3       | olfactomedin 3 | −1.92722 |
| Entrez gene ID | Gene symbol | Gene name                                                                 | Log2FC   |
|---------------|-------------|---------------------------------------------------------------------------|----------|
| 230451        | Junos       | jun proto-oncogene, opposite strand                                       | −0.93596 |
| 230603        | Ttc39a      | tetratricopeptide repeat domain 39A                                       | 0.662711 |
| 230613        | Skint10     | selection and upkeep of intraepithelial T cells 10                        | −0.95999 |
| 230861        | Eif4g3      | eukaryotic translation initiation factor 4 gamma, 3                        | 0.870118 |
| 230971        | Megf6       | multiple EGF-like-domains 6                                               | −0.58583 |
| 231002        | Plekhn1     | pleckstrin homology domain containing, family N member 1                  | −0.69277 |
| 231051        | Kmt2c       | lysine (K)-specific methyltransferase 2C                                  | 0.670753 |
| 231128        | Fam193a     | family with sequence similarity 193, member A                            | 0.590958 |
| 231287        | Atp10d      | ATPase, class V, type 10D                                                 | −0.75598 |
| 231637        | Ssh1        | slingshot homolog 1 (Drosophila)                                         | 0.58963 |
| 231801        | Afgp2       | ArfGAP with FG repeats 2                                                  | 0.964417 |
| 232035        | Ccsr1       | coiled-coil serine rich 1                                                 | 0.596191 |
| 232415        | Wnk1        | WNK lysine deficient protein kinase 1                                     | 0.849796 |
| 232415        | Gm156       | predicted gene 156                                                        | −2.43861 |
| 232599        | Gm4876      | predicted gene 4876                                                       | −0.74981 |
| 232943        | Klc3        | kinesin light chain 3                                                     | −1.21848 |
| 232959        | Vnn1r178    | vormeronasal 1 receptor 17                                                | −1.0788  |
| 233544        | A630091E08Rik | RIKEN cDNA A630091E08 gene                                               | 0.696576 |
| 233670        | Olfr6       | olfactory receptor 6                                                      | 0.93882  |
| 233863        | Gtflc1      | general transcription factor III C 1                                      | 0.596035 |
| 234023        | Arglu1      | arginine and glutamate rich 1                                             | 0.595255 |
| 234129        | Tpe         | transmembrane phosphatase with tensin homology                           | −0.85226 |
| 234724        | Tat         | tyrosine aminotransferase                                                 | −0.70604 |
| 234857        | Spire2      | spire homolog 2 (Drosophila)                                             | 0.747072 |
| 235028        | Zfp426      | zinc finger protein 426                                                   | 0.655082 |
| 235504        | Slc17a5     | solute carrier family 17 (anion/sugar transporter), member 5             | 0.76319  |
| 235611        | Pixinb1     | plexin B1                                                                 | −0.74232 |
| 235682        | Zfp445      | zinc finger protein 445                                                   | 0.714018 |
| 236266        | Alms1       | Alstrom syndrome 1                                                        | 0.616049 |
| 237611        | Stac3       | SH3 and cysteine rich domain 3                                            | −0.95162 |
| 238021        | Fscn2       | fascin homolog 2, actin-bundling protein, retinal (Strongylocentrotus purpuratus) | −0.73853 |
| 238871        | Pde4d       | phosphodiesterase 4D, cAMP specific                                       | 0.709113 |
| 239410        | A930017M01Rik | Smg-5 homolog, nonsense mediated mRNA decay factor pseudogene             | −1.12958 |
| 239554        | Foxred2     | FAD-dependent oxidoreductase domain containing 2                         | −0.75763 |
| 239691        | AU021092    | expressed sequence AU021092                                              | −0.92696 |
| 240411        | Loxhd1      | lipoxigenase homology domains 1                                           | −1.11939 |
| 240505        | Gdc42bg     | CDC42 binding protein kinase gamma (DMPK-like)                            | −0.59521 |
| 240518        | Pel3        | pellicin 3                                                                | −0.84694 |
| 240638        | Slc16a12    | solute carrier family 16 ( monocarboxylic acid transporters), member 12  | −0.73791 |
| 240753        | Plekha6     | pleckstrin homology domain containing, family A member 6                  | 0.827224 |
| 240755        | 4933406M09Rik | RIKEN cDNA 4933406M09 gene                                               | −0.96799 |
| 241113        | Prkag3      | protein kinase, AMP-activated, gamma 3 non-catalytic subunit              | −0.99043 |
| 241201        | Cdh7        | cadherin 7, type 2                                                        | 0.855924 |
| 241627        | Wdr76       | WD repeat domain 76                                                       | 0.736018 |
| 242037        | Ankub1      | ankrin repeat and ubiquitin domain containing 1                           | −0.85464 |
| 242093        | Rxfp4       | relaxin family peptide receptor 4                                         | −0.63316 |
| 242125        | Mab213      | mab-21-like 3 (C. elegans)                                                | −2.39948 |
| 243335        | BC048671    | cDNA sequence BC048671                                                    | −1.60083 |
| 243819        | Ppp6r1      | protein phosphatase 6, regulatory subunit 1                               | 0.678459 |
| 244199        | Ovch2       | ovochymase 2                                                              | −1.08592 |
| 244281        | Myo16       | myosin XVI                                                               | −1.16172 |
| 244332        | Defb14      | defensin beta 14                                                          | −2.80306 |
| 244886        | AI118078    | expressed sequence AI118078                                              | −1.0719 |
| 245684        | Cnkr2       | connector enhancer of kinase suppressor of Ras 2                          | −0.84846 |
| 246081        | Defb11      | defensin beta 11                                                          | −1.10548 |
| 246735        | AY074887    | cDNA sequence AY074887                                                    | −0.99381 |
| 246788        | Trpv3       | transient receptor potential cation channel, subfamily V, member 3        | 1.11016 |
| 252837        | Acker4      | atypical chemokine receptor 4                                             | −0.97382 |
| 257885        | Olfr885     | olfactory receptor 885                                                    | −0.98794 |
| 257902        | Olfr704     | olfactory receptor 704                                                    | −1.09484 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 257912        | Olfr948     | olfactory receptor 948 | −1.66079 |
| 258023        | Olfr1306    | olfactory receptor 1306 | −1.3753 |
| 258025        | Olfr1211    | olfactory receptor 1211 | −1.97936 |
| 258064        | Olfr316     | olfactory receptor 316 | −0.64194 |
| 258177        | Olfr1222    | olfactory receptor 1222 | −1.53601 |
| 258207        | Olfr452     | olfactory receptor 452 | −1.35668 |
| 258290        | Olfr1143    | olfactory receptor 1143 | −0.84815 |
| 258310        | Olfr145     | olfactory receptor 145 | −0.83906 |
| 258326        | Olfr642     | olfactory receptor 642 | −1.88474 |
| 258334        | Olfr1396    | olfactory receptor 1396 | −1.12314 |
| 258335        | Olfr374     | olfactory receptor 374 | −0.82561 |
| 258353        | Olfr521     | olfactory receptor 521 | −0.88221 |
| 258359        | Olfr1312    | olfactory receptor 1312 | −0.85416 |
| 258371        | Olfr368     | olfactory receptor 368 | −1.53827 |
| 258390        | Olfr1276    | olfactory receptor 1276 | −2.28313 |
| 258409        | Olfr1431    | olfactory receptor 1431 | −1.85304 |
| 258417        | Olfr470     | olfactory receptor 470 | −1.23992 |
| 258465        | Olfr1387    | olfactory receptor 1387 | −0.84763 |
| 258477        | Olfr197     | olfactory receptor 197 | 0.727059 |
| 258492        | Olfr484     | olfactory receptor 484 | 1.013283 |
| 258494        | Olfr318     | olfactory receptor 318 | −1.36443 |
| 258560        | Olfr843     | olfactory receptor 843 | −1.4106 |
| 258590        | Olfr702     | olfactory receptor 702 | 1.771986 |
| 258616        | Olfr357     | olfactory receptor 357 | −1.44533 |
| 258662        | Olfr738     | olfactory receptor 738 | −1.18753 |
| 258674        | Olfr1427    | olfactory receptor 1427 | −2.1351 |
| 258701        | Olfr401     | olfactory receptor 401 | −0.88657 |
| 258730        | Olfr483     | olfactory receptor 483 | −1.24945 |
| 258784        | Olfr1245    | olfactory receptor 1245 | −1.52883 |
| 258800        | Olfr905     | olfactory receptor 905 | −1.40489 |
| 258807        | Olfr910     | olfactory receptor 910 | −1.42112 |
| 258808        | Olfr620     | olfactory receptor 620 | −1.15739 |
| 258830        | Olfr103     | olfactory receptor 103 | −1.16458 |
| 258879        | Olfr330     | olfactory receptor 330 | 1.320387 |
| 258880        | Olfr218     | olfactory receptor 218 | −1.65817 |
| 258899        | Olfr66      | olfactory receptor 66 | −1.23907 |
| 258976        | Olfr1262    | olfactory receptor 1262 | −1.46147 |
| 259023        | Olfr1055    | olfactory receptor 1055 | −1.12738 |
| 259041        | Olfr1414    | olfactory receptor 1414 | −1.67436 |
| 259071        | Olfr166     | olfactory receptor 166 | −3.1017 |
| 259082        | Olfr1062    | olfactory receptor 1062 | 0.595395 |
| 259103        | Olfr616     | olfactory receptor 616 | −0.79583 |
| 259105        | Olfr549     | olfactory receptor 549 | −1.69862 |
| 259277        | Klk8        | kallikrein related-peptidase 8 | −0.63937 |
| 259279        | Tubgcp3     | tubulin, gamma complex associated protein 3 | 0.603204 |
| 268281        | Shprh       | SNF2 histone linker PHD RING helicase | −1.4923 |
| 268482        | Krt12       | keratin 12 | 0.771547 |
| 269023        | Zfp608      | zinc finger protein 608 | −1.09993 |
| 269643        | Pp2r2c      | protein phosphatase 2, regulatory subunit B, gamma | 0.887061 |
| 270150        | Ccdc153     | coiled-coil domain containing 153 | −0.66564 |
| 270669        | Mbtps2      | membrane-bound transcription factor peptidase, site 2 | 1.048009 |
| 271639        | Adcy10      | adenylate cyclase 10 | −0.8656 |
| 271697        | Cdk15       | cyclin-dependent kinase 15 | 0.948934 |
| 272350        | Gm5065      | predicted gene 5065 | 0.725271 |
| 277343        | Wdfc8       | WAP four-disulfide core domain 8 | −1.17606 |
| 277899        | Gm725       | predicted gene 725 | 0.821913 |
| 280645        | B3gat2      | beta-1,3-glucuronosyltransferase 2 (glucuronosyltransferase S) | 0.821913 |
| 319148        | Hist1h3c    | histone cluster 1, H3c | 0.840808 |
| 319156        | Hist1h4d    | histone cluster 1, H4d | 0.831783 |
| 319159        | Hist1h4j    | histone cluster 1, H4j | 0.876777 |
| 319160        | Hist1h4k    | histone cluster 1, H4k | 0.876777 |
Table 2 (continued)

| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 339272        | A130077B15Rik | RIKEN cDNA A130077B15 gene | 0.635704 |
| 319336        | C130036L24Rik | RIKEN cDNA C130036L24 gene | -1.1094 |
| 319565        | Syn2        | spectrin repeat containing, nuclear envelope 2 | 0.682204 |
| 319616        | S930412G12Rik | RIKEN cDNA S930412G12 gene | -0.67874 |
| 319638        | Nt5dc1      | 5'-nucleotidase domain containing 1 | -0.59093 |
| 319665        | A430010J10Rik | RIKEN cDNA A430010J10 gene | -0.87303 |
| 319707        | C430002N11Rik | RIKEN cDNA C430002N11 gene | -1.62649 |
| 319739        | B230303O12Rik | RIKEN cDNA B230303O12 gene | -0.67322 |
| 319798        | A730000N16Rik | RIKEN cDNA A730000N16 gene | -2.19574 |
| 319888        | Oacyl       | O-acyltransferase like | 0.931066 |
| 319916        | A730011C13Rik | RIKEN cDNA A730011C13 gene | -0.67345 |
| 319922        | Vwc2        | von Willebrand factor C domain containing 2 | -0.81209 |
| 319939        | Tns3        | tensin 3 | 0.621004 |
| 320057        | A630057N01Rik | RIKEN cDNA A630057N01 gene | 0.856072 |
| 320099        | BC106179    | cDNA sequence BC106179 | 0.934393 |
| 320116        | Fndc9       | fibronectin type III domain containing 9 | -1.50624 |
| 320176        | D930032P07Rik | RIKEN cDNA D930032P07 gene | -1.76539 |
| 320206        | A730028G07Rik | RIKEN cDNA A730028G07 gene | 0.775949 |
| 320234        | Ccdc66      | coiled-coil domain containing 66 | 0.704543 |
| 320332        | Hist4h4     | histone cluster 4, H4 | 0.738735 |
| 320449        | A730004F24Rik | RIKEN cDNA A730004F24 gene | -0.84895 |
| 320473        | Heatr3b     | HEAT repeat containing 5B | 0.821605 |
| 320557        | Fam169a     | family with sequence similarity 169, member A | 0.852969 |
| 320595        | Pf8         | PHD finger protein 8 | 0.632429 |
| 320718        | Slc26a9     | solute carrier family 26, member 9 | -2.47693 |
| 320771        | C030040A22Rik | RIKEN cDNA C030040A22 gene | 1.001158 |
| 320790        | Chd7        | chromodomain helicase DNA binding protein 7 | 0.862642 |
| 320938        | Tnpo3       | transportin 3 | 0.795327 |
| 320939        | S930403L14Rik | RIKEN cDNA S930403L14 gene | -1.13108 |
| 327872        | Gm12018     | predicted gene 12018 | -1.77223 |
| 328108        | Fam179b     | family with sequence similarity 179, member B | 0.599925 |
| 328233        | C230040D14 | uncharacterized protein C230040D14 | -0.84505 |
| 328699        | Gabrr3      | gamma-aminobutyric acid (GABA) receptor, rho 3 | 1.462313 |
| 328766        | Gmn5092     | predicted gene 5092 | -1.04859 |
| 328779        | Hs3st6      | heparan sulfate (glucosamine) 3-O-sulfotransferase 6 | -2.36965 |
| 328789        | Lhfl5       | lipoma HMGIC fusion partner-like 5 | -0.66469 |
| 328934        | Spink10     | serine peptidase inhibitor, Kazal type 10 | -1.22364 |
| 329387        | C230014012Rik | RIKEN cDNA C230014012 gene | -0.6325 |
| 329509        | 1810024B03Rik | RIKEN cDNA 1810024B03 gene | -1.23083 |
| 329731        | Fam19a3     | family with sequence similarity 19, member A3 | -0.80972 |
| 330662        | Dock1       | dedicator of cytokinesis 1 | 0.813496 |
| 331045        | A530083I20Rik | RIKEN cDNA A530083I20 gene | -0.77418 |
| 331046        | Tgm4        | transglutaminase 4 (prostate) | -0.67338 |
| 331524        | Xkrx        | X Kell blood group precursor related X linked | -1.27333 |
| 331532        | Tceal5      | transcription elongation factor A (SII)-like 5 | -1.08131 |
| 332131        | Krt78       | keratin 78 | -2.62136 |
| 333639        | Mamld1      | mastermind-like domain containing 1 | 0.782401 |
| 338366        | Mia3        | melanoma inhibitory activity 3 | 0.718258 |
| 335188        | Adam32      | a disintegrin and metalloproteinase domain 32 | -0.7638 |
| 337845        | Mafa        | v-maf musculoaponeurotic fibrosarcoma oncogene family, protein A (avian) | 0.779909 |
| 338092        | Lmo7        | LIM domain only 7 | 0.91705 |
| 338126        | Mreg        | melanoregulin | -1.35993 |
| 338128        | Hjpr        | Holliday junction recognition protein | 0.602615 |
| 338128        | Serpinb3c   | serine (or cysteine) peptidase inhibitor, clade B, member 3C | -2.74951 |
| 338137        | Sp9         | trans-acting transcription factor 9 | -1.17358 |
| 3381452       | Gm1647      | predicted gene 1647 | 0.798287 |
| 3381476       | Stpg2       | sperm tail PG rich containing 2 | -1.11169 |
| 3381598       | 2610005L07Rik | cadherin 11 pseudogene | 0.702115 |
| 3381628       | Adgrf3      | adhesion G protein-coupled receptor F3 | -0.81046 |
| 3382036       | A530010L16Rik | RIKEN cDNA A530010L16 gene | -0.76642 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 382090        | Cep162      | centrosomal protein 162 | 0.632628 |
| 382522        | Hist3h2bb-ps | histone cluster 3, H2bb, pseudogene | −1.45034 |
| 382551        | Cd300lh     | CD300 antigen like family member H | −0.63997 |
| 382793        | Mtx3        | metatin 3 | 0.604577 |
| 384534        | Vnnr2r52    | vomeronasal 2, receptor 52 | −0.83778 |
| 386463        | Cdsn        | corneodesmosin | −2.69546 |
| 387565        | Cd300c      | CD300C antigen | −0.71718 |
| 399548        | Scn4b       | sodium channel, type IV, beta | −1.46963 |
| 404222        | Olfr231     | olfactory receptor 231 | −1.24083 |
| 404311        | Olfr6209    | olfactory receptor 209 | −0.8033 |
| 404318        | Olfr681     | olfactory receptor 681 | −1.02977 |
| 407803        | BC051226    | cDNA sequence BC051226 | −0.60891 |
| 432637        | Gm5433      | predicted gene 5433 | 0.926254 |
| 433873        | Gm9903      | predicted gene 9903 | 1.215905 |
| 434147        | D930028M14Rik | RIKEN cDNA D930028M14 gene | −0.91844 |
| 434285        | B014433     | expressed sequence B014433 | 0.739098 |
| 434440        | Fbxw20      | F-box and WD-40 domain protein 20 | −1.38324 |
| 436336        | Gm5767      | predicted gene 5767 | −1.24568 |
| 497097        | Xkr4        | X Kell blood group precursor related family member 4 | 0.980645 |
| 541610        | Treg1       | taste receptor cell gene 1 | −0.76876 |
| 544736        | Glipr113    | GLI pathogenesis-related 1 like 3 | −0.96665 |
| 544881        | BB287469    | expressed sequence BB287469 | −0.65289 |
| 545047        | Gm5800      | predicted gene 5800 | −1.80319 |
| 545410        | Fcnos       | ficolin A, opposite strand | −0.94578 |
| 545481        | Arhgap40    | Rho GTPase activating protein 40 | −1.55664 |
| 545925        | Psg27       | pregnancy-specific glycoprotein 27 | −1.00025 |
| 545934        | Vmn1r173    | vomeronasal 1 receptor 173 | −0.75283 |
| 545975        | Cers3       | ceramide synthase 3 | −2.88925 |
| 546801        | Etv3l       | ets variant 3-like | −0.86064 |
| 546886        | Ccdc42b     | coiled-coil domain containing 42B | −0.83395 |
| 546896        | Olfr455     | olfactory receptor 455 | −0.65756 |
| 574415        | Gm6042      | type II keratin Kb32P | −1.20439 |
| 574417        | Tas2r137    | taste receptor, type 2, member 137 | −1.33149 |
| 613264        | IB10020005Rik | Riken cDNA 1810020005 gene | −0.96643 |
| 619310        | Zfp872      | zinc finger protein 872 | −1.29616 |
| 619548        | Defb42      | defensin beta 42 | −1.09536 |
| 620750        | 2900079G21Rik | RIKEN cDNA 2900079G21 gene | −1.05197 |
| 622129        | Gm6288      | predicted gene 6288 | −0.91767 |
| 622675        | Zfp827      | zinc finger protein 827 | 0.640512 |
| 623781        | Gm14137     | predicted gene 14137 | −1.78948 |
| 624086        | A230045G1Rik | RIKEN cDNA A230045G11 gene | 0.763289 |
| 625243        | Gm6567      | predicted gene 6567 | −0.74373 |
| 626848        | Etoh1       | ethanol induced 1 | 0.690213 |
| 627049        | Zfp800      | zinc finger protein 800 | 0.73784 |
| 628236        | Lipo4       | lipase, member O4 | −1.19376 |
| 629954        | Gm6980      | predicted gene 6980 | −2.05611 |
| 629754        | Wldc9       | WAP four-disulfide core domain 9 | −1.7709 |
| 630994        | Lce3d       | late cornified envelope 3D | −3.30253 |
| 633057        | Gm7102      | predicted gene 7102 | 0.833147 |
| 637053        | Vnnr2r4     | vomeronasal 2, receptor 4 | −1.06975 |
| 664609        | Rhox4a      | reproductive homeobox 4A | 2.609269 |
| 664783        | Dux         | double homeobox | −1.46052 |
| 665001        | Gm14391     | predicted gene 14391 | 0.591605 |
| 665097        | Gm7489      | predicted gene 7489 | −1.13701 |
| 665306        | 3930402G2Rik | RIKEN cDNA 3930402G23 gene | −0.67137 |
| 665998        | Krtap4-9    | keratin associated protein 4-9 | −1.14971 |
| 666060        | Frmpd1      | FERM and PDZ domain containing 1 | −0.77551 |
| 666168        | Cyp4a31     | cytochrome P450, family 4, subfamily a, polypeptide 31 | −1.22105 |
| 666339        | Muc3        | mucin 3, intestinal | 1.184079 |
| 667277        | C1rb        | complement component 1, r subcomponent B | 0.724315 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 668311        | Gm9099      | predicted gene 9099 | -0.76956 |
| 670558        | H60c        | histocompatibility 60c | -1.23452 |
| 670764        | Vmn1r124    | vomeronal 1 receptor 124 | -1.4086 |
| 670912        | Gm9510      | predicted gene 9510 | 0.593004 |
| 672284        | Nks1-1      | NK1 transcription factor related, locus 1 (Drosophila) | 0.823447 |
| 672511        | Rnf213      | ring finger protein 213 | 0.794514 |
| 675814        | Zfp605      | zinc finger protein 605 | 0.603514 |
| 675921        | Tnk2os      | tyrosine kinase, non-receptor 2, opposite strand | 0.757281 |
| 791293        | Gm9948      | predicted gene 9948 | -0.88202 |
| 791310        | Gm10158     | predicted gene 10158 | 0.844847 |
| 791415        | Gm12500     | predicted gene 12500 | -0.66322 |
| 100036538     | BC028777    | cDNA sequence BC028777 | -1.33134 |
| 100038358     | Gm10857     | predicted gene 10857 | -1.23782 |
| 100038614     | Gm10791     | predicted gene 10791 | -0.69418 |
| 100040852     | Gm3002      | alpha-takusan pseudogene | 0.648214 |
| 100042968     | Vmn1r101    | vomeronal 1 receptor 101 | -0.76392 |
| 100043229     | Gm10046     | predicted gene 10046 | 0.710773 |
| 100043387     | D230030E09Rik | Riken cDNA D230030E09 gene | 0.844222 |
| 1000502868    | Gm20597     | predicted gene 20597 | 0.994375 |
| 1000503609    | Lnp1        | leukemia NUP98 fusion partner 1 | -1.36631 |
| 1000503630    | Gm12002     | predicted gene 12002 | -0.73483 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 100503704     | Gm16861     | predicted gene, 16861 | -0.73992 |
| 100504169     | Gm20098     | predicted gene, 20098 | -1.08526 |
| 100504453     | Gm20236     | predicted gene, 20236 | -1.16211 |
| 100504464     | E230016K23Rik | RIKEN cDNA E230016K23 gene | -0.78439 |
| 100504569     | Gm13205     | predicted gene 13205 | 0.769604 |
| 100504650     | A730085E03Rik | RIKEN cDNA A730085E03 gene | -0.7639 |
| 100862431     | LOC100862431 | H-2 class I histocompatibility antigen, D-D alpha chain-like | 0.652366 |
| 102631545     | Gm29856     | predicted gene, 29856 | -1.19714 |
| 102631791     | Gm11465     | predicted gene 11465 | -0.85102 |
| 102631866     | Gm30092     | predicted gene, 30092 | -0.65396 |
| 102631997     | Gm12589     | predicted gene 12589 | -1.19779 |
| 102632186     | Gm30178     | predicted gene, 30178 | -1.78287 |
| 102632388     | Gm38444     | predicted gene, 38444 | 0.65274 |
| 102633315     | Gm16159     | predicted gene 16159 | 0.753177 |
| 102633355     | Gm14051     | predicted gene 14051 | 0.818671 |
| 102633705     | LOC102633705 | uncharacterized LOC102633705 | -1.3771 |
| 102633711     | Gm15320     | predicted gene 15320 | -0.99499 |
| 102633793     | Gm31534     | predicted gene, 31534 | -0.65 |
| 102633805     | Gm26688     | predicted gene, 26688 | -2.96899 |
| 102634491     | Gm32062     | predicted gene, 32062 | -2.39892 |
| 102634598     | Gm32139     | predicted gene, 32139 | -1.56876 |
| 102634642     | Gm32178     | predicted gene, 32178 | 0.99884 |
| 102634982     | Gm32431     | predicted gene, 32431 | -1.60357 |
| 102635494     | Gm12576     | predicted gene 12576 | 0.948289 |
| 102635495     | Gm32817     | predicted gene, 32817 | -0.72467 |
| 102635553     | Gm15624     | predicted gene 15624 | 0.706913 |
| 102635587     | Gm32880     | predicted gene, 32880 | 1.193606 |
| 102635639     | Gm32926     | predicted gene, 32926 | -0.98054 |
| 102635721     | Gm26651     | predicted gene, 26651 | -1.15859 |
| 102635799     | Gm33047     | predicted gene, 33047 | 0.852917 |
| 102635801     | LOC102635801 | uncharacterized LOC102635801 | 1.789109 |
| 102636085     | Gm33255     | predicted gene, 33255 | -1.98816 |
| 102636217     | Gm26806     | predicted gene, 26806 | -1.31753 |
| 102636463     | Gm38488     | predicted gene, 38488 | 0.795664 |
| 102637189     | Gm34066     | predicted gene, 34066 | -1.82095 |
| 102637485     | Gm34280     | predicted gene, 34280 | -0.81988 |
| 102637558     | Gm34336     | predicted gene, 34336 | -3.93697 |
| 102638051     | Gm13657     | predicted gene 13657 | -1.31116 |
| 102638077     | Gm34726     | predicted gene, 34726 | -1.34647 |
| 102638234     | Gm34843     | predicted gene, 34843 | 0.901377 |
| 102638282     | Gm34883     | predicted gene, 34883 | -0.64989 |
| 102638285     | Gm13415     | predicted gene 13415 | -0.83406 |
| 102638424     | Gm34995     | predicted gene, 34995 | -1.01039 |
| 102638584     | Gm35113     | predicted gene, 35113 | -1.50116 |
| 102638626     | Gm35147     | predicted gene, 35147 | 0.92129 |
| 102638630     | Gm26779     | predicted gene, 26779 | 0.856981 |
| 102638651     | Gm35164     | predicted gene, 35164 | 0.755207 |
| 102638667     | Gm35177     | predicted gene, 35177 | -1.88393 |
| 102638784     | Gm35266     | predicted gene, 35266 | 1.049232 |
| 102638917     | Gm35363     | predicted gene, 35363 | 0.982775 |
| 102639110     | Gm35501     | predicted gene, 35501 | -1.42978 |
| 102639139     | Gm35522     | predicted gene, 35522 | -0.64853 |
| 102639228     | Gm35587     | predicted gene, 35587 | -0.89923 |
| 102639958     | LOC102639958 | uncharacterized LOC102639958 | -0.75044 |
| 102639962     | Gm36151     | predicted gene, 36151 | 0.78053 |
| 102639996     | Gm36177     | predicted gene, 36177 | -1.41141 |
| 102640128     | Gm36269     | predicted gene, 36269 | -1.375 |
| 102640184     | Gm36313     | predicted gene, 36313 | -0.87374 |
Table 2 (continued)

| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|----------------|-------------|-----------|--------|
| 102640241      | LOC102640241| uncharacterized LOC102640241 | 0.710842 |
| 102640255      | Gm36367     | predicted gene, 36367          | 0.827981 |
| 102640379      | Gm11716     | predicted gene 11716            | −0.10706 |
| 102640449      | Tvp23bos    | trans-golgi network vesicle protein 23B, opposite strand | −0.63835 |
| 102640521      | Gm36561     | predicted gene, 36561           | −0.67567 |
| 102640562      | LOC102640562| uncharacterized LOC102640562   | −1.38291 |
| 102640826      | Gm36802     | predicted gene, 36802           | −1.18787 |
| 102641119      | LOC102641119| uncharacterized LOC102641119   | 0.878519 |
| 102641261      | LOC102641261| uncharacterized LOC102641261   | 0.984663 |
| 102641428      | LOC102641428| uncharacterized LOC102641428   | 0.973222 |
| 102641783      | Gm38575     | predicted gene, 38575           | −1.45318 |
| 102641978      | LOC102641978| uncharacterized LOC102641978   | 0.673717 |
| 102642140      | LOC102642140| uncharacterized LOC102642140   | 1.357604 |
| 102642271      | LOC102642271| calcium-binding and coiled-coil domain-containing protein 2-like | 0.880414 |
| 102642579      | LOC102642579| cyclic AMP-responsive element-binding protein 3-like protein 2 pseudogene | 0.711796 |
| 102642951      | LOC102642951| uncharacterized LOC102642951   | 0.901922 |
| 105242587      | Gm38758     | predicted gene, 38758           | −0.61912 |
| 105242792      | Adap2os     | ArfGAP with dual PH domains 2, opposite strand | −2.0222 |
| 105243282      | LOC105243282| uncharacterized LOC105243282   | −1.01203 |
| 105244026      | Gm38293     | predicted gene, 38293           | 0.621271 |
| 105245424      | Gm40881     | predicted gene, 40881           | 0.810625 |
| 105246057      | LOC105246057| igE-binding protein-like        | 0.622452 |
| 105247377      | LOC105247377| uncharacterized LOC105247377   | −0.66635 |

Table 3
Differentially expressed genes (DEG) in the colon of mice after 14 days of exposure to E171.

| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|----------------|-------------|-----------|--------|
| 11421          | Ace         | angiotensin I converting enzyme (peptidyl-dipeptidase A) 1 | 0.911786 |
| 11480          | Acvr2a      | activin receptor IIA | −0.59046 |
| 11499          | Adam5       | a disintegrin and metallopeptidase domain 5 | −1.04683 |
| 11513          | Adcy7       | adenylyl cyclase 7 | −0.68104 |
| 11520          | Plin2       | perilipin 2 | 0.620984 |
| 11542          | Adora3      | adenosine A3 receptor | −0.80428 |
| 11553          | Adra2c      | adrenergic receptor, alpha 2c | −0.70549 |
| 11652          | Akt2        | thymoma viral proto-oncogene 2 | 1.261177 |
| 11731          | Ang2        | angiogenin, ribonuclease A family, member 2 | −2.80064 |
| 11765          | Aplg1       | adaptor protein complex AP-1, gamma 1 subunit | 0.700875 |
| 11803          | Aplp1       | amyloid beta (A4) precursor-like protein 1 | 0.649492 |
| 11834          | Aqr         | aquarius | −0.70336 |
| 11856          | Arhgap6     | Rho GTPase activating protein 6 | −1.036 |
| 11859          | Phox2a      | paired-like homeobox 2a | −1.00702 |
| 11977          | Atp7a       | ATPase, Cu++ transporting, alpha polypeptide | −0.78423 |
| 12013          | Bach1       | BTB and CNC homology 1 | −0.58678 |
| 12029          | Bcl6b       | B cell CLL/lymphoma 6, member B | −0.71772 |
| 12036          | Bcat2       | branched chain aminotransferase 2, mitochondrial | 0.609443 |
| 12041          | Bckdk       | branched chain ketoacid dehydrogenase kinase | 0.610643 |
| 12042          | Bcl10       | B cell leukemia/lymphoma 10 | −0.60308 |
| 12047          | Bcl2a1d     | B cell leukemia/lymphoma 2 related protein A1d | −0.98334 |
| 12051          | Bcl3        | B cell leukemia/lymphoma 3 | −0.59878 |
| 12053          | Bcl6        | B cell leukemia/lymphoma 6 | −0.63678 |
| 12111          | Bgn         | biglycan | −0.78843 |
| 12164          | Bmp8b       | bone morphogenetic protein 8b | −1.65646 |
| 12193          | Zif365l2    | zinc finger protein 36, CSH type-like 2 | −0.72839 |
| 12270          | C4bp-ps1    | complement component 4 binding protein, pseudogene 1 | −0.82253 |
| 12273          | C5ar1       | complement component 5a receptor 1 | −1.12916 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 12290         | Cacna1e     | calcium channel, voltage-dependent, R type, alpha 1E subunit | −0.66657 |
| 12291         | Cacna1g     | calcium channel, voltage-dependent, T type, alpha 1G subunit | −1.42502 |
| 12326         | Camk4       | calcium/calmodulin-dependent protein kinase IV | −1.12934 |
| 12395         | Runx1t1     | runt-related transcription factor 1; translocated to, 1 (cyclin D-related) | −0.72272 |
| 12400         | Chfb        | core binding factor beta | −0.60334 |
| 12412         | Cbx1        | chromobox 1 | −0.89405 |
| 12445         | Ccnd3       | cyclin D3 | −0.59227 |
| 12448         | Ccene2      | cyclin E2 | −1.32048 |
| 12453         | Ccni        | cyclin 1 | 0.645054 |
| 12506         | Cd48        | CD48 antigen | −0.83964 |
| 12523         | Cd84        | CD84 antigen | −1.14485 |
| 12524         | Cd86        | CD86 antigen | −1.08973 |
| 12575         | Cdkn1a      | cyclin-dependent kinase inhibitor 1A (P21) | 0.821051 |
| 12631         | Cfl1        | collagen 1, non-muscle | 0.962626 |
| 12704         | Cit         | citron | 1.21133 |
| 12752         | Cln3        | ceroid lipofuscinosis, neuronal 3, juvenile (Batten, Spielmeyer-Vogt disease) | 0.654024 |
| 12772         | Ccr2        | chemokine (C-C motif) receptor 2 | −1.20079 |
| 12804         | Ctnfr       | ciliary neurotrophic factor receptor | −0.9379 |
| 12812         | Coil        | collagen | −0.6788 |
| 12819         | Coll15a1    | collagen, type XV, alpha 1 | 0.805905 |
| 12827         | Coll4a2     | collagen, type IV, alpha 2 | 0.890455 |
| 12977         | Csfr1       | colony stimulating factor 1 (macrophage) | −0.85002 |
| 13058         | Cybb        | cytochrome b-245, beta polypeptide | −1.07607 |
| 13132         | Dab2        | disabled 2, mitogen-responsive phosphoprotein | −1.91221 |
| 13169         | Dbnl        | drebrin-like | 0.660419 |
| 13171         | Dbx1        | dihydrod ripeamidine branched chain transacylase E2 | −0.61663 |
| 13172         | Dck         | deoxycoptidylase kinase | −0.6267 |
| 13190         | Dct         | dopachrome tautomerase | −1.01545 |
| 13367         | Diap1       | diaphanous homolog 1 (Drosophila) | 1.324041 |
| 13400         | Dmpk        | dystrophia myotonica-protein kinase | 0.9284 |
| 13426         | Dyncl1      | dynin dynactin intermediate chain 1 | −0.76492 |
| 13430         | Dnm2        | dynamin 2 | 0.6927 |
| 13498         | Dros1       | atrophin 1 | 0.605124 |
| 13508         | Dscam       | Down syndrome cell adhesion molecule | −0.74569 |
| 13518         | Dst         | dystonin | 0.65511 |
| 13532         | Usp17c      | ubiquitin specific peptidase 17-like C | 0.755766 |
| 13586         | Ear1        | eosi nophil-associated, ribonuclease A family, member 1 | −0.9434 |
| 13618         | EdnrB       | endothelin receptor type B | 0.93025 |
| 13629         | Eef2        | eukaryotic translation elongation factor 2 | 0.637698 |
| 13655         | Egfr3       | early growth response 3 | −2.15349 |
| 13665         | Eif2s1      | eukaryotic translation initiation factor 2, subunit 1 alpha | −0.63564 |
| 13666         | Eif2ak3     | eukaryotic translation initiation factor 2 alpha kinase 3 | −0.68318 |
| 13733         | Adgre1      | adhesion G protein-coupled receptor E1 | −0.76332 |
| 13806         | Eno1        | enolase 1, alpha non-neuron | 0.603135 |
| 13835         | Eph1        | Eph receptor A1 | −0.97562 |
| 13892         | Esr1        | estrogen receptor 1 (alpha) | −0.68068 |
| 13990         | Smc1ad1     | SWI/SNF-related, matrix-associated actin-dependent regulator of chromatin, subfamily A, containing DEAD/H box 1 | −0.59761 |
| 14017         | Ev2a        | ecotropic viral integration site 2a | −1.06606 |
| 14055         | Ezh1        | enhancer of zeste homolog 1 (Drosophila) | 0.622265 |
| 14105         | Srsf10      | serine/arginine-rich splicing factor 10 | −0.59777 |
| 14129         | Fgcr1       | Fc receptor, IgG, high affinity | −0.82062 |
| 14130         | Fgcr2b      | Fc receptor, IgG, low affinity | −0.78621 |
| 14190         | Fgl2        | fibrinogen-like protein 2 | −0.77933 |
| 14202         | Fhl4        | four and a half LIM domains 4 | −0.74795 |
| 14238         | Foxf2       | forkhead box F2 | −0.9202 |
| 14247         | Fli1        | Friend leukemia integration 1 | −1.08505 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 14248         | Flii        | flightless I homolog (Drosophila) | 0.678156 |
| 14377         | Fut7        | fucosyltransferase 7 | -1.19874 |
| 14371         | Fzd9        | frizzled homolog 9 (Drosophila) | -1.62967 |
| 14387         | Gaa         | glucosidase, alpha, acid | 0.816403 |
| 14395         | Gabra2      | gamma-aminobutyric acid (GABA) A receptor, subunit alpha 2 | -2.09585 |
| 14406         | Gabrg2      | gamma-aminobutyric acid (GABA) A receptor, subunit gamma 2 | 1.85988 |
| 14453         | Gas2        | growth arrest specific 2 | -0.77701 |
| 14460         | Gata1       | GATA binding protein 1 | -1.43685 |
| 14528         | Gch1        | GTP cyclohydrolase 1 | -0.71103 |
| 14536         | Nr6a1       | nuclear receptor subfamily 6, group A, member 1 | -0.67133 |
| 14537         | Gcnt1       | glucosaminyl (N-acetyl) transferase 1, core 2 | -1.25441 |
| 14559         | Gdf1        | growth differentiation factor 1 | -0.63519 |
| 14566         | Gdf9        | growth differentiation factor 9 | -0.88193 |
| 14567         | Gdi1        | guanosine diphosphate (GDP) dissociation inhibitor 1 | 0.625394 |
| 14573         | Gdnf        | glial cell line derived neurotrophic factor | -0.92243 |
| 14602         | Ghrhr       | growth hormone releasing hormone receptor | 0.587572 |
| 14610         | Gja10       | gap junction protein, alpha 10 | 1.249212 |
| 14615         | Gjc1        | gap junction protein, gamma 1 | -0.62925 |
| 14628         | Ostm1       | osteopetrosis associated transmembrane protein 1 | -0.61576 |
| 14654         | Gira1       | glycine receptor, alpha 1 subunit | 0.824164 |
| 14670         | Gn1l        | guanine nucleotide binding protein-like 1 | -0.96978 |
| 14705         | Bsc12       | Berardinelli-Seip congenital lipodystrophy 2 homolog (seipin) | 0.625182 |
| 14739         | S1pr2       | sphingosine-1-phosphate receptor 2 | -0.762 |
| 14744         | Gpr65       | G-protein coupled receptor 65 | -1.13336 |
| 14765         | Gpr50       | G-protein-coupled receptor 50 | 0.985069 |
| 14772         | Grk4        | G protein-coupled receptor kinase 4 | -1.02692 |
| 14886         | Gtf2i       | general transcription factor II 1 | 0.632871 |
| 14904         | Gtbp1       | GTP binding protein 1 | 0.678717 |
| 14940         | Gzmc        | granzyme C | -1.27284 |
| 15162         | Hck         | hemopoietic cell kinase | -1.01759 |
| 15205         | Hes1        | hairy and enhancer of split 1 (Drosophila) | -1.35713 |
| 15213         | Hey1        | hairy/enhancer-of-split related with YRPW motif 1 | -0.7366 |
| 15242         | Hhex        | hematopoietically expressed homeobox | -1.16279 |
| 15257         | Hipk1       | homeodomain interacting protein kinase 1 | -0.64974 |
| 15260         | Hira        | histone cell cycle regulation defective homolog A (S. cerevisiae) | 0.643582 |
| 15277         | Hk2         | hexokinase 2 | -1.11475 |
| 15365         | Hmga2-ps1   | high mobility group AT-hook 2, pseudogene 1 | -0.99581 |
| 15394         | Hoxa1       | homeobox A1 | -1.2248 |
| 15399         | Hoxa2       | homeobox A2 | -0.86133 |
| 15401         | Hoxa4       | homeobox A4 | 0.807245 |
| 15478         | Hs3st3a1    | heparan sulfate (glucosamine) 3-O-sulfotransferase 3A1 | -0.81603 |
| 15551         | Htr1b       | 5-hydroxytryptamine (serotonin) receptor 1B | -1.07636 |
| 15565         | Htr6        | 5-hydroxytryptamine (serotonin) receptor 6 | 1.237737 |
| 15566         | Htr7        | 5-hydroxytryptamine (serotonin) receptor 7 | -1.20957 |
| 15932         | Idua        | iduronidase, alpha-L- | 0.700167 |
| 15939         | Ier5        | immediate early response 5 | -0.62746 |
| 15964         | Ifna11      | interferon alpha 11 | -1.54094 |
| 16154         | Il10rA      | interleukin 10 receptor, alpha | -0.86002 |
| 16182         | Il18r1      | interleukin 18 receptor 1 | -1.19697 |
| 16192         | Il3ra       | interleukin 5 receptor, alpha | -0.89021 |
| 16348         | Inv         | inverin | -0.58624 |
| 16434         | Itpa        | inosine triphosphatase (nucleoside triphosphate pyrophosphatase) | -0.80611 |
| 16449         | Jag1        | jagged 1 | -0.61725 |
| 16504         | KcnC3       | potassium voltage gated channel, Shaw-related subfamily, member 3 | 0.632554 |
| 16554         | Kif13b      | kinesin family member 13B | 0.672891 |
| 16598         | Klf2        | Kruppel-like factor 2 (lunig) | -0.91807 |
| 16627         | Klra1       | killer cell lectin-like receptor, subfamily A, member 1 | -1.54136 |
| 16639         | Klra8       | killer cell lectin-like receptor, subfamily A, member 8 | -1.11264 |
| Entrez gene ID | Gene symbol | Gene name                                                                 | Log2FC |
|---------------|-------------|--------------------------------------------------------------------------|--------|
| 16658         | Mafb        | v-maf musculoaponeurotic fibrosarcoma oncogene family, protein B (avian) | −0.74396 |
| 16681         | Krt2        | keratin 2                                                                | 0.702325 |
| 16728         | L1cam       | L1 cell adhesion molecule                                                | 0.712046 |
| 16825         | Ldb1        | LIM domain binding 1                                                     | 0.607098 |
| 16874         | Lhx6        | LIM homeobox protein 6                                                   | 0.906306 |
| 16878         | Lif         | leukemia inhibitory factor                                               | −0.96284 |
| 16977         | Lrrc23      | leucine rich repeat containing 23                                        | −0.80253 |
| 16993         | Lta4h       | leukotriene A4 hydrolase                                                 | −0.77169 |
| 17101         | Lyst        | lysosomal trafficking regulator                                          | −0.82374 |
| 17110         | Lyz1        | lysozyme 1                                                               | −1.11301 |
| 17164         | Mapkapk2    | MAP kinase-activated protein kinase 2                                    | −0.68625 |
| 17188         | Maz         | MYC-associated zinc finger protein (purine-binding transcription factor)  | 0.74489 |
| 17240         | Mdfi        | MyoD family inhibitor                                                   | −0.98588 |
| 17254         | Slc3a2      | solute carrier family 3 (activators of dibasic and neutral amino acid transport), member 2 | 0.82047 |
| 17312         | Clec10a     | C-type lectin domain family 10, member A                                 | −1.13626 |
| 17364         | Trpm1       | transient receptor potential cation channel, subfamily M, member 1        | −0.91785 |
| 17389         | Mmp16       | matrix metalloproteinase 16                                              | −1.00112 |
| 17706         | ATP8        | ATP synthase F0 subunit 8                                                | 0.691655 |
| 17716         | ND1         | NADH dehydrogenase subunit 1                                             | 0.590994 |
| 17720         | ND4L        | NADH dehydrogenase subunit 4L                                            | 0.725803 |
| 17721         | ND5         | NADH dehydrogenase subunit 5                                             | 0.797087 |
| 17762         | Mapt        | microtubule-associated protein tau                                       | −0.77412 |
| 17777         | Mttp        | microsomal triglyceride transfer protein                                  | −0.71893 |
| 17880         | Myh11       | myosin, heavy polypeptide 11, smooth muscle                              | 1.047129 |
| 17910         | Myo15       | myosin XV                                                                | −1.22989 |
| 17918         | Myo5a       | myosin VA                                                                | −0.71429 |
| 17933         | Myt1l       | myelin transcription factor 1-like                                        | −1.12454 |
| 17954         | Nap1l2      | nucleosome assembly protein 1-like                                       | −1.48339 |
| 17962         | Nat3        | N-acetyltransferase 3                                                    | −2.61957 |
| 17999         | Nedd4       | neural precursor cell expressed, developmentally down-regulated 4         | −0.68405 |
| 18004         | Nek1        | NIMA (never in mitosis gene a)-related expressed kinase 1                | −0.59819 |
| 18080         | Nm         | ninein                                                                  | −0.92448 |
| 18104         | Nqo1        | NAD(P)H dehydrogenase, quinone 1                                         | −0.8429 |
| 18109         | Mync        | v-myc myelocytomatosis viral related oncogene, neuroblastoma derived (avian) | −0.91148 |
| 18198         | Musk        | muscle, skeletal, receptor tyrosine kinase                               | −0.95657 |
| 18208         | Ntn1        | netrin 1                                                                 | −0.91143 |
| 18214         | Ddr2        | discoidin domain receptor family, member 2                               | 0.740068 |
| 18223         | Numbl       | numb-like                                                                | −0.8831 |
| 18307         | Olfr10      | olfactory receptor 10                                                    | 0.993785 |
| 18392         | Orc1        | origin recognition complex, subunit 1                                   | −0.65765 |
| 18432         | Mybbp1a      | MYB binding protein (P160) 1a                                             | 0.819548 |
| 18439         | P2rx7       | purinergic receptor P2X, ligand-gated ion channel, 7                      | −1.32629 |
| 18452         | P4ha2       | procollagen-proline, 2-oxoglutarate 4-dioxygenase (proline 4-hydroxylase), alpha II polypeptide | −0.86494 |
| 18504         | Pax2        | paired box 2                                                             | 0.802788 |
| 18591         | Pdgd          | platelet derived growth factor, B polypeptide                            | −0.73039 |
| 18595         | Pdgfra        | platelet derived growth factor receptor, alpha polypeptide               | −0.79464 |
| 18604         | Pdk2        | pyruvate dehydrogenase kinase, isoenzyme 2                               | 0.787127 |
| 18637         | Pfn2        | prefoldin 2                                                              | −0.61542 |
| 18640         | Plkb2        | 6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 2                    | −0.73418 |
| 18679         | Phka1        | phosphorylase kinase alpha 1                                             | −2.34329 |
| 18706         | Pik3ca       | phosphatidylinositol 3-kinase, catalytic, alpha polypeptide               | −1.03111 |
| 18708         | Pik3r1       | phosphatidylinositol 3-kinase, regulatory subunit, polypeptide 1 (p85 alpha) | 0.668175 |
Table 3 (continued)

| Entrez gene ID | Gene symbol | Gene name                                                                 | Log2FC |
|----------------|-------------|---------------------------------------------------------------------------|--------|
| 18709          | Pik3r2      | phosphatidylinositol 3-kinase, regulatory subunit, polypeptide 2 (p85 beta) | 0.590647 |
| 18733          | Pirb        | paired Ig-like receptor B                                                 | -0.88798 |
| 18779          | Pla2r1      | phospholipase A2 receptor 1                                               | -0.62708 |
| 18786          | Plaa        | phospholipase A2, activating protein                                       | -0.94444 |
| 18810          | Plec        | plectin                                                                   | 0.588317 |
| 18830          | Pltp        | phospholipid transfer protein                                             | 1.179872 |
| 18996          | Pou4f1      | POU domain, class 4, transcription factor 1                               | -1.06055 |
| 19042          | Ppml1a      | protein phosphatase 1A homolog (S. cerevisiae)                            | -0.62283 |
| 19069          | Nup88       | nucleoporin 88                                                            | -0.61846 |
| 19076          | Prim2       | DNA primase, p58 subunit                                                  | -0.76832 |
| 19143          | St14        | suppression of tumorigenicity 14 (colon carcinoma)                        | 0.601419 |
| 19206          | Pch1        | patched homolog 1                                                         | 1.05912 |
| 19211          | Pten        | phosphatase and tensin homolog                                            | -0.65603 |
| 19222          | Ptgir       | prostaglandin 1 receptor (IP)                                             | -1.06318 |
| 19241          | Tmsb4x      | thymosin, beta 4, X chromosome                                            | -0.69182 |
| 19260          | Ptpn22      | protein tyrosine phosphatase, non-receptor type 22 (lymphoid)             | -1.3422 |
| 19261          | Sirpa       | signal-regulatory protein alpha                                            | -0.86607 |
| 19267          | Ptpre       | protein tyrosine phosphatase, receptor type, E                            | -0.80866 |
| 19274          | Ptprm       | protein tyrosine phosphatase, receptor type, M                            | -0.95632 |
| 19296          | Pvt1        | plasmacytoma variant translocation 1                                      | -0.99522 |
| 19326          | Rab11b      | RAB11B, member RAS oncogene family                                        | 0.842466 |
| 19358          | Rad23a      | RAD23a homolog (S. cerevisiae)                                            | 0.906769 |
| 19387          | Rangap1     | RAN GTPase activating protein 1                                            | 0.793977 |
| 19671          | Rce1        | RCE1 homolog, prenyl protein peptidase (S. cerevisiae)                    | -0.6925 |
| 19679          | Pitpm2      | phosphatidylinositol transfer protein, membrane-associated 2               | 0.656582 |
| 19713          | Ret         | ret proto-oncogene                                                        | -0.85647 |
| 20020          | Polr2a      | polymerase (RNA) II (DNA directed) polypeptide A                          | 0.609676 |
| 20163          | Rsu1        | Ras suppressor protein 1                                                  | 0.95159 |
| 20293          | Ccl12       | chemokine (C-C motif) ligand 12                                            | -0.84754 |
| 20301          | Ccl27a      | chemokine (C-C motif) ligand 27A                                           | -0.74211 |
| 20315          | Ccl3        | chemokine (C-C motif) ligand 3                                             | -2.21765 |
| 20360          | Ccl7        | chemokine (C-C motif) ligand 7                                            | -1.10314 |
| 20352          | Sema4b      | Sema domain, immunoglobulin domain (lg), transmembrane domain (TM) and short cytoplasmic domain, (semaphorin) 4B | -0.6176 |
| 20409          | Ostf1       | osteoclast stimulating factor 1                                            | -0.6474 |
| 20411          | Sorbs1      | sorbin and SH3 domain containing 1                                         | 0.827534 |
| 20430          | Cyfip1      | cytoplasmic PMR1 interacting protein 1                                     | 0.947959 |
| 20439          | Siah2       | seven in absentia 2                                                       | -0.61219 |
| 20443          | St3gal4     | ST3 beta-galactoside alpha-2,3-sialyltransferase 4                         | -1.00668 |
| 20522          | Slc23a1     | solute carrier family 23 (nucleobase transporters), member 1              | -0.76077 |
| 20535          | Slc4a2      | solute carrier family 4 (anion exchanger), member 2                       | 0.660713 |
| 20583          | Sna12       | snail family zinc finger 2                                                | -0.99509 |
| 20586          | Smarca4     | SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 4 | 0.754049 |
| 20587          | Smarchb1    | SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily b, member 1 | -0.82292 |
| 20616          | Snap91      | synaptosomal-associated protein 91                                         | -1.3523 |
| 20663          | Sos2        | son of sevenless homolog 2 (Drosophila)                                    | -0.65643 |
| 20668          | Sox13       | SRY (sex determining region Y)-box 13                                      | 0.593157 |
| 20678          | Sox5        | SRY (sex determining region Y)-box 5                                       | -1.24779 |
| 20682          | Sox9        | SRY (sex determining region Y)-box 9                                      | 0.74219 |
| 20688          | Sp4         | trans-acting transcription factor 4                                       | -0.72986 |
| 20728          | Spic        | Spi-C transcription factor (Spi-1/PU.1 related)                            | -1.05292 |
| 20737          | Spn         | sialophorin                                                               | -1.15893 |
| 20750          | Spp1        | secreted phosphoprotein 1                                                 | -2.51359 |
| 20779          | Src         | Rous sarcoma oncogene                                                     | 0.798342 |
| 20821          | Trim21      | tripartite motif-containing 21                                            | -0.59109 |
| 20849          | Stat4       | signal transducer and activator of transcription 4                        | -1.55203 |
| 20897          | Stra6       | stimulated by retinoic acid gene 6                                        | -1.73208 |
| 20917          | Suclg2      | succinate-Coenzyme A ligase, GDP-forming, beta subunit                    | 0.820739 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 20926         | Supt6       | suppressor of Ty 6 | 0.622045 |
| 20979         | Syt1        | synaptotagmin I | −0.65486 |
| 20981         | Syt3        | synaptotagmin III | 0.627271 |
| 21337         | Tacr2       | tachykinin receptor 2 | 0.87752 |
| 21349         | Tal1        | T cell acute lymphocytic leukemia 1 | −0.60698 |
| 21379         | Tbrg4       | transforming growth factor beta regulated gene 4 | 0.651441 |
| 21426         | Tfec        | transcription factor EC | −1.75512 |
| 21427         | Vps72       | vacuolar protein sorting 72 (yeast) | 0.636153 |
| 21665         | Tdg         | thymine DNA glycosylase | −0.91211 |
| 21819         | Tg          | thyroglobulin | −0.84227 |
| 21833         | Thra        | thyroid hormone receptor alpha | 0.631708 |
| 21917         | Tmpo        | thymopoietin | −0.66021 |
| 21930         | Tnai56      | tumor necrosis factor alpha induced protein 6 | −0.8083 |
| 21942         | Tnfsf9      | tumor necrosis factor receptor superfamily, member 9 | −1.41051 |
| 21943         | Tnfsf11     | tumor necrosis factor (ligand) superfamily, member 11 | −1.93816 |
| 21946         | Pglyr1      | peptidoglycan recognition protein 1 | 0.814414 |
| 21950         | Tnfsf9      | tumor necrosis factor (ligand) superfamily, member 9 | −0.82536 |
| 21951         | Tnks        | tankyrase, TRF1-interacting ankyrin-related ADP-ribose polymerase | 0.718512 |
| 21983         | Tpbg        | trophoblast glycoprotein | −0.91729 |
| 22022         | Tps2        | protein-tyrosine sulfotransferase 2 | −0.76378 |
| 22059         | Trp53       | transformation related protein 53 | 0.876668 |
| 22068         | Trpc6       | transient receptor potential cation channel, subfamily C, member 6 | −0.92416 |
| 22113         | Phlda2      | pleckstrin homology-like domain, family A, member 2 | −1.71736 |
| 22123         | Psmd3       | proteasome (prosome, macropain) 26S subunit, non-ATPase, 3 | 0.785903 |
| 22141         | Tub         | tubby candidate gene | −0.73882 |
| 22142         | Tuba1a      | tubulin, alpha 1A | −0.60318 |
| 22165         | Txk         | TXK tyrosine kinase | −1.63873 |
| 22174         | Tyro3       | TYRO3 protein tyrosine kinase 3 | −0.60664 |
| 22200         | Uba3        | ubiquitin-like modifier activating enzyme 3 | −0.75795 |
| 22213         | Uba1        | ubiquitin-like modifier activating enzyme 1 | 0.651076 |
| 22217         | Ube2g2      | ubiquitin-conjugating enzyme E2G 2 | −0.69422 |
| 22228         | Ucp2        | uncoupling protein 2 (mitochondrial, proton carrier) | 0.870627 |
| 22229         | Ucp3        | uncoupling protein 3 (mitochondrial, proton carrier) | 0.784513 |
| 22238         | Usp4        | ubiquitin specific peptidase 4 (proto-oncogene) | −0.68226 |
| 22260         | Nrlh2       | nuclear receptor subfamily 1, group H, member 2 | 0.604991 |
| 22321         | Vars        | valyl-tRNA synthetase | 0.645143 |
| 22359         | Vldlr       | very low density lipoprotein receptor | −0.66092 |
| 22363         | Vpreb2      | pre-B lymphocyte gene 2 | −1.24648 |
| 22378         | Wbp2        | WW domain binding protein 2 | 0.628657 |
| 22401         | Zmat3       | zinc finger matrin type 3 | −0.858 |
| 22420         | Wnt6        | wingless-type MMTV integration site family, member 6 | −0.65279 |
| 22439         | Xk          | Kell blood group precursor (McLeod phenotype) homolog | −0.65043 |
| 22441         | Xlr         | X-linked lymphocyte-regulated | −0.71592 |
| 22691         | Zscan2      | zinc finger and SCAN domain containing 2 | 0.610053 |
| 22693         | Zfp30       | zinc finger protein 30 | −0.68597 |
| 22700         | Zfp40       | zinc finger protein 40 | −0.59553 |
| 22710         | Zfp52       | zinc finger protein 52 | −1.00494 |
| 22715         | Zfp57       | zinc finger protein 57 | −1.40029 |
| 22750         | Zfp9        | zinc finger protein 9 | −1.25677 |
| 23890         | Gpr34       | G protein-coupled receptor 34 | −0.81039 |
| 23965         | Tenm3       | tenasin transmembrane protein 3 | −1.00709 |
| 23989         | Med24       | mediator complex subunit 24 | 0.629217 |
| 24004         | Rai2        | retinoic acid induced 2 | −0.86776 |
| 24017         | Rnf13       | ring finger protein 13 | −0.66811 |
| 24044         | Scamp2      | secretory carrier membrane protein 2 | 0.92345 |
| 24055         | Sh3bp2      | SH3-domain binding protein 2 | −0.71473 |
| 24056         | Sh3bp5      | SH3-domain binding protein 5 (BTK-associated) | −0.63987 |
| 24100         | Tpra1       | transmembrane protein, adipocyte associated 1 | 0.657648 |
| 24113         | Vax2        | ventral anterior homeobox 2 | −1.51845 |
| Entrez gene ID | Gene symbol | Gene name                                      | Log2FC |
|---------------|-------------|------------------------------------------------|--------|
| 24116         | Nelfa       | negative elongation factor complex member A, Whsc2 | −0.7588 |
| 24132         | Zfp53       | zinc finger protein 53                           | −0.60066 |
| 26428         | Orc4        | origin recognition complex, subunit 4           | −0.88981 |
| 26445         | Psm2        | proteasome (prosome, macropain) subunit, beta type 2 | −0.62388 |
| 26448         | Mok         | MOK protein kinase                               | −0.73433 |
| 26457         | Slc27a1     | solute carrier family 27 (fatty acid transporter), member 1 | 0.710861 |
| 26570         | Slc7a11     | solute carrier family 7 (cationic amino acid transporter, y+ system), member 11 | −1.84392 |
| 26874         | Abcd2       | ATP-binding cassette, sub-family D (ALD), member 2 | −2.35733 |
| 26877         | B3galt1     | UDP-Gal:betaGlCNac beta 1,3-galactosyltransferase, polypeptide 1 | −0.90065 |
| 26904         | Sh2d1b1     | SH2 domain containing 1B1                      | −2.90015 |
| 26914         | H2afy       | H2A histone family, member Y                   | 0.594298 |
| 26934         | Racgap1     | Rac GTPase-activating protein 1                 | 1.040865 |
| 26936         | Mprip       | myosin phosphatase Rho interacting protein      | 0.811936 |
| 26939         | Polr3e      | polymerase (RNA) III (DNA directed) polypeptide E | −0.64162 |
| 27028         | Ermap       | erythroblast membrane-associated protein        | 0.658658 |
| 27055         | Fkbp9       | FK506 binding protein 9                        | −0.64779 |
| 27083         | Xir4b       | X-linked lymphocyte-regulated 4B                | −1.16424 |
| 27401         | Skp2        | S-phase kinase-associated protein 2 (p45)       | −0.8318 |
| 27962         | D9Wsu90e    | DNA segment, Chr 9, Wayne State University 90, expressed | −1.27352 |
| 28006         | Fam21       | family with sequence similarity 21             | 0.79424 |
| 28064         | Yip5        | Yip1 domain family, member 3                   | 0.638926 |
| 28077         | Med10       | mediator complex subunit 10                   | −0.68093 |
| 28114         | Nsun2       | NOL1/NOP2/Sun domain family member 2           | 0.669351 |
| 28135         | Cep63       | centrosomal protein 63                         | 0.911453 |
| 29810         | Bag3        | BCL2-associated athanogene 3                   | −0.74136 |
| 29865         | Cabp5       | calcium binding protein 5                      | −0.63451 |
| 30052         | Pcsk1n      | proprotein convertase subtilisin/kexin type 1 inhibitor | 0.726871 |
| 30785         | Ctnnbp2     | cortactin binding protein 2                    | −0.69114 |
| 30840         | Fbxl6       | F-box and leucine-rich repeat protein 6         | −0.77752 |
| 30853         | Mll2        | myeloid leukemia factor 2                      | 0.678133 |
| 30928         | Zbb18       | zinc finger and BTB domain containing 18       | −0.61872 |
| 30951         | Cbx8        | chromobox 8                                    | −0.61326 |
| 30492         | Thop1       | thimet oligopeptidase 1                       | −1.47365 |
| 30781         | Dkk3        | dickkopf homolog 3 (Xenopus laevis)            | 0.666643 |
| 30876         | Tmod2       | tropomodulin 2                                 | −1.03941 |
| 30912         | Exosc10     | exosome component 10                          | 0.593462 |
| 50492         | Klr1g       | killer cell lectin-like receptor subfamily G, member 1 | −0.94962 |
| 50871         | Rif1        | Rap1 interacting factor 1 homolog (yeast)      | −0.60659 |
| 51873         | D2Ertd127e  | DNA segment, Chr 2, ERATO Dio 127, expressed   | −0.61571 |
| 52009         | Hn1l        | hematological and neurological expressed 1-like | −0.73126 |
| 52076         | Tmem38b     | transmembrane protein 38B                     | −1.71186 |
| 52250         | Reep1       | receptor accessory protein 1                   | −0.76504 |
| 52357         | Wwc2        | WW, C2 and coiled-coil domain containing 2     | −0.59555 |
| 52409         | D5Ertd798e  | DNA segment, Chr 5, ERATO Dio 798, expressed   | −1.18975 |
| 52480         | Snhg14      | small nucleolar RNA host gene 14               | −0.8668 |
| 52679         | E2f7        | E2F transcription factor 7                     | 0.61548 |
| 52855         | Lair1       | leukocyte-associated Ig-like receptor 1        | −1.02348 |
| 52992         | Sco1        | SCO cytochrome oxidase deficient homolog 1 (yeast) | −0.84059 |
| 53255         | Banp        | BTG3 associated nuclear protein                | −0.87587 |
| 53421         | Sec61a1     | Sec61 alpha 1 subunit (S. cerevisiae)          | 0.620013 |
| 53602         | Hpcal1      | hippocal-like 1                                | 0.608778 |
| 53614         | Reck        | reversion-inducing-cystine-rich protein with kazal motifs | −0.59103 |
| 53761         | Prrc2a      | proline-rich coiled-coil 2A                    | 0.77442 |
| 53871         | Pkd2l2      | polycystic kidney disease 2-like 2             | −0.816075 |
| 53872         | Caprin1     | cell cycle associated protein 1                | −0.82494 |
| 53959         | AA914427    | EST AA914427                                   | −1.05313 |
| 54125         | Polm        | polymerase (DNA directed), mu                  | −0.84766 |
| 54354         | Rassf5      | Ras association (RalGDS/AF-6) domain family member 5 | −1.9136 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 54397         | Ppt2        | palmitoyl-protein thioesterase 2 | 0.646458 |
| 54646         | Ppp1r3f     | protein phosphatase 1, regulatory (inhibitor) subunit 3F | −0.70748 |
| 54667         | Atp8b2      | ATPase, class I, type 8B, member 2 | −0.68706 |
| 54710         | Hs3st3b1    | heparan sulfate (glucosamine) 3-O-sulfotransferase B1 | −1.31401 |
| 54712         | Pxncl       | plexin C1 | −1.25562 |
| 55983         | Pdzr3n3     | PDZ domain containing RING finger 3 | 0.683867 |
| 55984         | Camkk1      | calcium/calmodulin-dependent protein kinase kinase 1, alpha | −0.79253 |
| 55993         | Msh4        | mutant S homolog 4 (E. coli) | 1.045297 |
| 55994         | Smad9       | SMAD family member 9 | −0.94001 |
| 56041         | Us01        | USO1 vesicle docking factor | −0.79266 |
| 56070         | Tceg1       | transcription elongation regulator 1 (CA150) | −0.84427 |
| 56079         | Astn2       | astrotactin 2 | 0.795433 |
| 56149         | Grasp       | GRP1 (general receptor for phosphoinositides 1)-associated scaffold protein | −0.88589 |
| 56191         | Tro         | trophinin | −0.80328 |
| 56193         | Plek        | pleckstrin | −1.0003 |
| 56198         | Heyl        | hairy/enhancer-of-split related with YRPW motif-like | −0.70871 |
| 56273         | Pex14       | peroxisomal biogenesis factor 14 | −0.82539 |
| 56305         | Pitpnb      | phosphatidylinositol transfer protein, beta | −0.86783 |
| 56323         | Dnajb5      | DnaJ (Hsp40) homolog, subfamily B, member 5 | 0.591571 |
| 56380         | Arid3b      | AT rich interactive domain 3B (BRIGHT-like) | −0.71907 |
| 56437         | Rrad        | Ras-related associated with diabetes | −0.75675 |
| 56448         | Cyp2d22     | cytochrome P450, family 2, subfamily d, polypeptide 22 | 0.760234 |
| 56484         | Foon3       | forkhead box O3 | 0.778968 |
| 56492         | Lamtor3     | late endosomal/lysosomal adaptor, MAPK and MTOR activator 3 | −0.63953 |
| 56496         | Gpr132      | G protein-coupled receptor 132 | −1.21147 |
| 56702         | Hist1h1b    | histone cluster 1, H1b | 1.152689 |
| 56708         | Clcf1       | cardiotoxin-like cytokine factor 1 | −0.92025 |
| 56743         | Lat2        | linker for activation of T cells family, member 2 | −0.59939 |
| 56747         | Sez6l       | seizure related 6 homolog like | 0.703235 |
| 56752         | Aldh9a1     | aldehyde dehydrogenase 9, subfamily A1 | 0.749505 |
| 57257         | Vav3        | vav 3 oncogene | −0.62284 |
| 57316         | C1d         | C1D nuclear receptor co-repressor | −0.66216 |
| 57781         | Cd200r1     | CD200 receptor 1 | −0.75241 |
| 57815         | Spata5      | spermatogenesis associated 5 | −0.86262 |
| 57915         | Tbc1d1      | TBC1 domain family, member 1 | −0.92906 |
| 58180         | Hic2        | hypermethylated in cancer 2 | −0.59036 |
| 58198         | Sal1        | sal-like 1 (Drosophila) | −0.86838 |
| 58206         | Zbbh32      | zinc finger and BTB domain containing 32 | −0.64192 |
| 58229         | Efc1        | EF hand and coiled-coil domain containing 1 | 0.709159 |
| 58239         | Daxi        | dexamethasone-induced transcript | −0.6686 |
| 58242         | Nudt11      | nudi (nucleoside diphosphate linked moiety X)-type motif 11 | −1.38558 |
| 58248         | 1700123O20Rik | RIKEN cDNA 1700123O20 gene | −0.61058 |
| 58802         | Kcnmb4      | potassium large conductance calcium-activated channel, subfamily M, beta member 4 | −0.92256 |
| 58803         | Pga5        | pepsinogen 5, group I | 0.756267 |
| 58804         | Cdc42ep5    | CDC42 effector protein (Rho GTPase binding) 5 | 0.79136 |
| 58894         | Zip862-ps   | zinc finger protein 862, pseudogene | −0.85602 |
| 60321         | Wbp11       | WW domain binding protein 11 | −0.60117 |
| 60322         | Chst7       | carbohydrate (N-acetylglucosamin) sulfotransferase 7 | −0.78254 |
| 60406         | Sapl30      | sin3 associated polypeptide | −0.87835 |
| 60531         | Npfl        | neuropeptide VF precursor | −1.35333 |
| 63859         | Impg1       | interphotoreceptor matrix proteoglycan 1 | 0.76522 |
| 63953         | Dusp10      | dual specificity phosphatase 10 | −0.93348 |
| 64085         | Cstn2       | calsyntenin 2 | −1.24802 |
| 64095         | Gpr35       | G protein-coupled receptor 35 | 0.628931 |
| 64214         | Rgs18       | regulator of G-protein signaling 18 | −0.96826 |
| 64291         | Osbpl1a     | oxysterol binding protein-like 1A | 0.659995 |
| 64383         | Sirt2       | sirtuin 2 | 0.588691 |
| 64450         | Gpr85       | G protein-coupled receptor 85 | −1.36561 |
Table 3 (continued)

| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|----------------|-------------|-----------|--------|
| 64654          | Fgf23       | fibroblast growth factor 23 | 0.67401 |
| 65079          | Rtn4r       | reticulon 4 receptor | −1.74136 |
| 65107          | Lrp10       | low-density lipoprotein receptor-related protein 10 | 0.681082 |
| 66011          | Ranbp17     | RAN binding protein 17 | −1.07455 |
| 66086          | Fopnl       | Fgr1op N-terminal like | −0.62764 |
| 66118          | Sarp        | SAP domain containing ribonucleoprotein | −0.71805 |
| 66120          | Fkbp11      | FK506 binding protein 11 | −3.83345 |
| 66140          | Sk2a        | spindle and kinetochore associated complex subunit 2 | −2.08181 |
| 66156          | Anapc11     | anaphase promoting complex subunit 11 | 0.688481 |
| 66158          | Cxx1a       | CAAX box 1A | 0.689986 |
| 66185          | 1110037F02Rik | RIKEN cDNA 1110037F02 gene | −0.93276 |
| 66194          | Pycrl       | pyrroline-5-carboxylate reductase-like | −0.6542 |
| 66223          | Mrpl35      | mitochondri al ribosomal protein L35 | −0.89475 |
| 66225          | Llph        | LLP homolog, long-term synaptic facilitation (Aplysia) | −0.65982 |
| 66226          | Trappc2     | trafficking protein particle complex 2 | −0.87458 |
| 66240          | 1110037F02Rik | RIKEN cDNA 1110037F02 gene | −0.93276 |
| 66259          | Camk2n1     | calcium/calmodulin-dependent protein kinase II inhibitor 1 | −0.76737 |
| 66334          | 1700025K04Rik | RIKEN cDNA 1700025K04 gene | −2.90572 |
| 66410          | Mterf3      | mitochondrial transcription termination factor 3 | −0.90271 |
| 66440          | Cdc26       | cell division cycle 26 | −0.79685 |
| 66456          | 2810001G20Rik | RIKEN cDNA 2810001G20 gene | −0.7053 |
| 66548          | Adamts5     | ADAMTS-like 5 | 0.651309 |
| 66618          | Snrnp27     | small nuclear ribonucleoprotein 27 (U4/U6.U5) | −0.70114 |
| 66638          | 5730458M16Rik | RIKEN cDNA 5730458M16 gene | −0.73631 |
| 66681          | Pgm1        | phosphoglucomutase 1 | −0.60273 |
| 66684          | Tceal8      | transcription elongation factor A (SII)-like 8 | −0.63863 |
| 66707          | Nkapl       | NFkB activating protein-like | −0.93526 |
| 66714          | 4921524J17Rik | RIKEN cDNA 4921524J17 gene | −0.82902 |
| 66765          | 4933411K16Rik | RIKEN cDNA 4933411K16 gene | 0.616624 |
| 66776          | Ptsd-ps3    | phosphatidylinerse decarboxylase, pseudogene 3 | 0.667682 |
| 66789          | Alg14       | asparagine-linked glycosylation 14 | −0.63171 |
| 66910          | Tmem107     | transmembrane protein 107 | −0.8006 |
| 66932          | Rlx1        | REX1, RNA exonuclease 1 homolog (S. cerevisiae) | 0.714589 |
| 66939          | Aagab       | alpha- and gamma-adaptin binding protein | 0.644505 |
| 66975          | Trappc13    | trafficking protein particle complex 13 | −0.75532 |
| 67037          | Pmfl        | polyamine-modulated factor 1 | 0.838946 |
| 67039          | Rhm25       | RNA binding motif protein 25 | −0.75041 |
| 67050          | Nkap        | NFkB activating protein | −0.77782 |
| 67103          | Ptgr1       | prostaglandin reductase 1 | −0.59049 |
| 67128          | Ube2g1      | ubiquitin-conjugating enzyme E2G 1 | −0.6596 |
| 67136          | Kbtbd4      | kelch repeat and BTB (POZ) domain containing 4 | −0.61233 |
| 67155          | Smarca2     | SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 2 | 0.818912 |
| 67164          | Lipt2       | lipoic(octanoyl) transferase 2 (putative) | −0.6135 |
| 67222          | Srpbl1      | serum response factor binding protein 1 | −0.60051 |
| 67228          | Dph7        | diphthamide biosynthesis 7 | −0.64482 |
| 67239          | Rpl2        | ribosome production factor 2 homolog (S. cerevisiae) | −0.83676 |
| 67266          | Fam69a      | family with sequence similarity 69, member A | −0.74891 |
| 67311          | Nanp        | N-acetylneuraminic acid phosphatase | −0.63962 |
| 67329          | 1700018L02Rik | RIKEN cDNA 1700018L02 gene | 0.653454 |
| 67379          | Dodd2       | death effector domain-containing DNA binding protein 2 | −0.63439 |
| 67412          | Soga3       | SOGA family member 3 | −1.0559 |
| 67416          | Armcx2      | armadillo repeat containing, X-linked 2 | −0.63628 |
| 67490          | Ufl1        | UFM1 specific ligase 1 | −0.60828 |
| 67492          | Zfand4      | zinc finger, AN1-type domain 4 | −1.07333 |
| 67504          | Rnfl151     | ring finger protein 151 | −0.6958 |
| 67543          | Pabpc6      | poly(A) binding protein, cytoplasmic 6 | −1.26116 |
| 67552          | H2afy3      | H2A histone family, member Y3 | −0.64924 |
| 67556          | Pigm        | phosphatidylinositol glycan anchor biosynthesis, class M | −0.65397 |
| 67581          | Tbc1d23     | TBC1 domain family, member 23 | −0.96763 |
| Entrez gene ID | Gene symbol | Gene name                                                                 | Log2FC |
|---------------|-------------|----------------------------------------------------------------------------|--------|
| 67605         | Akt1s1      | AKT1 substrate 1 (proline-rich)                                            | 0.61903|
| 67618         | Aasdhppt    | aminoadipate-semialdehyde dehydrogenase-phospho-pantetheinyl transferase   | –0.83089|
| 67619         | Nob1        | NIN1/RPN12 binding protein 1 homolog (S. cerevisiae)                       | –0.68517|
| 67647         | 4930523C07Rik| RIKEN cDNA 4930523C07 gene                                                  | –0.63528|
| 67685         | Dyx1c1      | dylesia susceptibility 1 candidate 1 homolog (human)                       | –0.72161|
| 67708         | Pcnix4      | pecanex-like 4 (Drosophila)                                                | –0.60239|
| 67726         | Fam114a2    | family with sequence similarity 114, member A2                            | 0.697382|
| 67728         | Dph2        | DPH2 homolog (S. cerevisiae)                                               | –0.59488|
| 67746         | 4930577N17Rik| RIKEN cDNA 4930577N17 gene                                                  | –0.7114|
| 67749         | Mgapr       | mitochondria localized glutamic acid rich protein                          | –1.12453|
| 67832         | Brix1       | BRX1, biogenesis of ribosomes, homolog (S. cerevisiae)                    | –0.67051|
| 67843         | Slic35a4    | solute carrier family 35, member A4                                        | 0.624622|
| 67883         | Ux51        | UDP-glucuronate decarboxylase 1                                            | –0.65658|
| 67902         | Sumf2       | sulfatase modifying factor 2                                               | –0.78246|
| 67920         | Mak16       | MAK16 homolog (S. cerevisiae)                                              | –0.69434|
| 67934         | 1700124L16Rik| RIKEN cDNA 1700124L16 gene                                                 | –1.23527|
| 67952         | Tomm20      | translocase of outer mitochondrial membrane 20 homolog (yeast)             | –0.58862|
| 67956         | Setd8       | SET domain containing (lysine methyltransferase) 8                         | 0.765426|
| 68037         | 2900093K20Rik| RIKEN cDNA 2900093K20 gene                                                 | –0.70538|
| 68040         | Zfp593      | zinc finger protein 593                                                   | –0.65741|
| 68055         | Atps5       | ATP synthase, H+ transporting, mitochondrial F0 complex, subunit S          | –0.61914|
| 68075         | Lurap1      | leucine rich adaptor protein 1                                             | –0.73969|
| 68127         | B230217C12Rik| RIKEN cDNA B230217C12 gene                                                 | –0.97611|
| 68163         | A930006D01Rik| RIKEN cDNA A930006D01 gene                                                 | –2.0335|
| 68226         | Efcb2       | EF-hand calcium binding domain 2                                           | 0.779822|
| 68299         | Vps53       | vacuolar protein sorting 53 (yeast)                                        | –0.95112|
| 68304         | Kdelc2      | KDEL (Lys-Asp-Glu-Leu) containing 2                                       | –0.59902|
| 68318         | Aphi1c      | anterior pharynx defective 1c homolog (C. elegans)                         | –0.84754|
| 68375         | Ndufa8      | NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 8                     | –0.68243|
| 68402         | 0710001A04Rik| RIKEN cDNA 0710001A04 gene                                               | –1.0965|
| 68465         | Adipor2     | adiponectin receptor 2                                                    | 0.789982|
| 68691         | Kans11      | KAT8 regulatory NSL complex subunit 1-like                                | –0.63651|
| 68703         | Rere        | arginine glutamic acid dipeptide (RE) repeats                             | 0.677792|
| 68725         | 110002F04Rik| RIKEN cDNA 110002F04 gene                                                 | –2.59569|
| 68750         | Rreb1       | ras responsive element binding protein 1                                  | –0.6608|
| 68770         | Phtf2       | putative homeodomain transcription factor 2                               | –0.75238|
| 68776         | Taf11       | TAF11 RNA polymerase II, TATA box binding protein (TBP)-associated factor | –0.64046|
| 68938         | Aspocr1     | alveolar soft part sarcoma chromosome region, candidate 1 (human)          | 0.878954|
| 68946         | 1500002C15Rik| RIKEN cDNA 1500002C15 gene                                               | –0.86573|
| 68979         | Nol11       | nucleolar protein 11                                                     | –1.06513|
| 69002         | 1500026H17Rik| RIKEN cDNA 1500026H17 gene                                               | –0.70915|
| 69202         | Ptns        | parathymosin                                                            | 0.770376|
| 69237         | Gtbp4       | GTP binding protein 4                                                    | –0.66275|
| 69428         | 1700016C15Rik| RIKEN cDNA 1700016C15 gene                                               | –0.73563|
| 69459         | Ubil7       | ubiquitin-like 7 (bone marrow stromal cell-derived)                      | 1.154686|
| 69519         | Rwd22a      | RWD domain containing 2A                                                | –0.85754|
| 69581         | Rhou        | ras homolog gene family, member U                                        | –0.67623|
| 69608         | Sec24d      | Sec24 related gene family, member D (S. cerevisiae)                      | –0.71508|
| 69627         | Fam89a      | family with sequence similarity 89, member A                             | –0.98462|
| 69635         | Dapk1       | death associated protein kinase 1                                        | –0.74639|
| 69683         | Emc10       | ER membrane protein complex subunit 10                                   | 0.911207|
| 69690         | 2310057B04Rik| RIKEN cDNA 2310057B04 gene                                               | –0.65452|
| 69749         | Epb4.14aos  | erythrocyte protein band 4.1 like 1 opposite strand                     | –0.86027|
| 69769         | Tnfaip8l2   | tumor necrosis factor, alpha-induced protein 8-like 2                   | –1.08013|
| 69809         | 1810046K07Rik| RIKEN cDNA 1810046K07 gene                                               | –1.42871|
| 69810         | Clec4b1     | C-type lectin domain family 4, member b1                                  | –0.84026|
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 69849         | 2010007H06Rik | RIKEN cDNA 2010007H06 gene | −1.37376 |
| 69863         | Ttc39b      | tetratricopeptide repeat domain 39B | −0.95921 |
| 69922         | Vrk2        | vaccinia related kinase 2 | −0.66165 |
| 69930         | Zfp715      | zinc finger protein 715 | −0.8557 |
| 69976         | Galk2       | galaktokinase 2 | −0.64906 |
| 69981         | Tmem30a     | transmembrane protein 30A | −0.77382 |
| 69987         | 1700026L06Rik | RIKEN cDNA 1700026L06 gene | −0.7847 |
| 70001         | 170002B804Rik | NADH dehydrogenase (ubiquinone) 1 beta subcomplex 8 pseudogene | −0.74908 |
| 70057         | 2210008F06Rik | RIKEN cDNA 2210008F06 gene | −1.03059 |
| 70082         | Lysmd2      | LysM, putative peptidoglycan-binding, domain containing 2 | −0.739 |
| 70190         | 2610036A22Rik | RIKEN cDNA 2610036A22 gene | −0.96837 |
| 70227         | Zfp619      | zinc finger protein 619 | −0.61798 |
| 70296         | Lysmd2      | LysM, putative peptidoglycan-binding, domain containing 2 | −0.739 |
| 70317         | Arl16       | ADP-ribosylation factor-like 16 | −0.61566 |
| 70325         | Pigw        | phosphatidylinositol glycan anchor biosynthesis, class W | −0.75659 |
| 70355         | Gprc5c      | G protein-coupled receptor, family C, group 5, member C | −0.67835 |
| 70426         | Tekt5       | tektin 5 | 0.70459 |
| 70449         | 2610209C05Rik | RIKEN cDNA 2610209C05 gene | −1.40834 |
| 70458         | 2610318B04Rik | RIKEN cDNA 2610318B04 gene | −0.92819 |
| 70489         | Zcchc8      | zinc finger, CCHC domain containing 8 | −0.94749 |
| 70500         | 3021401N23Rik | RIKEN cDNA 3021401N23 gene | −0.69732 |
| 70535         | Gprc5c      | G protein-coupled receptor, family C, group 5, member C | −0.67835 |
| 70650         | 4921515G04Rik | RIKEN cDNA 4921515G04 gene | −0.6536 |
| 70680         | Cabyr       | calcium-binding tyrosine-(Y)-phosphorylation regulated (fibrousheatin 2) | −1.43923 |
| 70720         | P2ry12      | purinergic receptor P2Y, G-protein coupled 12 | −0.98975 |
| 70789         | Oxsn        | 3-oxoacyl-ACP synthase, mitochondrial | −0.77899 |
| 70833         | Zfp597      | zinc finger protein 597 | −0.86648 |
| 70919         | Cdk1        | cyclin-dependent kinase-like 1 (CDC2-related kinase) | −0.75399 |
| 70934         | Car13       | carbonic anhydrase 13 | −0.84289 |
| 70998         | Phf6        | PHD finger protein 6 | −0.64555 |
| 71063         | Zfp597      | zinc finger protein 597 | −0.86648 |
| 71091         | Cdkn2aip    | CDKNA2 interacting protein | −0.93838 |
| 71132         | P2ry12      | purinergic receptor P2Y, G-protein coupled 12 | −0.98975 |
| 71133         | Car13       | carbonic anhydrase 13 | −0.84289 |
| 71147         | Oxsn        | 3-oxoacyl-ACP synthase, mitochondrial | −0.77899 |
| 71166         | Fbxo24      | F-box protein 24 | −1.0756 |
| 71198         | 5430427O19Rik | RIKEN cDNA 5430427O19 gene | −1.02284 |
| 71246         | Fln3        | fibronectin leucine rich transmembrane protein 3 | −0.662 |
| 71249         | 8430406P12Rik | RIKEN cDNA 8430406P12 gene | −1.05142 |
| 71254         | 8430432A02Rik | RIKEN cDNA 8430432A02 gene | −0.7714 |
| 71254         | Arhgap42    | Rho GTPase activating protein 42 | −0.65337 |
| 71260         | 9130008F23Rik | RIKEN cDNA 9130008F23 gene | −0.6464 |
| 71262         | Senp8       | SUMO/sentrin specific peptidase 8 | −1.02521 |
| 71262         | Wdr27       | WD repeat domain 27 | −0.85462 |
| 71268         | Cic         | capucia homolog (Drosophila) | 0.612276 |
| 71272         | Smug1       | single-strand selective monofunctional uracil DNA glycosylase | 0.842899 |
| 71276         | Pvr14       | poliovirus receptor-related 4 | −1.81387 |
| 71277         | Ap2b1       | adaptor-related protein complex 2, beta 1 subunit | −0.83671 |
| 71277         | Tha1        | threonine aldolase 1 | 0.590807 |
| 71280         | Isyn1       | myo-inositol 1-phosphate synthase A1 | 0.66428 |
| 71285         | Pitpnc1     | phosphatidylinositol transfer protein, cytoplasmic 1 | −0.95258 |
| 71285         | Kif23       | kinesin family member 23 | 0.642121 |
| 71289         | Clap45      | clila and flagella associated protein 45 | −0.94117 |
| 71293         | 2310003N18Rik | RIKEN cDNA 2310003N18 gene | 1.017664 |
| 71293         | Dus4l       | dihydrouridine synthase 4-like (S. cerevisiae) | −0.83778 |
| 71293         | 2310047M10Rik | RIKEN cDNA 2310047M10 gene | −0.61514 |
| 71293         | Cat13       | carbonic anhydrase 13 | −0.70619 |
| 71295         | Nanog       | Nanog homeobox | 1.055165 |
| 71295         | Gp2c        | glycican 2 (cerebroglycan) | −0.78001 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 71971         | Zswim1      | zinc finger SWIM-type containing 1 | −0.76874 |
| 71989         | Rpusd4      | RNA pseudouridylate synthase domain containing 4 | −0.61413 |
| 71997         | Smg9        | smg-9 homolog, nonsense mediated mRNA decay factor (C. elegans) | 0.880594 |
| 72117         | Naa50       | N(alpha)-acetyltransferase 50, NatE catalytic subunit | −0.63577 |
| 72145         | Wdfy3       | WD repeat and FYVE domain containing 3 | 0.75203 |
| 72167         | Thumpd2     | THUMP domain containing 2 | −0.69783 |
| 72171         | Shq1        | SHQ1 homolog (S. cerevisiae) | −0.92009 |
| 72185         | Dbnnd1      | dysbindin (dystrobrevin binding protein 1) domain containing 1 | −0.62561 |
| 72201         | Otd6b       | OTU domain containing 6B | −0.60111 |
| 72215         | 1700001P01Rik | RIKEN cDNA 1700001P01 gene | −0.71342 |
| 72315         | Ccdc74a     | coiled-coil domain containing 74A | 0.598538 |
| 72333         | Palld       | palladin, cytoskeletal associated protein | 0.889101 |
| 72344         | Ups36       | ubiquitin specific peptidase 36 | 0.598538 |
| 72388         | Ripk4       | receptor-interacting serine-threonine kinase 4 | −0.64809 |
| 72397         | Rbm12b1     | RNA binding motif protein 12 B1 | −0.60613 |
| 72425         | Katnb1      | katanin p80 subunit B like 1 | −0.61353 |
| 72459         | Htsf1       | HIV TAT specific factor 1 | 0.591036 |
| 72475         | Ssbp3       | single-stranded DNA binding protein 3 | 0.991036 |
| 72515         | Wdr43       | WD repeat domain 43 | −0.60297 |
| 72543         | Mvb12b      | multivesicular body subunit 12B | −0.83561 |
| 72555         | Shis9       | shis family member 9 | 1.597419 |
| 72569         | Bbs5        | Bardet-Biedl syndrome 5 (human) | −0.83584 |
| 72640         | Mex3a       | mexit homolog A (C. elegans) | −1.39724 |
| 72661         | Serp2       | stress-associated endoplasmic reticulum protein family member 2 | −0.60195 |
| 72662         | Dls3        | DIS3 mitotic control homolog (S. cerevisiae) | −0.65819 |
| 72716         | 2810047C21Rik | RIKEN cDNA 2810047C21 gene 1 | −0.65151 |
| 72720         | Zfp248      | zinc finger protein 248 | −0.81831 |
| 72723         | Zfp74       | zinc finger protein 74 | −0.69623 |
| 72750         | Fam117b     | family with sequence similarity 117, member B | −0.72226 |
| 72754         | Arhgef10l   | Rho guanine nucleotide exchange factor (GEF) 10-like | −0.96016 |
| 72789         | Veph1       | ventricular zone expressed PH domain-containing 1 | 0.922191 |
| 72828         | Ubash3b     | ubiquitin associated and SH3 domain containing, B | −0.61811 |
| 72834         | 2810468N07Rik | RIKEN cDNA 2810468N07 gene | −0.96156 |
| 72893         | 2900040C04Rik | RIKEN cDNA 2900040C04 gene | 0.754736 |
| 72925         | Spock3      | sparc/osteonecrotin, cvev and kazal-like domains proteoglycan 3 | −1.02503 |
| 72927         | Hepacam     | hepatocyte cell adhesion molecule | 1.042589 |
| 72962         | Tnem192     | transmembrane protein 192 | 0.615945 |
| 73049         | 2900054C01Rik | RIKEN cDNA 2900054C01 gene | −0.78302 |
| 73067         | Tnem192     | transmembrane protein 192 | 0.63416 |
| 73094         | Sgip1       | SH3-domain GRB2-like (endophilin) interacting protein 1 | −0.99541 |
| 73162         | Otd3c3      | OTU domain containing 3 | −0.69108 |
| 73183         | 5430402013Rik | RIKEN cDNA 5430402013 gene | −1.26961 |
| 73192         | Xpot        | exportin, tRNA (nuclear export receptor for tRNAs) | −0.76378 |
| 73225         | Fam118a     | family with sequence similarity 118, member A | −0.66145 |
| 73259         | Clb4        | calcium and integrin binding family member 4 | 0.724613 |
| 73321         | 1700042010Rik | RIKEN cDNA 1700042010 gene | −1.49591 |
| 73332         | Ccdc30      | coiled-coil domain containing 30 | 0.84663 |
| 73341         | Arhgef6     | Rac/Cdc42 guanine nucleotide exchange factor (GEF) 6 | −0.59782 |
| 73385         | Fam177a     | family with sequence similarity 177, member A | −1.47643 |
| 73467         | 1700066M21Rik | RIKEN cDNA 1700066M21 gene | −0.65242 |
| 73528         | 1700081N11Rik | RIKEN cDNA 1700081N11 gene | −0.95721 |
| 73634         | 1700125H20Rik | RIKEN cDNA 1700125H20 gene | −1.57148 |
| 73656         | Ms46c       | membrane-spanning 4-domains, subfamily A, member 6C | −0.87714 |
| 73689         | Bloc1s2     | biogenesis of lysosomal organelles complex-1, subunit 2 | −0.67351 |
| 73730         | Lce1l       | late cornified envelope 1L | 0.597907 |
| 73953         | 4930421J07Rik | RIKEN cDNA 4930421J07 gene | −0.68315 |
| 73994         | 4930449C09Rik | RIKEN cDNA 4930449C09 gene | 0.607311 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 74002         | Psd2        | pleckstrin and Sec7 domain containing 2 | −1.21546 |
| 74091         | Npl         | N-acetylneuraminic pyruvate lyase | −0.87224 |
| 74103         | Nebl        | nebu tetle | −1.23266 |
| 74149         | Zip946      | zinc finger protein 946 | −0.74177 |
| 74197         | Gtf2e1      | general transcription factor II E, polypeptide 1 (alpha subunit) | −0.65696 |
| 74249         | Lrc2        | leucine rich repeat containing 2 | 1.126143 |
| 74351         | Ddx23       | DEAD (Asp-Glu-Ala-Asp) box polypeptide 23 | 0.985507 |
| 74393         | Map10       | microtubule-associated protein 10 | −0.60922 |
| 74438         | Clvs1       | clavesin 1 | −1.00791 |
| 74448         | Arl13a      | ADP-ribosylation factor-like 13A | −1.46547 |
| 74528         | Mgte1       | mitochondrial genome maintenance exonuclease 1 | −0.85113 |
| 74552         | Nipal3      | NIPA-like domain containing 3 | −0.73293 |
| 74564         | Manf        | mesencephalic astrocyte-derived neurotrophic factor | −0.6492 |
| 74626         | Tnmem81     | transmembrane protein 81 | −0.62761 |
| 74635         | Gtf2e1      | general transcription factor II E, polypeptide 1 (alpha subunit) | −0.65696 |
| 74670         | Zip946      | zinc finger protein 946 | −0.74177 |
| 74675         | Ptdch3      | patched domain containing 3 | 0.674573 |
| 74753         | 5830415F09Rik | RIKEN cDNA 5830415F09 gene | −0.62319 |
| 74840         | Manf        | mesencephalic astrocyte-derived neurotrophic factor | −0.6492 |
| 74844         | 4833447I15Rik | RIKEN cDNA 4833447I15 gene | −0.71396 |
| 74963         | 4930470F04Rik | RIKEN cDNA 4930470F04 gene | −1.71837 |
| 75115         | 4930509E16Rik | RIKEN cDNA 4930509E16 gene | −1.48728 |
| 75120         | 4930509E22Rik | RIKEN cDNA 4930509E22 gene | 1.032611 |
| 75160         | 4930543I03Rik | RIKEN cDNA 4930543I03 gene | −1.26272 |
| 75203         | 4930539N22Rik | RIKEN cDNA 4930539N22 gene | −1.98321 |
| 75216         | Cep128      | centrosomal protein 128 | 0.860122 |
| 75224         | 4930528J11Rik | RIKEN cDNA 4930528J11 gene | 0.798136 |
| 75357         | 4930557J02Rik | RIKEN cDNA 4930557J02 gene | 1.10407 |
| 75516         | Ttc32       | tetratricopeptide repeat domain 32 | −0.58808 |
| 75625         | Mageh1      | melanoma antigen, family H, 1 | −0.94946 |
| 75627         | Snapc1      | small nuclear RNA activating complex, polypeptide 1 | −0.69748 |
| 75645         | Ccdc172     | coiled-coil domain containing 172 | −2.18275 |
| 75660         | Lin37       | lin-37 homolog (C. elegans) | 0.595662 |
| 75710         | Rbm12       | RNA binding motif protein 12 | −0.71791 |
| 75722         | 4932412D23Rik | RIKEN cDNA 4932412D23 gene | 0.739958 |
| 75735         | Pank1       | pantothenate kinase 1 | −1.01252 |
| 75745         | Rian        | RNA imprinted and accumulated in nucleus | −0.67685 |
| 75754         | 9030607L02Rik | RIKEN cDNA 9030607L02 gene | −0.63813 |
| 75767         | Rab11fip1   | RAB11 family interacting protein 1 (class I) | −0.59524 |
| 75756         | Lprp5       | lipid phosphate phosphatase-related protein type 5 | −1.72522 |
| 75812         | Tasp1       | taspase, threonine aspartate 1 | −0.73887 |
| 75913         | 4930579G18Rik | RIKEN cDNA 4930579G18 gene | 0.867669 |
| 75939         | 4930579G24Rik | RIKEN cDNA 4930579G24 gene | −0.74679 |
| 75974         | Dock11      | dedicator of cytokinesis 11 | −0.60614 |
| 75978         | 5031415H12Rik | RIKEN cDNA 5031415H12 gene | −0.80192 |
| 75985         | Rab30       | RAB30, member RAS oncogene family | −0.92072 |
| 75995         | 5033417F24Rik | RIKEN cDNA 5033417F24 gene | −0.66926 |
| 76013         | 5830407E08Rik | RIKEN cDNA 5830407E08 gene | −1.76901 |
| 76056         | 5830443J22Rik | RIKEN cDNA 5830443J22 gene | −0.71186 |
| 76080         | Tpal        | toco phor (alpha) transfer protein-like | −0.7626 |
| 76286         | 1110006E14Rik | RIKEN cDNA 1110006E14 gene | −0.75768 |
| 76293         | Mfap4       | microfibrillar-associated protein 4 | 0.649903 |
| 76311         | 1110019D14Rik | RIKEN cDNA 1110019D14 gene | −0.59607 |
| 76355         | Tgds        | TDP-glucose 4,6-dehydratase | −1.05112 |
| 76371         | 2810408B13Rik | RIKEN cDNA 2810408B13 gene | −1.45516 |
| 76419         | Smkr-ps     | small lysine rich protein 1, pseudogene | 1.365021 |
| 76510         | Trapp9      | trafficking protein particle complex 9 | 0.653014 |
| 76524         | Cln6        | ceroid-lipofuscinosis, neuronal 6 | 0.662862 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 76561         | Snx7        | sorting nexin 7 | -0.65032 |
| 76589         | Unc5cl      | unc-5 homolog C (C. elegans)-like | -1.04334 |
| 76611         | 1700071A11Rik | RIKEN cDNA 1700071A11 gene | -0.77159 |
| 76687         | Spcs3       | signal peptidase complex subunit 3 homolog (S. cerevisiae) | -0.67412 |
| 76794         | Man2c1os    | mannosidase, alpha, class 2C, member 1, opposite strand | -0.60488 |
| 76803         | 2410141K09Rik | RIKEN cDNA 2410141K09 gene | -0.79015 |
| 76820         | Fam49a      | family with sequence similarity 49, member A | -0.71369 |
| 76877         | Rarb36      | rhomboid domain containing 1 | -0.71947 |
| 76918         | 3110001N23Rik | RIKEN cDNA 3110001N23 gene | -0.74385 |
| 76936         | Hnrnpm      | heterogeneous nuclear ribonucleoprotein M | 0.601472 |
| 76954         | St5         | suppression of tumorigenicity 5 | 1.02554 |
| 77045         | Bcl7a       | B cell CLL/lymphoma 7A | -0.88996 |
| 77053         | Sun1        | Sad1 and UNC84 domain containing 1 | 0.847962 |
| 77056         | Tmc04       | transmembrane and coiled-coil domains 4 | 0.738709 |
| 77090         | Ocel1       | occludin/ELL domain containing 1 | 0.628336 |
| 77095         | D330022H12Rik | RIKEN cDNA D330022H12 gene | -0.72426 |
| 77113         | Kili2       | kelch-like 2, Mayven | -0.58965 |
| 77209         | 8030453O22Rik | RIKEN cDNA 8030453O22 gene | -0.63266 |
| 77252         | 9430038O1Rik | RIKEN cDNA 9430038O1 gene | 0.745099 |
| 77286         | Nkrf        | NF-kappaB repressing factor | -0.64765 |
| 77352         | Axnd1       | axonemal dynein light chain domain containing 1 | -1.11526 |
| 77447         | 9430096G21Rik | RIKEN cDNA 9430096G21 gene | -1.82291 |
| 77519         | Zfp266      | zinc finger protein 266 | -0.66095 |
| 77533         | C0300342I22Rik | RIKEN cDNA C0300342I22 gene | -0.80221 |
| 77579         | Myh10       | myosin, heavy polypeptide 10, non-muscle | -0.76395 |
| 77599         | 5830420C07Rik | RIKEN cDNA 5830420C07 gene | -0.74827 |
| 77665         | 9030204H09Rik | RIKEN cDNA 9030204H09 gene | 0.599592 |
| 77775         | A430103D13Rik | RIKEN cDNA A430103D13 gene | -0.80602 |
| 77789         | A930007D18Rik | RIKEN cDNA A930007D18 gene | -0.87584 |
| 77795         | A930010G16Rik | RIKEN cDNA A930010G16 gene | -1.07794 |
| 77864         | Ypel2       | yppee-like 2 (Drosophila) | -0.58792 |
| 77940         | A930004D18Rik | RIKEN cDNA A930004D18 gene | -1.0215 |
| 77941         | A930001M01Rik | RIKEN cDNA A930001M01 gene | -0.95297 |
| 77946         | A930026B05Rik | RIKEN cDNA A930026B05 gene | -0.7379 |
| 78045         | 4930564I24Rik | RIKEN cDNA 4930564I24 gene | -0.69919 |
| 78109         | Lrp8os1     | low density lipoprotein receptor-related protein 8, apolipoprotein e receptor, opposite strand 1 | 0.616691 |
| 78174         | Cox7b2      | cytochrome c oxidase subunit VIIb2 | -2.885 |
| 78257         | Lrcc        | leucine rich repeat containing 9 | -0.72909 |
| 78316         | Platr27     | pluriptotency associated transcript 27 | -1.16941 |
| 78353         | 2500002B13Rik | RIKEN cDNA 2500002B13 gene | -0.60411 |
| 78412         | 3110062M04Rik | RIKEN cDNA 3110062M04 gene | -1.16953 |
| 78416         | Rnase6      | ribonuclease, RNase A family, 6 | -1.22221 |
| 78428         | Wibg        | within bgcn homolog (Drosophila) | 0.672495 |
| 78438         | A930028N01Rik | RIKEN cDNA A930028N01 gene | 0.62632 |
| 78445         | C330013E15Rik | RIKEN cDNA C330013E15 gene | -1.96651 |
| 78454         | 9530077C14Rik | RIKEN cDNA 9530077C14 gene | -0.61383 |
| 78603         | B230216N24Rik | RIKEN cDNA B230216N24 gene | -1.03526 |
| 78610         | Uvrag       | UV radiation resistance associated gene | -0.62355 |
| 78619         | Zfp449      | zinc finger protein 449 | -0.72235 |
| 78668         | E130112N10Rik | RIKEN cDNA E130112N10 gene | -0.68212 |
| 78854         | Celf3       | CUGBP, Elav-like family member 3 | -0.63256 |
| 78823         | Desii       | desumoylating isopeptidase 2 | -0.5877 |
| 78829         | Tsc22d4     | TSC22 domain family, member 4 | 0.627395 |
| 78921         | 9130019O22Rik | RIKEN cDNA 9130019O22 gene | -0.74487 |
| 78926         | Gas211      | growth arrest-specific 2 like 1 | 0.767342 |
| 79362         | Bhilhe41     | basic helix-loop-helix family, member e41 | -1.14259 |
| 79459         | Aldoart2    | aldolase 1 A, retrogene 2 | 1.158981 |
Table 3 (continued)

| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 80509         | Med8        | mediator complex subunit 8 | −0.67295 |
| 80707         | Wwox        | WW domain-containing oxidoreductase | −0.64542 |
| 80743         | Vps16       | vacuolar protein sorting 16 (yeast) | −1.05958 |
| 80883         | Ntrn1       | netrin G1 | −0.98812 |
| 80890         | Trim2       | tripartite motif-containing 2 | −0.92197 |
| 80901         | Cxcr6       | chemokine (C-X-C motif) receptor 6 | −0.90825 |
| 80904         | Dtx3        | deltex 3 homolog (Drosophila) | 0.659925 |
| 81910         | Rrpb1       | ribosome binding protein 1 | 0.658042 |
| 83561         | Tdrd1       | tudor domain containing 1 | −1.55906 |
| 83669         | Wdr6        | WD repeat domain 6 | 0.836221 |
| 83672         | Sylt3       | synaptotagmin-like 3 | −0.87915 |
| 83675         | Bicc1       | bicaudal C homolog 1 (Drosophila) | −0.59427 |
| 83691         | Crispld1    | cysteine-rich secretory protein LCCL domain containing 1 | −1.71477 |
| 83885         | Slc25a2     | solute carrier family 25 (mitochondrial carrier, ornithine transporter) member 2 | −0.69483 |
| 84094         | Ptvap       | plasmalemma vesicle associated protein | 0.79435 |
| 84543         | Sval2       | seminal vesicle antigen-like 2 | −1.40835 |
| 85030         | Tnfrsf25    | tumor necrosis factor receptor superfamily, member 25 | −0.78213 |
| 93688         | Kihl1       | kelch-like 1 | −0.70661 |
| 93717         | Pcdhga9     | protocadherin gamma subfamily A, 9 | 0.656106 |
| 93761         | Smarca1     | SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 1 | −0.71967 |
| 93889         | Pcdhb18     | protocadherin beta 18 | −0.59971 |
| 94043         | Tm2d1       | TM2 domain containing 1 | −0.61284 |
| 94091         | Trim11      | tripartite motif-containing 11 | −0.70273 |
| 94109         | Csmd1       | CUB and Sushi multiple domains 1 | −1.29077 |
| 94184         | Pdxdc1      | pyridoxal-dependent decarboxylase domain containing 1 | 0.834688 |
| 94218         | Cnmm3       | cyclin M3 | 0.619263 |
| 94221         | Gopc        | golgi associated PDZ and coiled-coil motif containing | −0.72954 |
| 94253         | Hecw1       | HECT, C2 and WW domain containing E3 ubiquitin protein ligase 1 | −1.23232 |
| 97086         | Slc9b2      | solute carrier family 9, subfamily B (NHA2, cation proton antiporter 2), member 2 | −0.94933 |
| 97122         | Hist2h4     | histone cluster 2, H4 | 0.881916 |
| 97212         | Hadha       | hydroxyacyl-Coenzyme A dehydrogenase/3-ketoacyl-Coenzyme A thiolase (trifunctional protein), alpha subunit | 0.767457 |
| 97550         | C130081A10Rik | RIKEN cDNA C130081A10 gene | −0.80604 |
| 97775         | D930048N14Rik | RIKEN cDNA D930048N14 gene | −0.8934 |
| 97848         | Serpinb6c   | serine (or cysteine) peptidase inhibitor, clade B, member 6c | −0.82304 |
| 97874         | B430203J24Rik | RIKEN cDNA B430203J24 gene | −0.70653 |
| 97884         | B3galnt2    | UDP-GalNAc:betaGlcNAc beta 1,3-galactosaminyltransferase, polypeptide 2 | −0.79603 |
| 98303         | D630023F18Rik | RIKEN cDNA D630023F18 gene | −0.60981 |
| 98662         | AW061147    | expressed sequence AW061147 | −1.07209 |
| 98878         | Ehd4        | EH-domain containing 4 | −1.42552 |
| 99029         | Aif96198    | expressed sequence Aif96198 | −0.67529 |
| 99041         | Aif646519   | expressed sequence Aif646519 | −0.71972 |
| 99683         | Sec24b      | Sec24 related gene family, member B (S. cerevisiae) | −0.80383 |
| 99730         | Taf13       | TAF13 RNA polymerase II, TATA box binding protein (TBP)-associated factor | −0.68556 |
| 99889         | Arfip1      | ADP-ribosylation factor interacting protein 1 | −0.58876 |
| 99890         | Prmt6       | protein arginine N-methyltransferase 6 | −0.6627 |
| 100061        | Lrc19       | leucine rich repeat containing 19 | 0.862128 |
| 100072        | Camta1      | calmodulin binding transcription activator 1 | −0.67293 |
| 100088        | Rcc1        | regulator of chromosome condensation 1 | 0.761578 |
| 100177        | Zymym6      | zinc finger, MYM-type 6 | −0.65018 |
| 100317        | AU040320    | expressed sequence AU040320 | 0.786443 |
| 100465        | Mob3c       | MOB kinase activator 3C | −0.75174 |
| 100515        | Zfp518b     | zinc finger protein 518B | −0.85298 |
| 100535        | Oas1d       | 2′-5′ oligoadenylate synthetase 1D | −0.63228 |
## Table 3 (continued)

| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|----------------|-------------|-----------|--------|
| 100637         | N4bp2l1     | NEDD4 binding protein 2-like 1 | −0.87386 |
| 100710         | Pds5b       | PDS5, regulator of cohesion maintenance, homolog B (S. cerevisiae) | −0.6391 |
| 100740         | A1839979    | expressed sequence A1839979 | −0.79714 |
| 100710         | Pds5b       | PDS5, regulator of cohesion maintenance, homolog B (S. cerevisiae) | −0.62268 |
| 100740         | AI839979    | expressed sequence AI839979 | −0.79714 |
| 100910         | Chpf2       | chondroitin polymerizing factor 2 | −0.73774 |
| 101148         | B630005N14Rik | RIKEN cDNA B630005N14 gene | −0.66974 |
| 101835         | AW146154    | expressed sequence AW146154 | −0.59223 |
| 101923         | BB212172    | expressed sequence BB212172 | −0.59223 |
| 102436         | Lars2       | leucyl-tRNA synthetase, mitochondrial | 0.602089 |
| 102644         | Oaf         | OAF homolog (Drosophila) | −0.90462 |
| 102954         | Nudt10      | nudix (nucleoside diphosphate linked moiety X)-type motif 10 | −1.233 |
| 103067         | AA522020    | expressed sequence AA522020 | 0.785372 |
| 103080         | sep-10      | septin 10 | 0.710424 |
| 103098         | Slc6a15     | solute carrier family 6 (neurotransmitter transporter), member 15 | −1.42215 |
| 103161         | Apof        | apolipoprotein F | 3.593897 |
| 103466         | Nt5dc3      | 5’-nucleotidase domain containing 3 | −0.75275 |
| 103573         | Xpo1        | exportin 1, CRM1 homolog (yeast) | −0.81124 |
| 103817         | Al662501    | expressed sequence Al662501 | −0.75723 |
| 103841         | Cuedc1      | CUE domain containing 1 | 0.72041 |
| 103967         | Dnm3        | dynamin 3 | −0.87888 |
| 104307         | Rnu12       | RNA U12, small nuclear | −0.6048 |
| 104360         | Isl2        | insulin related protein 2 (islet 2) | −1.3989 |
| 104362         | Meig1       | meiosis expressed gene 1 | −1.5427 |
| 104383         | Rcor2       | REST corepressor 2 | −0.75159 |
| 104445         | Cdc42ep1    | CDC42 effector protein (Rho GTPase binding) 1 | −0.87179 |
| 105083         | Pelo        | pelota homolog (Drosophila) | −0.70256 |
| 105203         | Fam208b     | family with sequence similarity 208, member B | −0.87285 |
| 105245         | Tnncdc5     | thioredoxin domain containing 5 | −0.64907 |
| 105404         | BB123696    | expressed sequence BB123696 | −1.93535 |
| 105504         | Exoc5       | exocyst complex component 5 | −0.59824 |
| 105525         | A180461     | expressed sequence A180461 | −0.93626 |
| 106143         | Cggbp1      | CCG triplet repeat binding protein 1 | −0.64008 |
| 106258         | Al790442    | expressed sequence Al790442 | −1.17428 |
| 106459         | BB163080    | expressed sequence BB163080 | −1.07188 |
| 106529         | Tccr        | trans-2,3-enoyl-CoA reductase | 0.673678 |
| 106585         | Ankrd12     | ankyrin repeat domain 12 | −0.74893 |
| 107047         | Psmg2       | proteasome (prosome, macropain) assembly chaperone 2 | −1.54224 |
| 107777         | AW492981    | expressed sequence AW492981 | 0.886629 |
| 107775         | Lgr4        | leucine-rich-repeat-containing G protein-coupled receptor 4 | 0.729123 |
| 107528         | Magee1      | melanoma antigen, family E, 1 | −0.63916 |
| 107723         | Slc12a6     | solute carrier family 12, member 6 | 0.590395 |
| 107769         | Tm6sf1      | transmembrane 6 superfamily member 1 | −0.74232 |
| 108052         | Slc14a1     | solute carrier family 14 (urea transporter), member 1 | −1.05763 |
| 108151         | Sema3d      | sema domain, immunoglobulin domain (Ig), short basic domain, secreted, (semaphorin) 3D | −1.09708 |
| 108654         | Fam210a     | family with sequence similarity Z10, member A | −0.64689 |
| 108672         | Zdhhc15     | zinc finger, DHHC domain containing 15 | −0.61212 |
| 108978         | 4930555G01Rik | RIKEN cDNA 4930555G01 gene | −1.6494 |
| 108989         | Tpr         | translocated promoter region, nuclear basket protein | −0.64401 |
| 109054         | Pfdn4       | prefoldin 4 | −0.68448 |
| 109225         | Ms4a7       | membrane-spanning 4-domain, subfamily A, member 7 | −0.63855 |
| 109305         | Orai1       | ORAI calcium release-activated calcium modulator 1 | 0.667424 |
| 109674         | Ampd2       | adenosine monophosphate deaminase 2 | 0.681569 |
| 109754         | Cyb5r3      | cytochrome b5 reductase 3 | 0.703426 |
| 109978         | Art4        | ADP-ribosyltransferase 4 | −1.31941 |
| 110593         | Prdm2       | PR domain containing 2, with ZNF domain | −0.78139 |
| 110637         | Grik4       | glutamate receptor, ionotropic, kainate 4 | −1.21534 |
| 110794         | Cebpe       | CCAAT/enhancer binding protein (C/EBP), epsilon | −1.09945 |
| 114565         | Zbb2b1      | zinc finger and BTB domain containing 21 | −1.2948 |

*H. Proquin et al. / Data in Brief 16 (2018) 531–600*
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 114666        | Krtap5-5    | keratin associated protein 5-5 | 0.654529 |
| 116847        | Prelp       | proline arginine-rich end leucine-rich repeat | 0.678198 |
| 116914        | S1c19a2     | solute carrier family 19 (thiamine transporter), member 2 | -0.65563 |
| 117600        | Srgap1      | SLIT-ROBO Rho GTPase activating protein 1 | 0.635125 |
| 121021        | Csgp4       | chondroitin sulfate proteoglycan 4 | -0.93035 |
| 140580        | Elmo1       | engulfment and cell motility 1 | -0.99056 |
| 140780        | Bmp2k       | BMP2 inducible kinase | -0.80858 |
| 170624        | Dep1        | diabetic embryopathy 1 | -0.64353 |
| 170731        | Mfn2        | mitofusin 2 | 0.591107 |
| 170742        | Sertad3     | SERTA domain containing 3 | -0.62528 |
| 170755        | Sgk3        | serum/glucocorticoid regulated kinase 3 | -0.88688 |
| 170780        | Cd209e      | CD209e antigen | -1.70641 |
| 171273        | Vmn1r217    | vomeronasal 1 receptor 217 | 0.749356 |
| 171285        | Havcr2      | hepatitis A virus cellular receptor 2 | -1.23854 |
| 171469        | Gpr37l1     | G protein-coupled receptor 37-like 1 | 1.027729 |
| 171486        | Cd99l2      | CD99 antigen-like 2 | -0.63381 |
| 171580        | Mical1      | microtubule associated monoxygenase, calponin and LIM domain containing 1 | 1.057196 |
| 192167        | Ngn1        | neuregulin 1 | -1.85825 |
| 192174        | Rwdd4a      | RWD domain containing 4A | -0.82438 |
| 192194        | Btm10       | butyrophilin-like 10 | 0.830443 |
| 192285        | Phf21a      | PHD finger protein 21A | 0.721023 |
| 192656        | Ripk2       | receptor (TNFRSF)-interacting serine-threonine kinase 2 | -0.63475 |
| 192734        | Lrc75b      | leucine rich repeat containing 75B | -0.74641 |
| 193452        | Zfp184      | zinc finger protein 184 (Kruppel-like) | -0.80251 |
| 193742        | Abhd16a     | abhydrolase domain containing 16A | 0.633779 |
| 195712        | 4930421P07Rik | RIKEN cDNA 4930421P07 gene | -2.64623 |
| 207181        | Rbms3       | RNA binding motif, single stranded interacting protein | -0.66008 |
| 207740        | Ubald1      | UBA-like domain containing 1 | 0.617406 |
| 207911        | Mchr1       | melanin-concentrating hormone receptor 1 | -0.97182 |
| 208171        | Tnmpr7      | transmembrane serine protease 7 | -0.83198 |
| 208501        | 1810043H04Rik | RIKEN cDNA 1810043H04 gene | -1.11547 |
| 208595        | Mterf1b     | mitochondrial transcription termination factor 1b | -0.60592 |
| 208642        | Eif4g1      | eukaryotic translation initiation factor 4, gamma 1 | 0.845838 |
| 208820        | Triqk       | triple QxxK/R motif containing | -0.70984 |
| 208836        | Fanci       | Fanconi anemia, complementation group I | -0.99452 |
| 208898        | Unc13c      | unc-13 homolog C (C. elegans) | -0.72491 |
| 209032        | Zc3hav11    | zinc finger CCCH-type, antiviral 1-like | -0.84852 |
| 209601        | Erich3      | glutamate rich 3 | -1.20752 |
| 209707        | Lcorl       | ligand dependent nuclear receptor corepressor-like | -0.61257 |
| 210544        | Tbc1d31     | TBC1 domain family, member 31 | -0.74179 |
| 210573        | Tnem151b    | transmembrane protein 151B | -1.04789 |
| 210876        | Vmn2r111    | vomeronasal 2, receptor 111 | -0.62831 |
| 211228        | Lrc25       | leucine rich repeat containing 25 | -0.76391 |
| 211389        | Suox        | sulfite oxidase | -0.83785 |
| 211480        | Kcnj14      | potassium inwardly-rectifying channel, subfamily J, member 14 | -0.78113 |
| 211896        | Depc7       | DEP domain containing 7 | -1.05402 |
| 211922        | Dnmd6a      | DENN/MADD domain containing 6A | -0.61144 |
| 212326        | Fam149a     | family with sequence similarity 149, member A | -0.64819 |
| 212528        | Trmt1       | tRNA methyltransferase 1 | 0.663803 |
| 213068        | Tnem71      | transmembrane protein 71 | -1.39557 |
| 213119        | Itga10      | integrin, alpha 10 | -1.49396 |
| 213233        | Tabpbl      | TAP binding protein-like | 0.65139 |
| 213498        | Arhgef11    | Rho guanine nucleotide exchange factor (GEF) 11 | 0.694707 |
| 213499        | Fbxo42      | F-box protein 42 | -0.65575 |
| 214106        | 4933430I17Rik | RIKEN cDNA 4933430I17 gene | -0.90814 |
| 214162        | Kmt2a       | lysine (K)-specific methyltransferase 2A | 0.700823 |
| 214403        | Gm4788      | predicted gene 4788 | -2.03621 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 214547        | She         | src homology 2 domain-containing transforming protein E | −0.58549 |
| 214812        | Zfp609      | zinc finger protein 609 | 0.597878 |
| 215015        | Fam20b      | family with sequence similarity 20, member B | 0.901403 |
| 215090        | Maneal      | mannosidase, endo-alpha-like | −0.83128 |
| 215114        | Hsp1        | huntingtin interacting protein 1 | −0.81737 |
| 215627        | Zbtb8b      | zinc finger and BTB domain containing 8b | −1.71704 |
| 215690        | Nav1        | neuron navigator 1 | −0.82661 |
| 215748        | Cnkr3       | Cnkr family member 3 | −0.63952 |
| 216197        | Zbtb8b      | zinc finger and BTB domain containing 8b | −1.71704 |
| 216439        | Agap2       | ArfGAP with GTPase domain, ankyrin repeat and PH domain 2 | −1.55652 |
| 216835        | Usp43       | ubiquitin specific peptidase 43 | 1.193657 |
| 216869        | Arrb2       | arrestin, beta 2 | −0.61054 |
| 217262        | Abca9       | ATP-binding cassette, sub-family A (ABC1), member 9 | −0.61863 |
| 217305        | Cd300ld     | CD300 molecule-like family member d | −1.56884 |
| 217344        | Rhbd2       | rhomboid homolog 2 (Drosophila) | −0.6141 |
| 217356        | Tmce8       | transmembrane channel-like gene family 8 | 0.644216 |
| 217449        | Trppc12     | trafficking protein particle complex 12 | 0.770431 |
| 217692        | Sipa1l1     | signal-induced proliferation-associated 1 like 1 | −0.69194 |
| 217695        | Zfyve1      | zinc finger, FYVE domain containing 1 | 0.778389 |
| 217705        | Fam161b     | family with sequence similarity 161, member B | −0.68581 |
| 217826        | Kcnk13      | potassium channel, subfamily K, member 13 | −0.95761 |
| 218441        | Zfyve16     | zinc finger, FYVE domain containing 16 | −0.60524 |
| 218544        | Sglt        | small glutamine-rich tetratricopeptide repeat (TPR)-containing, beta | −0.66448 |
| 219131        | Phf11a      | PHD finger protein 11A | −0.94665 |
| 219150        | Hmbox1      | homeobox containing 1 | 0.826927 |
| 223601        | Fam49b      | family with sequence similarity 49, member B | −0.58852 |
| 223658        | Mroh1       | maestro heat-like repeat family member 1 | 0.59568 |
| 224023        | Khi22       | kelch-like 22 | 0.741641 |
| 224093        | Fam43a      | family with sequence similarity 43, member A | −1.07559 |
| 224273        | Crybg3      | beta-gamma crystallin domain containing 3 | −0.63046 |
| 224613        | Flywch1     | FLYWCH-type zinc finger 1 | 1.027128 |
| 224648        | Uhrf1bp1    | UHRF1 (ICBP90) binding protein 1 | −0.59813 |
| 224807        | Tmem63b     | transmembrane protein 63b | −0.63524 |
| 224912        | Crb3        | crumbs family member 3 | −0.68709 |
| 225004        | Bc027072    | cDNA sequence BC027072 | −0.7081 |
| 225160        | Thoc1       | THO complex 1 | −0.68774 |
| 225207        | Zfp521      | zinc finger protein 521 | −0.85601 |
| 225348        | Wdr36       | WD repeat domain 36 | −0.70459 |
| 225845        | Pla2g16     | phospholipase A2, group XVI | −0.86648 |
| 226098        | Hect2       | HECT domain containing 2 | −0.77252 |
| 226351        | Tmem185b    | transmembrane protein 185b | −0.74692 |
| 226562        | Prrc2c      | proline-rich coiled-coil 2C | −0.61813 |
| 226610        | Fam78b      | family with sequence similarity 78, member B | −0.70465 |
| 226652        | Arhgap30    | Rho GTPase activating protein 30 | −1.27679 |
| 226695        | Ifli205     | interferon activated gene 205 | −1.09742 |
| 226982        | Eif5b       | eukaryotic translation initiation factor 5B | −1.0119 |
| 227058        | Dnah7b      | dynein, axonemal, heavy chain 7B | −0.61933 |
| 227449        | Zchc2       | zinc finger, CCHC domain containing 2 | −0.60589 |
| 228012        | Tlk1        | toulased-like kinase 1 | 0.591133 |
| 228662        | Btrd3       | BTB (POZ) domain containing 3 | −1.32196 |
| 228852        | Ppp1r16b    | protein phosphatase 1, regulatory (inhibitor) subunit 16B | −1.17843 |
| 228880        | Zmynd8      | zinc finger, MYND-type containing 8 | 0.596695 |
| 229055        | Zbb10       | zinc finger and BTB domain containing 10 | −0.87408 |
| 229504        | Isg20l2     | interferon stimulated exonuclease gene 20-like 2 | −0.72018 |
| 229542        | Gata2b      | GATA zinc finger domain containing 2B | 0.732688 |
| 229663        | Cde1        | cold shock domain containing E1, RNA binding | −1.41927 |
| 229675        | Rsb1        | rosinb, round spermatid basic protein 1 | −0.6836 |
| 229694        | A1504432    | expressed sequence A1504432 | −1.37762 |
| 229714        | Gpr61       | G protein-coupled receptor 61 | −1.04805 |
Table 3 (continued)

| Entrez gene ID | Gene symbol | Gene name                                      | Log2FC     |
|----------------|-------------|-----------------------------------------------|------------|
| 229780         | Trmt13      | tRNA methyltransferase 13                     | −1.21023   |
| 230085         | N28178      | expressed sequence N28178                     | −0.68116   |
| 230594         | Zcchc11     | zinc finger, CCHC domain containing 11        | −0.72357   |
| 230796         | Wdtc1       | WD and tetratricopeptide repeats 1           | 0.647391   |
| 230861         | Eif4g3      | eukaryotic translation initiation factor 4 gamma, 3 | 0.814682   |
| 231151         | Tada2b      | transcriptional adaptor 2B                    | −0.587     |
| 231287         | Atp10d      | ATPase, class V, type 10D                     | −0.99158   |
| 231380         | Uba6        | ubiquitin-like modifier activating enzyme 6   | −0.67428   |
| 231506         | Lin54        | lin-54 homolog (C. elegans)                   | −0.59736   |
| 231805         | Pilra        | paired immunoglobulin-like type 2 receptor alpha | −0.96164   |
| 231868         | E130309D02Rik | RIKEN cDNA E130309D02 gene                  | −0.63021   |
| 231946         | Fam221a     | family with sequence similarity 221, member A  | −0.78758   |
| 232164         | Paip2b      | poly(A) binding protein interacting protein 2B | −0.75229   |
| 232341         | Wdtc1       | WD and tetratricopeptide repeats 1           | 0.647391   |
| 232413         | Clec12a     | C-type lectin domain family 12, member a      | −0.84477   |
| 232414         | Clec9a      | C-type lectin domain family 9, member a       | −1.05639   |
| 232449         | Dera        | 2-deoxyribose-5-phosphate aldolase homolog (C. elegans) | −0.6902   |
| 232879         | Zbtb45      | zinc finger and BTB domain containing 45      | 0.587431   |
| 232946         | Blocl5b3    | biogenesis of lysosomal organelles complex-1, subunit 3 | 0.6053   |
| 233046         | Rasgrp4     | RAS guanyl releasing protein 4                | −0.65095   |
| 233222         | Mggrpa3     | MAS-related GPR, member A3                    | −1.66076   |
| 233575         | Pgap2       | post-GPI attachment to proteins 2            | 0.66794    |
| 233670         | Olfr6       | olfactory receptor 6                         | 1.020888   |
| 233752         | Insc        | inscuteable homolog (Drosophila)             | −0.76245   |
| 233765         | Plekha7     | pleckstrin homology domain containing, family A member 7 | 0.791715 |
| 233802         | Thumpd1     | THUMP domain containing 1                     | −0.84648   |
| 233812         | BC030336    | cDNA sequence BC030336                       | −0.65796   |
| 233865         | D430042009Rik | RIKEN cDNA D430042009 gene               | 0.689748   |
| 234479         | Gm4890      | predicted gene 4890                          | −0.96266   |
| 234595         | Slc38a7     | solute carrier family 38, member 7           | 0.684613   |
| 234776         | Atmin       | ATM interactor                                | −0.59201   |
| 234852         | Chmp1a      | charged multisvesicular body protein 1A       | 0.675486   |
| 234889         | Gucy1a2     | guanylate cyclase 1, soluble, alpha 2         | −0.90142   |
| 234915         | Cep126      | centrosomal protein 12                       | −0.75877   |
| 235281         | Scn3b       | sodium channel, voltage-gated, type III, beta | −1.07314   |
| 235300         | Tnem136     | transmembrane protein 13                     | −0.97948   |
| 235497         | Leo1        | Leo1, Paf1 RNA polymerase II complex component, homolog (S. cerevisiae) | −1.20671   |
| 235504         | Slc17a5     | solute carrier family 17 (anion/sugar transporter), member 5 | 0.671279   |
| 235559         | Slc38a7     | solute carrier family 38, member 7           | 0.684613   |
| 235854         | Mtrgrpa4    | MAS-related GPR, member A4                    | 0.94099    |
| 236082         | Dhrsx       | dehydrogenase/reductase (SDR family) X chromosome | 0.724746   |
| 236727         | Slc9a7      | solute carrier family 9 (sodium/hydrogen exchanger), member 7 | −1.61799 |
| 237029         | 4932411N23Rik | RIKEN cDNA 4932411N23 gene                 | −1.70119   |
| 237400         | Mex3d       | mex3 homolog D (C. elegans)                   | −0.74985   |
| 237433         | Gm4925      | predicted gene 4925                          | −0.75051   |
| 237859         | Cccd55      | coiled-coil domain containing 55             | −0.6461    |
| 237928         | Phospho1    | phosphatase, orphan 1                        | 0.959223   |
| 238023         | Hexdc       | hexosaminidase (glycosyl hydrolase family 20, catalytic domain) containing | 0.587653   |
| 238276         | Akap5       | A kinase (PKA) anchor protein 5              | −0.73582   |
| 238323         | Rps6k11     | ribosomal protein S6 kinase-like 1           | −0.68172   |
| 239157         | Pnma2       | paraneoplastic antigen MA2                   | −0.7546    |
| 239217         | Kctd12      | potassium channel tetramerisation domain containing 12 | −0.66721 |
| 239393         | Lrp12       | low density lipoprotein-related protein 12   | −0.91013   |
| 239559         | A4gal      | alpha 1,4-galactosyltransferase              | −0.61236   |
| 239796         | Mb21d2      | Mb-21 domain containing 2                    | −0.63591   |
| 240063         | Zfp811      | zinc finger protein 81                       | −0.8079    |
| 240120         | Zfp119b     | zinc finger protein 11b                      | −0.75377   |
| Entrez gene ID | Gene symbol | Gene name                                                                 | Log2FC |
|---------------|-------------|---------------------------------------------------------------------------|--------|
| 240215        | Slc4a9      | solute carrier family 4, sodium bicarbonate cotransporter, member 9       | 0.724738 |
| 240261        | Ccdc112     | coiled-coil domain containing 112                                         | −0.81534 |
| 240427        | Setbp1      | SET binding protein 1                                                     | −0.82105 |
| 240614        | Ranbp6      | RAN binding protein 6                                                     | −0.78465 |
| 240665        | Ccnj        | cyclin J                                                                  | −0.83635 |
| 240667        | Sec31b      | Sec31 homolog B (S. cerevisiae)                                           | 0.725795 |
| 241062        | Pgap1       | post-GPI attachment to proteins                                          | −0.61956 |
| 241230        | St8sia6     | ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase 6              | −1.15413 |
| 241289        | Ppp1r26     | protein phosphatase 1, regulatory subunit 26                             | −0.5953 |
| 241568        | Lrc4c       | leucine rich repeat containing 4C                                         | −0.92716 |
| 241950        | Bbs12       | Bardet-Biedl syndrome 12 (human)                                         | −0.63846 |
| 242384        | Manea       | mannosidase, endo-alpha                                                  | −0.64504 |
| 242834        | Wdr78       | WD repeat domain 78                                                      | −0.78936 |
| 243212        | Uroc1       | urocane domain containing 1                                               | −1.23138 |
| 243574        | Kbtbd8      | kelch repeat and BTB (POZ) domain containing 8                           | −1.35829 |
| 243621        | Igasec3     | IQ motif and Sec7 domain 3                                               | −1.30989 |
| 243655        | Tkre1       | killer cell lectin-like receptor family E member 1                       | −1.48959 |
| 244878        | E330009J07Rik| RIKEN cDNA E330009J07 gene                                               | 0.61948 |
| 244891        | Scaper      | S phase cyclin A-associated protein in the ER                            | 0.61481 |
| 244958        | Mtap2       | melanocortin 2 receptor accessory protein 2                              | −1.04743 |
| 245350        | A441476     | expressed sequence A441476                                              | −0.74258 |
| 245572        | Tbx22       | T-box 2                                                                  | −2.36944 |
| 245622        | Fam199x     | family with sequence similarity 199, X-linked                           | −0.72958 |
| 245670        | Rbgb        | Ras-related GTP binding B                                                | −0.71673 |
| 246102        | Rtn         | rotatin                                                                  | −0.74096 |
| 246104        | Rbhd13      | rhomboid, veinlet-like 3 (Drosophila)                                    | −0.7166 |
| 246177        | Myo1g       | myosin IG                                                                | −1.24641 |
| 257633        | Acsf3       | acyl-CoA synthetase family member 3                                       | 0.597114 |
| 258042        | Olfr487     | olfactory receptor 487                                                   | 1.442597 |
| 258097        | Olfr1500    | olfactory receptor 1500                                                  | −2.17059 |
| 258180        | Olfr699     | olfactory receptor 699                                                   | −1.80076 |
| 258269        | Olfr930     | olfactory receptor 930                                                   | 0.81376 |
| 258272        | Olfr1402    | olfactory receptor 1402                                                  | 0.81345 |
| 258285        | Olfr122     | olfactory receptor 122                                                   | 1.095957 |
| 258375        | Olfr794     | olfactory receptor 794                                                  | 0.719334 |
| 258499        | Olfr945     | olfactory receptor 945                                                  | 0.927516 |
| 258584        | Olfr1101    | olfactory receptor 1101                                                  | −0.96051 |
| 258663        | Olfr1153    | olfactory receptor 1153                                                  | −0.87716 |
| 258662        | Olfr738     | olfactory receptor 738                                                  | −0.70938 |
| 258810        | Olfr665     | olfactory receptor 665                                                  | −1.43003 |
| 258825        | Olfr975     | olfactory receptor 975                                                  | 0.863193 |
| 258877        | Olfr1395    | olfactory receptor 1395                                                 | 0.985627 |
| 258992        | Olfr1494    | olfactory receptor 1494                                                  | 1.798832 |
| 259057        | Olfr649     | olfactory receptor 649                                                  | 0.843841 |
| 260298        | Fev         | FEV (ETS oncogene family)                                                | 0.587319 |
| 263764        | Creg2       | cellular repressor of E1A-stimulated genes 2                             | −0.94823 |
| 264895        | Acfs2       | acyl-CoA synthetase family member 2                                       | 1.406468 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 266459        | Gm5039      | eukaryotic translation initiation factor 1A pseudogene | -5.11673 |
| 268294        | Zbtb24      | zinc finger and BTB domain containing 24 | -0.75203 |
| 268354        | Fam19a2     | family with sequence similarity 19, member A2 | -1.3155 |
| 268470        | Ube2z       | ubiquitin-conjugating enzyme EZZ (putative) | -0.90113 |
| 268564        | Zbtb1       | zinc finger and BTB domain containing 1 | -0.78751 |
| 268595        | D430019H16Rik | RIKEN cDNA D430019H16 gene | -0.84558 |
| 269019        | Stk32a      | serine/threonine kinase 32A | -0.81441 |
| 269023        | Zip608      | zinc finger protein 608 | 0.70976 |
| 269033        | 4930503L19Rik | RIKEN cDNA 4930503L19 gene | -1.10804 |
| 269060        | Dagla       | diacylglycerol lipase, alpha | -1.07842 |
| 269113        | Nup54       | nucleoporin 54 | -0.60862 |
| 269132        | Colgalt2    | collagen beta(1-O)galactosyltransferase 2 | -0.69347 |
| 269378        | Acy         | S-adenosylhomocysteine hydrolase | 0.706816 |
| 269397        | Ss18l1      | synovial sarcoma translocation gene on chromosome 18-like 1 | -0.65773 |
| 269585        | Zscan20     | zinc finger and SCAN domains 20 | -0.84188 |
| 269682        | Golga3      | golgi autoantigen, golgin subfamily a, 3 | -0.62261 |
| 269713        | Clip2       | CAP-GLY domain containing linker protein 2 | 0.717882 |
| 269941        | Chsy1       | chondroitin sulfate synthase 1 | -0.67983 |
| 270160        | Rab39       | RAB39, member RAS oncogene family | -1.25899 |
| 270163        | Myo9a       | myosin IXa | 0.747452 |
| 270190        | Ephb1       | Eph receptor B1 | -0.82718 |
| 270624        | Spin4       | spindlin family, member 4 | -0.70933 |
| 272350        | Gm5065      | predicted gene 5065 | 0.957372 |
| 272589        | Tbc1        | tubulin folding cofactor E-like | 0.604728 |
| 276891        | Timd4       | T cell immunoglobulin and mucin domain containing 4 | -1.14558 |
| 277333        | Gm5069      | glyceraldehyde-3-phosphate dehydrogenase pseudogene | 0.59056 |
| 277343        | Wfdc8       | WAP four-disulfide core domain 8 | 0.615777 |
| 277360        | Prex1       | phosphatidylinositol-3,4,5-trisphosphate-dependent Rac exchange factor 1 | -0.76644 |
| 277854        | Depdc5      | DEP domain containing 5 | -0.68308 |
| 278240        | Spin2c      | spindlin family, member 2C | -0.73623 |
| 286942        | Kif19a      | kinesis family member 19A | 0.613557 |
| 286968        | 6530437J22Rik | RIKEN cDNA 6530437J22 gene | -1.11696 |
| 319148        | Hist1h3c    | histone cluster 1, H3c | 1.163395 |
| 319154        | Hist2h3b    | histone cluster 2, H3b | 0.879899 |
| 319160        | Hist1h4k    | histone cluster 1, H4k | 0.714299 |
| 319166        | Hist1h2ae   | histone cluster 1, H2ae | -1.25142 |
| 319200        | Gpr82       | G protein-coupled receptor 82 | -0.104336 |
| 319208        | 4930403D09Rik | RIKEN cDNA 4930403D09 gene | -2.04353 |
| 319272        | A130077B15Rik | RIKEN cDNA A130077B15 gene | 0.734046 |
| 319278        | A230050P20Rik | RIKEN cDNA A230050P20 gene | 0.766542 |
| 319357        | C503043A13Rik | RIKEN cDNA C503043A13 gene | 1.216349 |
| 319460        | A130094D17Rik | RIKEN cDNA A130094D17 gene | -0.62704 |
| 319463        | C230057M02Rik | RIKEN cDNA C230057M02 gene | 0.740153 |
| 319481        | Wdr59       | WD repeat domain 59 | -0.68606 |
| 319504        | Nrcam       | neuronal cell adhesion molecule | -0.72373 |
| 319552        | B230216G23Rik | RIKEN cDNA B230216G23 gene | -0.61414 |
| 319615        | Zifp944     | zinc finger protein 944 | -0.59127 |
| 319670        | Eml5        | echinoderm microtubule associated protein like 5 | -0.72942 |
| 319678        | D430040D24Rik | RIKEN cDNA D430040D24 gene | -1.015 |
| 319688        | 5930422012Rik | RIKEN cDNA 5930422012 gene | -1.16225 |
| 319719        | Simc1       | SUMO-interacting motifs containing 1 | -0.7732 |
| 319760        | D1300020L5Rik | RIKEN cDNA D1300020L5 gene | -0.60442 |
| 319782        | A730021G18Rik | RIKEN cDNA A730021G18 gene | -0.68427 |
| 319798        | A730090N16Rik | RIKEN cDNA A730090N16 gene | 1.795917 |
| 319818        | A930011G23Rik | RIKEN cDNA A930011G23 gene | -1.46833 |
| 319839        | A530020G20Rik | RIKEN cDNA A530020G20 gene | 0.875643 |
| 319888        | Oacyl       | O-acyltransferase like | 1.01763 |
| 319924        | Apba1       | amyloid beta (A4) precursor protein binding, family A, member 1 | -0.69613 |
| 319982        | 5930430L01Rik | RIKEN cDNA 5930430L01 gene | -0.66615 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC       |
|---------------|-------------|-----------|--------------|
| 320057        | A630057N01Rik | RIKEN cDNA A630057N01 gene | 0.96067      |
| 320060        | B230308N11Rik | RIKEN cDNA B230308N11 gene | −0.96382     |
| 320108        | 1110019B24Rik | RIKEN cDNA 1110019B24 gene | −1.69477     |
| 320148        | B430306N03Rik | RIKEN cDNA B430306N03 gene | −1.46054     |
| 320214        | Maats1       | MYCBP-associated, testis expressed 1 | −1.11355     |
| 320238        | A830054O07Rik | RIKEN cDNA A830054O07 gene | −0.67304     |
| 320244        | Ttll5        | tubulin tyrosine ligase-like family, member 5 | 0.585645     |
| 320265        | Fam19a1      | family with sequence similarity 19, member A1 | −0.74359     |
| 320279        | G330007K24Rik | RIKEN cDNA G330007K24 gene | −0.65845     |
| 320383        | B230317F23Rik | RIKEN cDNA B230317F23 gene | −0.86395     |
| 320384        | B230334L07Rik | RIKEN cDNA B230334L07 gene | −0.63226     |
| 320387        | D930030O05Rik | RIKEN cDNA D930030O05 gene | −0.67588     |
| 320404        | Itpkb        | inositol 1,4,5-trisphosphate 3-kinase B | 0.620676     |
| 320586        | A630089N07Rik | RIKEN cDNA A630089N07 gene | −0.86049     |
| 320587        | Tmem88b      | transmembrane protein 88B | −0.68374     |
| 320616        | B130006D01Rik | RIKEN cDNA B130006D01 gene | −0.97238     |
| 320621        | D830044D21Rik | RIKEN cDNA D830044D21 gene | −0.85512     |
| 320642        | Maats1       | MYCBP-associated, testis expressed 1 | −0.74359     |
| 320654        | E330024J20Rik | RIKEN cDNA E330024J20 gene | −0.85272     |
| 320664        | Cass4        | Cas scaffold protein family member 4 | −0.60979     |
| 320692        | 9430037G07Rik | RIKEN cDNA 9430037G07 gene | −0.73744     |
| 320705        | Bend6        | BEN domain containing 6 | −1.38104     |
| 320714        | Trappc11     | trafficking protein particle complex 11 | −0.73732     |
| 320770        | A630072M18Rik | RIKEN cDNA A630072M18 gene | −1.0799      |
| 320790        | Chd7         | chromodomain helicase DNA binding protein 7 | 0.67632      |
| 320800        | 9230112E08Rik | RIKEN cDNA 9230112E08 gene | −0.73619     |
| 320812        | C330020E22Rik | RIKEN cDNA C330020E22 gene | −0.7223      |
| 320854        | C330007K24Rik | RIKEN cDNA C330007K24 gene | −0.85020     |
| 320865        | E430014B02Rik | RIKEN cDNA E430014B02 gene | −2.05688     |
| 320890        | A330021B02Rik | RIKEN cDNA A330021B02 gene | −1.38104     |
| 320907        | Serac1       | serine active site containing 1 | −0.73732     |
| 320951        | Gm5079       | predicted gene 5079 | 0.597094     |
| 320959        | 4831410D14   | uncharacterized protein 4831410D14 | −1.00182     |
| 320961        | Scimp        | SLP adaptor and CSK interacting membrane protein | −1.41472     |
| 320998        | Spata32      | spermatogenesis associated 32 | 0.623855     |
| 321007        | Ep300        | E1A binding protein p300 | −1.15464     |
| 321008        | 4930515115   | uncharacterized protein 4930515115 | −0.96089     |
| 321009        | Gm5093       | predicted gene 5093 | −1.61191     |
| 321010        | Treml2       | triggering receptor expressed on myeloid cells-like 2 | −1.44539     |
| 321077        | Zfp532       | zinc finger protein 532 | −1.09148     |
| 321079        | Unc80        | unc-80 homolog (C. elegans) | −1.00593     |
| 321080        | Ppp1r12b     | protein phosphatase 1, regulatory (inhibitor) subunit 12B | 0.615869     |
| 321090        | 1810024B03Rik | RIKEN cDNA 1810024B03 gene | −0.75417     |
| 321091        | Med12l       | mediator complex subunit 12-like | −0.58692     |
| 321092        | Fam102b      | family with sequence similarity 102, member B | −0.75147     |
| 321101        | Zfp284       | zinc finger protein 284 | −0.97161     |
| 321103        | Dock1        | dedicator of cytokinesis 1 | 0.598972     |
| 321104        | Gcl2c        | GC-rich sequence DNA binding factor 2 | −0.91483     |
| 321105        | Zip78        | zinc finger protein 78 | −0.72744     |
| 321106        | Scl7a6       | solute carrier family 7 (cationic amino acid transporter, y+ system), member 6 | −0.85828     |
| 321107        | Rgag4        | retrotransposon gag domain containing 4 | −0.88012     |
| 321108        | Tceil5       | transcription elongation factor A (SII)-like 5 | −0.85451     |
| 321109        | Tigd3        | tigger transposable element derived 3 | −1.07907     |
Table 3 (continued)

| Entrez gene ID | Gene symbol | Gene name                                                | Log2FC  |
|----------------|-------------|----------------------------------------------------------|---------|
| 333605         | Frmpd4      | FERM and PDZ domain containing 4                         | −2.05022|
| 338362         | Ust         | uronyl-2-sulfotransferase                                | −1.31467|
| 338364         | Trim65      | tripartite motif-containing 65                          | −0.91679|
| 338366         | Mia3        | melanoma inhibitory activity 3                          | 0.705735|
| 347712         | Pamel7      | preferentially expressed antigen in melanoma like 7      | −1.98677|
| 353237         | Pcdha2c     | protocadherin alpha subfamily C, 2                      | −0.70372|
| 368203         | Gm5136      | predicted gene 5136                                     | −0.87734|
| 380839         | Serpinb1c   | serine (or cysteine) peptidase inhibitor, clade B, member 1c | −1.39057|
| 380842         | Stmnd1      | stathmin domain containing 1                             | −0.98107|
| 380855         | Rsl1        | regulator of sex limited protein 1                       | −0.74806|
| 380928         | Lmo7        | LIM domain only 7                                        | 0.645333|
| 380977         | A330009N23Rik| RIKEN cDNA A330009N23 gene                               | −0.66633|
| 381022         | Kmt2d       | lysine (K)-specific methyltransferase 2D                 | −0.71231|
| 381066         | Zfp948      | zinc finger protein 948                                  | −0.92967|
| 381280         | Hjrup       | Holliday junction recognition protein                    | 0.792372|
| 381350         | Spag6l      | sperm associated antigen 6 like                          | 1.198639|
| 381413         | Gpr176      | G protein-coupled receptor 176                          | −1.61273|
| 381418         | Ctxn2       | cortexin 2                                               | −1.244   |
| 381560         | Xkr8        | X Kell blood group precursor related family member 8 homolog | −0.61954|
| 381633         | Gm1673      | predicted gene 1673                                     | −0.6134  |
| 381792         | 2310040G24Rik| RIKEN cDNA 2310040G24 gene                              | −0.647277|
| 381813         | Apol1d      | apolipoprotein L domain containing 1                     | −0.96821|
| 381891         | Taok2       | TAO kinase 2                                             | 0.631535|
| 381970         | Scgb2b2     | secretoglobulin, family 2B, member 2                     | −0.85366|
| 381994         | E030018B13Rik| RIKEN cDNA E030018B13 gene                              | −1.638   |
| 382111         | Susd5       | sushi domain containing 5                                | −0.97382|
| 382275         | Gm5168      | predicted gene 5168                                     | −1.0048  |
| 382301         | Sly         | Sycp3 like Y-linked                                      | −0.98228|
| 382543         | Ankn1       | ankyrin-repeat and fibronectin type III domain containing 1 | −2.29511|
| 382620         | Tmed8       | transmembrane emp24 domain containing 8                  | −0.65559|
| 384783         | Irs2        | insulin receptor substrate 2                            | 0.794769|
| 386655         | Eid2        | EP300 interacting inhibitor of differentiation 2         | −0.79541|
| 387514         | Tas2r143    | taste receptor, type 2, member 143                       | 1.177925|
| 399633         | A630014C17Rik| RIKEN cDNA A630014C17 gene                              | −1.6978  |
| 399635         | D230044B12Rik| RIKEN cDNA D230044B12 gene                              | −0.77295|
| 405649         | A130008B04Rik| RIKEN cDNA A130008B04 gene                              | −1.00647|
| 407737         | A130014A01Rik| RIKEN cDNA A130014A01 gene                              | −0.72303|
| 407753         | D630033A02Rik| RIKEN cDNA D630033A02 gene                              | −1.14091|
| 407771         | C130090J23Rik| RIKEN cDNA C130090J23 gene                              | −0.79038|
| 407800         | Ecm2        | extracellular matrix protein 2, female organ and adipocyte specific | −0.74802|
| 407824         | BC020402    | cDNA sequence BC020402                                  | −0.59659|
| 408058         | BC048507    | cDNA sequence BC048507                                  | −1.34383|
| 408067         | Zfp874b     | zinc finger protein 874                                  | −0.58904|
| 414072         | BC031361    | cDNA sequence BC031361                                  | −0.80441|
| 432488         | Gm17745     | predicted gene, 17745                                   | −1.00647|
| 432596         | LOC432596   | uncharacterized LOC432596                               | −0.6342  |
| 432637         | Gm5433      | predicted gene 5433                                     | 0.8515  |
| 432769         | Zfp708      | zinc finger protein 708                                  | −0.8239  |
| 432842         | LOC432842   | uncharacterized LOC432842                               | 0.876499|
| 433022         | Plcxd2      | phosphatidylinositol-specific phospholipase C, X domain containing 2 | −0.86822|
| 433424         | Zeb2os      | zinc finger E-box binding homeobox 2, opposite strand    | −0.69187|
| 433791         | Gm13251     | predicted gene 13251                                    | −0.77061|
| 433801         | Gm13212     | predicted gene 13212                                    | −1.10183|
| 433804         | Gm13154     | predicted gene 13154                                    | −0.84184|
| 433882         | Gm16223     | predicted gene 16223                                    | −1.98454|
| 433931         | Pigg        | phosphatidylinositol glycan anchor biosynthesis, class G | −1.58977|
| 433956         | Dnaa15      | dynein, axonemal, assembly factor 5                      | −0.76322|
| 434156         | Eid2b       | EP300 interacting inhibitor of differentiation 2B        | −0.96003|
| Entrez gene ID | Gene symbol | Gene name                                                                 | Log2FC  |
|---------------|-------------|---------------------------------------------------------------------------|---------|
| 434172        | Gm5592      | predicted gene 5592                                                       | −1.67145|
| 434198        | B130024G19Rik | RIKEN cDNA B130024G19 gene                                                 | −0.84788|
| 434232        | Iqck        | IQ motif containing K                                                      | −0.81566|
| 434246        | Trim72      | tripartite motif-containing 72                                             | 0.634362|
| 434249        | Gm5602      | predicted gene 5602                                                       | −0.70145|
| 434377        | Zfp560      | zinc finger protein 560                                                    | −0.95233|
| 434778        | Ccdc160     | coiled-coil domain containing 160                                          | −1.05991|
| 434797        | Gm5640      | predicted gene 5640                                                       | 0.670032|
| 435350        | Serpinb6e   | serine (or cysteine) peptidase inhibitor, clade B, member 6e              | −1.58783|
| 435366        | Plat25      | pluripotency associated transcript 25                                     | −0.85272|
| 436336        | Gm5767      | predicted gene 5767                                                       | −1.04922|
| 442834        | D830031N03Rik | RIKEN cDNA D830031N03 gene                                                | −0.80254|
| 454448        | Chx6        | chromobox 6                                                               | −0.59216|
| 454848        | Gm5784      | predicted gene 5784                                                       | −1.14614|
| 454997        | Gm5796      | predicted gene 5796                                                       | −0.62013|
| 455056        | Gm5801      | ubiquitin-conjugating enzyme E2, J2 homolog pseudogene                    | −0.89454|
| 455389        | Cep170      | centrosomal protein 170                                                   | −0.61291|
| 455471        | Zfp345      | zinc finger protein 345                                                   | −1.6032  |
| 455486        | Tubb1       | tubulin, beta 1 class VI                                                  | −0.7624  |
| 455554        | Ankr34a     | ankyrin repeat domain 34A                                                 | −0.98216|
| 455787        | Gm5858      | predicted gene 5858                                                       | −1.53946|
| 457103        | Gm10674     | predicted gene 10674                                                      | −1.3482  |
| 457160        | Gm14484     | predicted gene 1448                                                       | −0.59693|
| 458102        | LOC548102   | uncharacterized LOC548102                                                  | −0.76902|
| 458632        | BC023719    | cDNA sequence BC023719                                                   | −1.17744|
| 552875        | AU015680    | expressed sequence AU015680                                              | −1.26137|
| 619307        | 9430078G10Rik | RIKEN cDNA 9430078G10 gene                                               | −1.8657  |
| 621893        | Hist2h2ab   | histone cluster 2, H2ab                                                   | −1.00183|
| 622208        | Gm6297      | predicted gene 6297                                                       | −0.89178|
| 622320        | Kctd21      | potassium channel tetramerisation domain containing 21                   | −1.15251|
| 622976        | Gm6377      | predicted gene 6377                                                       | −1.04066|
| 623169        | Gm6402      | ribosomal protein S17 pseudogene                                          | −0.70094|
| 623796        | Gm12504     | prothymosin alpha pseudogene                                              | −2.11846|
| 624367        | Gm6498      | glyceraldehyde-3-phosphate dehydrogenase pseudogene                      | 0.617721|
| 625210        | Gm14625     | predicted gene 14625                                                      | −0.69256|
| 625421        | C23006216Rik | RIKEN cDNA C23006216 gene                                                 | −0.91903|
| 626305        | Sgcb1b7     | secretotoglobin, family 1B, member 7                                      | −2.18039|
| 626316        | Gm13051     | predicted gene 13051                                                      | −1.28385|
| 626359        | Wdr93       | WD repeat domain 93                                                       | −0.95622|
| 626854        | Gm38396     | predicted gene, 38396                                                     | −0.60015|
| 628586        | Gm6899      | predicted gene 6899                                                       | −0.65898|
| 628709        | Gm10324     | predicted gene 10324                                                      | −1.25029|
| 629159        | 1700008J07Rik | RIKEN cDNA 1700008J07 gene                                              | 0.768984|
| 631624        | Gm7072      | predicted gene 7072                                                       | −0.71905|
| 632971        | Rerg1       | RERG/RAS-like                                                             | −1.64316|
| 633057        | Gm7102      | predicted gene 7102                                                       | 0.701429|
| 633385        | Gm7111      | predicted gene 7111                                                       | −0.68942|
| 635253        | Usp51       | ubiquitin specific protease 51                                             | −0.91216|
| 639910        | Gm20767     | predicted gene, 20767                                                     | −1.15522|
| 640543        | Tgm7        | transglutaminase 7                                                        | 1.020278|
| 654493        | 8030494802Rik | RIKEN cDNA 8030494802 gene                                            | −0.66953|
| 654498        | Hbla1       | HERV-H LTR-associating 1                                                   | −0.76889|
| 655629        | Slix        | Sycp3 like X-linked                                                       | −0.87022|
| 656553        | Mthfd2l     | methylenetetrahydrofolate dehydrogenase (NADP+ dependent) 2-like         | −0.6698 |
| 666266        | Gm8013      | predicted gene 8013                                                       | −2.04279|
| 666938        | Bend4       | BEN domain containing 4                                                   | −0.79001|
| 667034        | Pnp2        | purine-nucleoside phosphorylase 2                                         | −1.24516|
| 667250        | Gm12657     | predicted gene 12657                                                     | −0.71457|
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 667281        | H60b        | histocompatibility 60b | -1.22405 |
| 667705        | Gm8773      | predicted gene 8773   | -0.81139 |
| 667766        | Gm8801      | protein phosphatase 1, regulatory subunit 10 pseudogene | 0.595183 |
| 668620        | Zip936      | zinc finger protein 936 | -0.80565 |
| 668917        | Zfp133-ps    | zinc finger protein 133, pseudogene | -1.04998 |
| 670496        | Gm11564     | predicted gene 11564  | 1.00542 |
| 676894        | Gm9694      | predicted gene 9694   | -0.73028 |
| 790913        | Gm11413     | predicted gene 11413  | -0.7987 |
| 791282        | Gm10030     | predicted gene 10030  | 1.757404 |
| 791415        | Gm12500     | predicted gene 12500  | -0.70641 |
| 100033459     | Pydc3       | pyrin domain containing 3 | -2.01435 |
| 100038369     | F630201L12Rik | RIKEN cDNA F630201L12 gene | -2.2877 |
| 100038410     | Gm10536     | predicted gene 10536  | -1.96018 |
| 100038620     | Gm10631     | predicted gene 10631  | -0.73957 |
| 100039065     | Gm10071     | predicted gene 10071  | -1.5075 |
| 100039227     | Duxbl2      | double homeobox B-like 2 | -1.47201 |
| 100039801     | Cldn24      | claudin 24           | -0.99105 |
| 100040044     | Gm2568      | predicted gene 2568   | -1.66025 |
| 100040416     | Gm10071     | predicted gene 10071  | -1.5075 |
| 100040462     | Mndal       | myeloid nuclear differentiation antigen like | -1.42012 |
| 100040724     | Mirg        | miRNA containing gene | -0.8375 |
| 100040834     | Gm2990      | predicted gene 2990   | -1.29896 |
| 100041420     | Gm10030     | predicted gene 10030  | -0.91069 |
| 100041677     | Gm3902      | predicted gene 3902   | -0.69562 |
| 100042679     | Gm16523     | mitochondrial ribosomal protein L40 pseudogene | -0.60524 |
| 100042769     | Gm16386     | zinc finger protein 496 pseudogene | -0.79701 |
| 100042922     | Gm14483     | predicted gene 14483  | -0.75136 |
| 100042945     | Gm4120      | predicted gene 4120   | 0.612395 |
| 100043160     | Gm10012     | cytochrome c oxidase, subunit VIIc pseudogene | 0.957175 |
| 100043247     | Gm4312      | predicted gene 4312   | -0.97492 |
| 100043320     | Gm4340      | predicted gene 4340   | -2.72647 |
| 100043431     | Gm4430      | predicted gene 4430   | -0.81773 |
| 100043636     | A1662270    | expressed sequence A1662270 | -1.18371 |
| 100043836     | Sco2b27    | secretoglobin, family 2B, member 7 | -0.83891 |
| 100044236     | Copg2os2    | coatomer protein complex, subunit gamma 2, opposite strand 2 | -1.70879 |
| 100048897     | 473141909Rik | RIKEN cDNA 473141909 gene | -1.2436 |
| 100049172     | Gm10428     | predicted gene 10428  | -1.42319 |
| 100101046     | D230018H15Rik | RIKEN cDNA D230018H15 gene | -1.10653 |
| 100113398     | Adat3       | adenosine deaminase, tRNA-specific 3 | -0.66756 |
| 100126202     | 9630029G12Rik | RIKEN cDNA 9630029G12 gene | -1.2251 |
| 100126243     | A030001D20Rik | RIKEN cDNA A030001D20 gene | -0.72168 |
| 100126624     | Sco2        | SCO cytochrome oxidase deficient homolog 2 (yeast) | 0.730268 |
| 100233208     | Gm10778     | predicted gene 10778  | -1.04693 |
| 100303730     | Gm16163     | predicted gene 16163  | 0.754236 |
| 100303733     | Gm10501     | predicted gene 10501  | -0.61927 |
| 100303744     | Sprt2a2     | small proline-rich protein 2A2 | -0.6182 |
| 100322896     | Dthd1       | death domain containing 1 | -0.72563 |
| 100415902     | Gm15658     | predicted gene 15658  | -1.21315 |
| 100415915     | A530072M11Rik | RIKEN cDNA gene A530072M11 | -0.78401 |
| 100502742     | 1700007L15Rik | RIKEN cDNA 1700007L15 gene | -0.62689 |
| 100502764     | Gm16617     | predicted gene, 16617  | 0.825367 |
| 100502849     | Gm19412     | predicted gene, 19412  | -0.7524 |
| 100502936     | E330021D16Rik | RIKEN cDNA E330021D16 gene | -0.73087 |
| 100502987     | Gm17066     | predicted gene 17066  | -0.71086 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 100503021     | Gm19510     | predicted gene, 19510 | -1.34725 |
| 100503043     | Armcx4      | armadillo repeat containing, X-linked 4 | -0.84865 |
| 100503120     | A930006K02Rik | RIKEN cDNA A930006K02 gene | -0.72241 |
| 100503185     | Btd8        | BTB (POZ) domain containing 8 | 1.038025 |
| 100503199     | 5430416N02Rik | RIKEN cDNA 5430416N02 gene | 1.098121 |
| 100503388     | Gm19668     | predicted gene, 19668 | 0.908692 |
| 100503460     | Gm19705     | predicted gene, 19705 | -0.7856 |
| 100503463     | AI256396    | EST AI256396 | -1.21866 |
| 100503498     | Gm16675     | predicted gene, 16675 | -1.39464 |
| 100503823     | 4833432E10Rik | RIKEN cDNA 4833432E10 gene | -1.08814 |
| 100504104     | Gm16062     | predicted gene 16062 | -0.76218 |
| 100504166     | 4933421010Rik | RIKEN cDNA 4933421010 gene | -0.95235 |
| 100504404     | H2-Ea-ps    | histocompatibility 2, class II antigen E alpha, pseudogene | -1.14313 |
| 100504464     | E230016K23Rik | RIKEN cDNA E230016K23 gene | -0.67684 |
| 100504591     | Gm15987     | predicted gene 15987 | -1.23069 |
| 100856880     | Gm30103     | predicted gene, 30103 | 0.877683 |
| 100861738     | LOC100861738 | elongation factor 2 pseudogene | 0.619881 |
| 100862431     | LOC100862431 | H-2 class I histocompatibility antigen, D-D alpha chain-like | 0.708989 |
| 101669761     | Gm15694     | NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 7 (B14.5a), pseudogene | -1.02486 |
| 102631881     | Gm30103     | predicted gene, 30103 | 0.877683 |
| 102632087     | Gm13373     | predicted gene 13373 | -1.30443 |
| 102632135     | Gm30289     | predicted gene, 30289 | -0.65816 |
| 102632597     | Gm28523     | predicted gene 28523 | -0.6761 |
| 102632673     | Gm15245     | predicted gene 15245 | 0.644342 |
| 102632812     | Gm30789     | predicted gene 30789 | -0.87706 |
| 102632821     | LOC102632821 | 60S acidic ribosomal protein P1-like | -0.70121 |
| 102632874     | Gm30836     | predicted gene, 30836 | -1.53279 |
| 102632891     | Gm30848     | predicted gene, 30848 | -1.38562 |
| 102632920     | Gm30871     | predicted gene, 30871 | 1.309055 |
| 102633823     | Gm31555     | predicted gene, 31555 | -1.93747 |
| 102633880     | LOC102633880 | uncharacterized LOC102633880 | -1.36204 |
| 102634174     | Gm16104     | predicted gene 16104 | -1.15519 |
| 102634215     | Gm31854     | predicted gene, 31854 | -1.40301 |
| 102634376     | Gm32178     | predicted gene 32178 | -1.27918 |
| 102634692     | Gm32219     | predicted gene, 32219 | -1.03775 |
| 102634871     | Gm32352     | predicted gene, 32352 | -0.99188 |
| 102634922     | Gm32391     | predicted gene, 32391 | 0.638654 |
| 102635502     | LOC102635502 | uncharacterized LOC102635502 | -1.64675 |
| 102635572     | Gm34800     | predicted gene, 34800 | -0.68344 |
| 102635880     | Gm33104     | predicted gene, 33104 | -0.7505 |
| 102635880     | Gm33104     | predicted gene, 33104 | -0.7505 |
| 102635880     | Gm33104     | predicted gene, 33104 | -0.7505 |
| 102636154     | Gm16124     | predicted gene 16124 | -0.72439 |
| 102636349     | LOC102636349 | uncharacterized LOC102636349 | -0.70182 |
| 102636466     | Gm33509     | predicted gene, 33509 | -1.64891 |
| 102636562     | Gm33594     | predicted gene, 33594 | -1.85551 |
| 102636745     | Gm33733     | predicted gene, 33733 | -1.34025 |
| 102637088     | Gm33990     | predicted gene, 33990 | -0.68622 |
| 102637299     | Gm32714     | predicted gene, 32714 | -0.74842 |
| 102637409     | LOC102637409 | uncharacterized LOC102637409 | -0.81874 |
| 102637572     | Gm38499     | predicted gene, 38499 | 0.594527 |
| 102637643     | Gm34403     | predicted gene, 34403 | -1.11966 |
| 102638002     | LOC102638002 | uncharacterized LOC102638002 | -0.63567 |
| 102638420     | Gm34991     | predicted gene, 34991 | 0.775052 |
| 102638434     | Gm16537     | predicted gene 16537 | -0.97958 |
| 102638621     | Gm35144     | predicted gene, 35144 | -0.76214 |
| 102638626     | Gm35147     | predicted gene, 35147 | 0.605229 |
| 102638696     | Gm26919     | predicted gene, 26919 | -1.88055 |
| 102638737     | Gm35229     | predicted gene, 35229 | -0.95739 |
### Table 3 (continued)

| Entrez gene ID | Gene symbol | Gene name | Log2FC  |
|---------------|-------------|-----------|---------|
| 102638849     | Gm15764     | predicted gene 15764 | −0.68516 |
| 102639189     | Gm35555     | predicted gene, 35555 | 0.888405 |
| 102639309     | Gm35650     | predicted gene, 35650 | 0.851693 |
| 102639375     | Gm29514     | predicted gene 29514 | −0.74413 |
| 102639385     | LOC102639385 | uncharacterized LOC102639385 | −1.05062 |
| 102639474     | Gm35778     | predicted gene, 35778 | 0.936449 |
| 102639711     | Gm35959     | predicted gene, 35959 | −0.74889 |
| 102639730     | Gm35973     | predicted gene, 35973 | −0.78258 |
| 102639982     | LOC102639982 | uncharacterized LOC102639982 | −1.16036 |
| 102640359     | LOC102640359 | zinc finger protein 431-like | −0.95231 |
| 102641119     | LOC102641119 | uncharacterized LOC102641119 | 0.676153 |
| 102641241     | LOC102641241 | predicted gene, 431-like | −1.25749 |
| 102641621     | LOC102641621 | uncharacterized LOC102641621 | −1.61991 |
| 102642140     | LOC102642140 | uncharacterized LOC102642140 | 1.087788 |
| 102643243     | LOC102643243 | uncharacterized LOC102643243 | −0.79132 |
| 102643711     | LOC102643711 | uncharacterized LOC102643711 | −1.66616 |
| 102644530     | LOC102644530 | uncharacterized LOC102644530 | −0.73536 |
| 102644624     | Gm12708     | predicted gene 12708 | −1.36084 |
| 102645474     | Gm40923     | predicted gene, 40923 | −2.48661 |
| 102646049     | Gm41408     | predicted gene, 41408 | −0.70345 |

### Table 4

Differentially expressed genes (DEG) in the colon of mice after 21 days of exposure to E171.

| Entrez gene ID | Gene symbol | Gene name | Log2FC  |
|---------------|-------------|-----------|---------|
| 11421         | Ace         | angiotensin I converting enzyme (peptidyl-dipeptidase A) 1 | 0.651285 |
| 12291         | Cacna1g     | calcium channel, voltage-dependent, T type, alpha 1G subunit | −1.09989 |
| 12307         | Calb1       | calbindin 1 | 1.282643 |
| 12575         | Cdkn1a      | cyclin-dependent kinase inhibitor 1A (p21) | 0.818227 |
| 12843         | Coll1a2     | collagen, type 1, alpha 2 | −0.85437 |
| 13367         | Diap1       | diaphanous homolog 1 (Drosophila) | 0.744955 |
| 13653         | Egr1        | early growth response 1 | −1.11944 |
| 13806         | Eno1        | enolase 1, alpha non-neuron | 0.670466 |
| 14048         | Eya1        | eyes absent 1 homolog (Drosophila) | 0.627279 |
| 14229         | Fkbp5       | FK506 binding protein 5 | 0.888654 |
| 14238         | Foxf2       | forhead box F2 | −0.78798 |
| 14464         | Gata5       | GATA binding protein 5 | 0.680614 |
| 14755         | Pigg        | phosphatidylinositol glycan anchor biosynthesis, class Q | 0.59899 |
| 15551         | Htr1b       | 5-hydroxytryptamine (serotonin) receptor 1B | −0.89351 |
| 15945         | Cxcl10      | chemokine (C-X-C motif) ligand 10 | −1.61387 |
| 16728         | L1cam       | L1 cell adhesion molecule | 0.605456 |
| 16835         | Ldlr        | low density lipoprotein receptor | 0.687404 |
| 16846         | Lep         | leptin | 0.653292 |
| 17116         | Mab211I     | mab-21-like 1 (C. elegans) | −1.48895 |
| 17254         | Slc3a2      | solute carrier family 3 (activators of dibasic and neutral amino acid transport), member 2 | 0.747147 |
| 17472         | Gbp4        | guanylate binding protein 4 | −0.96939 |
| 17524         | Mpp1        | membrane protein, palmitoylated | 0.637775 |
| 18227         | Nr4a2       | nuclear receptor subfamily 4, group A, member 2 | −0.82788 |
| 18345         | Olf1r46     | olfactory receptor 46 | 1.302175 |
| 18439         | P2rx7       | purinergic receptor P2X, ligand-gated ion channel, 7 | −0.77769 |
| 19326         | Rab11b      | RAB11B, member RAS oncogene family | 0.599463 |
| 19387         | Ragap1      | RAN GTPase activating protein 1 | 0.658889 |
| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 20301         | Ccl27a      | chemokine (C-C motif) ligand 27A | −0.59555 |
| 20430         | Cypf1       | cytoplasmic FMR1 interacting protein 1 | 0.838053 |
| 20678         | Sox5        | SRY (sex determining region Y)-box 5 | −1.04235 |
| 20779         | Src         | Rous sarcoma oncogene | 0.585707 |
| 20917         | Sucg2       | succinate-Coenzyme A ligase, GDP-forming, beta subunit | 0.662674 |
| 21379         | Tbrg4       | transforming growth factor beta regulated gene 4 | 0.748918 |
| 21624         | Thbd        | thrombomodulin | −0.64834 |
| 22123         | Psmd3       | proteasome (prosome, macropain) 26S subunit, non-ATPase, 3 | 0.638915 |
| 22228         | Ucp2        | uncoupling protein 2 (mitochondrial, proton carrier) | 0.595733 |
| 22229         | Ucp3        | uncoupling protein 3 (mitochondrial, proton carrier) | 0.598441 |
| 22750         | Zfp9        | zinc finger protein 9 | −0.64348 |
| 26372         | Clcn6       | chloride channel 6 | −0.58875 |
| 27386         | Npas3       | neuronal PAS domain protein 3 | 0.834607 |
| 30874         | C74788      | EST C74788 | 0.835609 |
| 50768         | Dlc1        | deleted in liver cancer 1 | −0.588 |
| 52234         | D7Ertd183e  | DNA segment, Chr 7, ERATO Doi 183, expressed | 0.640063 |
| 52679         | E2f7        | E2F transcription factor 7 | 0.638337 |
| 54396         | Irgm2       | immunity-related GTPase family M member 2 | −1.0829 |
| 55981         | Pdgf        | phosphatidylinositol glycan anchor biosynthesis, class B | 0.662836 |
| 56492         | Cldn18      | claudin 18 | 0.770857 |
| 57269         | Olfr1507    | olfactory receptor 1507 | 0.696378 |
| 57385         | Pt2ry4      | pyrimidinergic receptor P2Y, G-protein coupled, 4 | 1.273995 |
| 60406         | Sap30       | sin3 associated polypeptide | −0.6006 |
| 60530         | Fignl1      | fidgetin-like 1 | −0.64374 |
| 63859         | Imgp1       | interphotoreceptor matrix proteoglycan 1 | 0.813132 |
| 63953         | Dusp10      | dual specificity phosphatase 10 | −0.76496 |
| 64008         | Aqp9        | aquaporin 9 | −0.97315 |
| 64705         | D pys       | dihydropyrimidinase | −1.84623 |
| 66547         | 2010203P06Rik | RIKEN cDNA 2010203P06 gene | −0.9194 |
| 66610         | Ab13        | ABI gene family, member 3 | 0.698279 |
| 66709         | 4921507G05Rik | RIKEN cDNA 4921507G05 gene | 0.634214 |
| 66829         | Lrc75aos2   | leucine rich repeat containing 75A, opposite strand 2 | 1.102741 |
| 66933         | 1700025L06Rik | RIKEN cDNA 1700025L06 gene | 0.692497 |
| 67266         | Fam169a     | family with sequence similarity 69, member A | −0.63671 |
| 67637         | 4930470P17Rik | RIKEN cDNA 4930470P17 gene | −1.59037 |
| 67690         | Pss37       | protease, serine 37 | 0.902707 |
| 68201         | Cdc34       | cdc34 domain containing 34 | −0.59813 |
| 68228         | 1700095K22Rik | RIKEN cDNA 1700095K22 gene | −0.87726 |
| 69065         | Chac1       | ChAc, cation transport regulator 1 | −1.55648 |
| 69080         | Gmpa        | GDP-mannose pyrophosphorylase A | 0.595097 |
| 69473         | Efcab9      | EF-hand calcium binding domain 9 | −0.75115 |
| 69473         | Krtap3-1    | keratin associated protein 3-1 | −2.66099 |
| 69748         | Aldh16a1    | aldehyde dehydrogenase 16 family, member A1 | 0.586275 |
| 69909         | 2610027K06Rik | RIKEN cDNA 2610027K06 gene | −0.73013 |
| 70230         | 3300002P13Rik | RIKEN cDNA 3300002P13 gene | 0.701897 |
| 70417         | Megf10      | multiple EGF-like-domains 10 | −0.71301 |
| 70831         | Krtap3-1    | keratin associated protein 3-1 | 0.675628 |
| 70847         | 4733401D01Rik | RIKEN cDNA 4733401D01 gene | 1.290688 |
| 70960         | 4921531P14Rik | RIKEN cDNA 4921531P14 gene | 0.7037 |
| 71021         | 4933403J19Rik | RIKEN cDNA 4933403J19 gene | −1.21723 |
| 71386         | Krtap28-13  | keratin associated protein 28-13 | −1.3675 |
| 71854         | Dpep3       | dipetidase 3 | −2.03434 |
| 71950         | Nanog       | Nanog homeobox | 0.968158 |
| 71995         | Erv3        | endogenous retroviral sequence 3 | 0.625712 |
| 72893         | 2900040C04Rik | RIKEN cDNA 2900040C04 gene | 0.870901 |
| 72901         | 2900011F02Rik | RIKEN cDNA 2900011F02 gene | 0.599728 |
| 73062         | Ppp1r16a    | protein phosphatase 1, regulatory (inhibitor) subunit 16A | 0.65124 |
| 73299         | 1700041G16Rik | RIKEN cDNA 1700041G16 gene | −0.95323 |
| 73336         | Prss44      | protease, serine 44 | 0.800819 |
| 73432         | 1700061N14Rik | RIKEN cDNA 1700061N14 gene | 0.731943 |
| 73456         | Izumo1      | izumo sperm-egg fusion 1 | 3.442362 |
Table 4 (continued)

| Entrez gene ID | Gene symbol | Gene name                                                   | Log2FC   |
|---------------|-------------|-------------------------------------------------------------|----------|
| 73696         | Platr9      | pluripotency associated transcript 9                       | −0.79652 |
| 74488         | Lrsc15      | leucine rich repeat containing 15                          | −3.15789 |
| 74646         | Spsb1       | spIAryanodine receptor domain and SOCS box containing 1     | 0.662786 |
| 74970         | 4930483O08Rik | RIKEN cDNA 4930483O08 gene                                | 0.976605 |
| 75085         | 4930519L02Rik | RIKEN cDNA 4930519L02 gene                               | 0.629165 |
| 75120         | 4930509E22Rik | RIKEN cDNA 4930509E22 gene                               | 0.9049   |
| 75288         | Slic354      | solute carrier family 35, member F4                        | 0.588767 |
| 77038         | Arfgap2     | ADP-ribosylation factor GTPase activating protein 2         | 0.650269 |
| 77056         | Tmco4       | transmembrane and coiled-coil domains 4                    | 0.649722 |
| 77397         | 9530003J23Rik | RIKEN cDNA 9530003J23 gene                               | 1.085436 |
| 77940         | A930004D18Rik | RIKEN cDNA A930004D18 gene                               | −0.91426 |
| 78082         | 9230117E06Rik | RIKEN cDNA 9230117E06 gene                               | −0.84715 |
| 78279         | 5330421C15Rik | RIKEN cDNA 5330421C15 gene                               | −0.94753 |
| 78782         | 5830426C09Rik | RIKEN cDNA 5830426C09 gene                               | 0.699759 |
| 78926         | Gas2l1      | growth arrest-specific 2 like 1                           | 0.892931 |
| 81897         | Tfr9        | toll-like receptor 9                                      | 0.614653 |
| 83454         | Nxf2        | nuclear RNA export factor 2                                | −0.92136 |
| 94184         | Pdxdc1      | pyridoxal-dependent decarboxylase domain containing 1      | 0.630685 |
| 97402         | C86187      | expressed sequence C86187                                 | −0.93102 |
| 100061        | Lrsc19      | leucine rich repeat containing 19                          | 0.822892 |
| 100155        | A481877     | expressed sequence A481877                                | 0.586151 |
| 102975        | AU015621    | expressed sequence AU015621                               | 1.12915 |
| 103203        | A413759     | expressed sequence A413759                                | −1.1418 |
| 103266        | Tmm263      | transmembrane protein 263                                 | −1.18364 |
| 105596        | AU020094    | expressed sequence AU020094                               | 0.622001 |
| 107515        | Lgr4        | leucine-rich repeat-containing G protein-coupled receptor 4 | 0.644103 |
| 107971        | Frs3        | fibroblast growth factor receptor substrate 3              | 0.690578 |
| 171190        | Vmn1r26     | vomeonalasal 1 receptor 26                                 | −1.51356 |
| 171195        | Vmn1r30     | vomeonalasal 1 receptor 30                                 | 0.604116 |
| 193796        | Kdm4b       | lysine (K)-specific demethylase 4B                          | 0.592358 |
| 194655        | Klfl1       | Kruppel-like factor 11                                     | −1.01785 |
| 208836        | Fanci       | Fanconi anemia, complementation group 1                     | 0.778423 |
| 212528        | Trmt1       | tRNA methyltransferase 1                                   | 0.78916  |
| 213248        | Wdr49       | WD repeat domain 49                                        | 2.155048 |
| 213945        | Col28a1     | collagen, type XXVIII, alpha 1                              | −0.65825 |
| 214547        | She         | src homology 2 domain-containing transforming protein E     | −0.63251 |
| 223658        | Mroh1       | maestro heat-like repeat family member 1                    | 0.749083 |
| 224613        | Flywch1     | FLYWCH-type zinc finger 1                                  | 0.597535 |
| 228770        | Rsop4       | R-spondin family, member 4                                | 0.743283 |
| 228775        | Trib3       | tribbles homolog 3 (Drosophila)                            | −0.8793 |
| 232813        | Shisa7      | shisa family member 7                                     | 1.21652 |
| 233549        | Mogat2      | monoyglyceral 0-acyltransferase 2                           | −1.13785 |
| 233865        | D430042009Rik | RIKEN cDNA D430042009 gene                             | 0.619914 |
| 235674        | Aca1b       | acetyl-Coenzyme A acyltransferase 1B                        | 0.695209 |
| 237625        | Pla2g3      | phospholipase A2, group III                                | −1.41112 |
| 241656        | Pak7        | p21 protein (Cdc42/Rac)-activated kinase 7                 | 0.733928 |
| 241764        | L3mbt1      | l[3]mbt-like (Drosophila)                                  | −0.67467 |
| 242915        | Gareml      | GRB2 associated, regulator of MAPK1-like                   | −0.95775 |
| 246779        | Il27        | interleukin 27                                             | 0.620833 |
| 258064        | Olf1316     | olfactory receptor 31                                      | 0.697396 |
| 258199        | Olf1300-ps1 | olfactory receptor 1300, pseudogene 1                      | 1.45359  |
| 258238        | Olf417      | olfactory receptor 417                                    | −0.99523 |
| 258267        | Olf370      | olfactory receptor 370                                    | −1.87677 |
| 258269        | Olf930      | olfactory receptor 930                                    | 0.851372 |
| 258358        | Olf557      | olfactory receptor 557                                    | 2.218149 |
| 258543        | Olf810      | olfactory receptor 810                                    | −1.7235 |
| 258701        | Olf401      | olfactory receptor 401                                    | 1.156804 |
| 258882        | Olf874      | olfactory receptor 874                                    | −1.30081 |
| 259114        | Olf570      | olfactory receptor 570                                    | 1.00058  |
| 259145        | Olf1251     | olfactory receptor 125                                    | 0.777263 |
| 266614        | Ly6g5b      | lymphocyte antigen 6 complex, locus G5B                    | 0.614901 |
Table 4 (continued)

| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|----------------|-------------|-----------|--------|
| 268510 | Mgat5b | mannoside acetylglucosaminyltransferase 5, isoenzyme B | 0.931575 |
| 269604 | Gpr157 | G protein-coupled receptor 157 | 0.984748 |
| 270150 | Ccdc153 | coiled-coil domain containing 153 | 0.606825 |
| 319634 | Efca5b | EF-hand calcium binding domain 5 | -0.81654 |
| 319720 | Gpr157 | G protein-coupled receptor 157 | 0.984748 |
| 319805 | Ccdc153 | coiled-coil domain containing 153 | 0.606825 |
| 319941 | Col8a2 | collagen, type VIII, alpha 2 | -0.84984 |
| 320178 | Efcab5 | EF-hand calcium binding domain 5 | -0.81654 |
| 320309 | 9630028I04Rik | RIKEN cDNA 9630028I04 gene | 0.712617 |
| 320471 | 4921529L05Rik | RIKEN cDNA 4921529L05 gene | 1.076061 |
| 320616 | 1520401A03Rik | RIKEN cDNA 1520401A03 gene | 0.809069 |
| 320869 | Spata33 | spermatogenesis associated 33 | -1.03489 |
| 329253 | Gm15850 | predicted gene 15850 | 1.413351 |
| 329941 | C130073E24Rik | RIKEN cDNA C130073E24 gene | -1.44124 |
| 330552 | Gm9801 | predicted gene 9801 | 0.596646 |
| 333669 | Gm5134 | predicted gene 5134 | 1.732013 |
| 334241 | Gm5434 | ubiquitin-conjugating enzyme E2F (putative) pseudogene | 0.676471 |
| 335111 | F630040K05Rik | RIKEN cDNA F630040K05 gene | 0.590534 |
| 335286 | Krtap9-5 | keratin associated protein 9-5 | -0.92046 |
| 337454 | Zeb2os | zinc finger E-box binding homeobox 2, opposite strand | -0.64512 |
| 339425 | Hbq1b | hemoglobin, theta 1B | -0.7882 |
| 343421 | Zeb2os | zinc finger E-box binding homeobox 2, opposite strand | -0.64512 |
| 344285 | B014433 | expressed sequence B014433 | 0.599378 |
| 346369 | Rho3h | reproductive homeobox 3H | 0.738632 |
| 347582 | Krtap9-5 | keratin associated protein 9-5 | -0.87046 |
| 348050 | F630040K05Rik | RIKEN cDNA F630040K05 gene | 0.590534 |
| 348216 | F830005K03Rik | RIKEN cDNA F830005K03 gene | 1.366128 |
| 344763 | Hbq1b | hemoglobin, theta 1B | -0.7882 |
| 344821 | H2afb2 | H2A histone family, member B2 | -0.95194 |
| 347367 | Vmn2r97 | vomeronasal 2, receptor 97 | 0.650603 |
| 348175 | Wildc10 | WAP four-disulfide core domain 10 | 0.719878 |
| 349171 | Rergl | RERG/RAS-like | -1.22717 |
| 349171 | Rergl | RERG/RAS-like | -1.22717 |
| 351350 | GM15850 | predicted gene 15850 | 1.413351 |
| 360792 | Gm10461 | predicted gene 10461 | 1.157742 |
| 362976 | Gm16754 | predicted gene 16754 | -1.13793 |
| 363104 | Gm10584 | predicted gene 10584 | -0.69025 |
| 363410 | Gm11747 | predicted gene 11747 | 0.86802 |
| 1E+08 | A730020M07Rik | RIKEN cDNA A730020M07 gene | 0.869668 |
| 1E+08 | Gm12279 | predicted gene 12279 | -1.10091 |
| 1E+08 | Gm19665 | predicted gene 19665 | 1.157742 |
| 1E+08 | Gm16754 | predicted gene 16754 | -1.13793 |
| 1E+08 | Gm19937 | predicted gene 19937 | -0.8815 |
| 1E+08 | Krtap16-1 | keratin associated protein 16-1 | -0.75551 |
| 1E+08 | Gm20257 | caspase 8 pseudogene | -0.59324 |
| 1E+08 | Gm11454 | predicted gene 11454 | 0.626209 |
2. Experimental design, materials and methods

2.1. Mouse model

Thirty-two BALB/c mice (16 males, 16 females) of 4–6 weeks old (Harlan Laboratories, Mexico) underwent exposure to E171 exposure after ethical approval from the Comité de Ética de la Facultad de Estudios Superiores Iztacala de la Universidad Nacional Autónoma de México under the number: FESI-ICY-I151. They were housed in polycarbonate cages and kept in a housing room (12 h light/dark cycles, 50–60% relative humidity, air filtered until 5 µm particles and exchanged 18 times/h, and 21 °C). After one week of acclimation, the mice were randomly divided in 2 groups: the control group (8 males, 8 females) was exposed by gavage to sonicated sterile water (30 min 60 Hz), and the exposure group (8 males, 8 females) was exposed to 5 mg/kg bw/day of sonicated sterile E171 (30 min 60 Hz). Four mice (2 males, 2 females) were sacrificed in a humid chamber with sevoflurane after 2, 7, 14 and 21 days. Colons were collected and put overnight at 4 °C in a tube containing RNAlater® (Thermo-fisher, The Netherlands). Next day the remaining RNAlater® was discarded. The colons were stored at −80 °C until RNA isolation. Transportation of the samples for 2 days in dry ice at −80 °C has been done by a specialised shipping company to the Department of Toxicogenomics, Maastricht University, Maastricht, the Netherlands. The shipping company monitored the temperature of the samples throughout the shipping process with a thermometer to ensure stable freezing conditions and optimal sample quality. Immediately upon arrival the samples have been put at −80 °C.

2.2. RNA isolation

Total RNA was isolated from the distal part of colon. Colons were first submerged in Qiazol (Qiagen, The Netherlands) and subsequently disrupted and homogenized using a Mini Bead Beater (BioSpec Products, The Netherlands) (48 beats/s for 30 s). miRNeasy Mini Kit was used for RNA isolation (Qiagen, The Netherlands) including a DNase treatment, according to the manufacturer’s protocol [4]. RNA concentrations were measured using a Nanodrop® spectrophotometer (Thermo-fischer, The Netherlands) and the integrity of total RNA was determined on a Bioanalyzer (Agilent Technologies, The Netherlands). RNA Integrity Number (RIN) higher than 6 was compulsory for each sample to be used for microarray analysis. It was the case for all samples with an average of 8.8 ± 0.7.

Table 4 (continued)

| Entrez gene ID | Gene symbol | Gene name | Log2FC |
|---------------|-------------|-----------|--------|
| 1.01E+08      | Gm14569     | predicted gene 14569 | −0.75401 |
| 1.03E+08      | Gm14642     | predicted gene 14642 | 0.908442 |
| 1.03E+08      | 4930512M02Rik | RIKEN cDNA 4930512M02 gene | 0.942116 |
| 1.03E+08      | Gm13373     | predicted gene 13373 | −0.7068 |
| 1.03E+08      | Gm26564     | predicted gene, 26564 | 1.535484 |
| 1.03E+08      | Gm31805     | predicted gene, 31805 | 0.765069 |
| 1.03E+08      | Gm31854     | predicted gene, 31854 | −1.09139 |
| 1.03E+08      | Gm32296     | predicted gene, 32296 | 0.789333 |
| 1.03E+08      | LOC102634852 | uncharacterized LOC102634852 | −1.03989 |
| 1.03E+08      | Gm32391     | predicted gene, 32391 | 0.722814 |
| 1.03E+08      | Gm32575     | predicted gene, 32575 | 1.215592 |
| 1.03E+08      | Gm33452     | predicted gene, 33452 | −0.85761 |
| 1.03E+08      | LOC102636367 | uncharacterized LOC102636367 | 0.813995 |
| 1.03E+08      | Gm38488     | predicted gene, 38488 | 0.814931 |
| 1.03E+08      | Gm28209     | predicted gene 28209 | 0.681508 |
| 1.03E+08      | Gm34336     | predicted gene, 34336 | −2.90205 |
| 1.03E+08      | Gm15569     | predicted gene, 15569 | 0.723968 |
| 1.05E+08      | Gm38999     | predicted gene, 38999 | 0.641604 |
| 1.05E+08      | Gm39216     | predicted gene, 39216 | 0.628011 |
Table 5
Group of pathways, pathways, genes related to this pathways and log2FC values after 2 days of exposure to E171 in BALB/c mice. Numbers in bold are upregulated genes. Log2FC = Log2 fold change obtained with LIMMA script with correction for its own time-matched control.

| Group of pathways | Pathways          | EntrezGeneID | Genes         | Log2FC  |
|-------------------|-------------------|--------------|---------------|---------|
| Signalling        | Odorant GPCRs     | 258926       | Olfr476       | −1.66123|
|                   |                   | 14764        | Ptgdr2        | −1.13784|
|                   |                   | 113849       | Vmn1r52       | −1.06252|
|                   |                   | 171469       | Gpr3711       | −1.00965|
|                   |                   | 233230       | Mrgrpbr4      | −0.99996|
|                   |                   | 237716       | Gpr75         | 0.60654 |
|                   |                   | 269604       | Gpr157        | 0.910932|
|                   | Olfactory transduction | 56544       | Vmn2r1        | 1.00315 |
|                   |                   | 258069       | Olfr787       | −0.88202|
|                   |                   | 258224       | Olfr1358      | −0.84454|
|                   |                   | 258285       | Olfr122       | −1.24794|
|                   |                   | 258290       | Olfr1143      | −0.71628|
|                   |                   | 383243       | Olfr128       | −0.81569|
|                   |                   | 258366       | Olfr434       | −0.73813|
|                   |                   | 258375       | Olfr794       | −0.85019|
|                   |                   | 258507       | Olfr96        | −0.87258|
|                   |                   | 258589       | Olfr703       | −0.66525|
|                   |                   | 258590       | Olfr702       | −1.59164|
|                   |                   | 258577       | Olfr76        | −0.91511|
|                   |                   | 258716       | Olfr424       | −1.59652|
|                   |                   | 258750       | Olfr551       | −0.60955|
|                   |                   | 258825       | Olfr975       | −0.91639|
|                   |                   | 258877       | Olfr1395      | −0.93299|
|                   |                   | 259006       | Olfr399       | −1.18    |
|                   |                   | 259021       | Olfr1054      | −0.93971|
|                   |                   | 117005       | Olfr74        | −1.04523|
|                   |                   | 257888       | Olfr1386      | −1.78702|
|                   |                   | 18331        | Olfr32        | −0.96808|
|                   |                   | 57271        | Olfr1509      | −0.71953|
|                   | Olfactory Signalling Pathway | 257888       | Olfr1386      | −1.78702|
|                   |                   | 258716       | Olfr424       | −1.59652|
|                   |                   | 117005       | Olfr74        | −1.04523|
|                   |                   | 18331        | Olfr32        | −0.96808|
|                   |                   | 259021       | Olfr1054      | −0.93971|
|                   |                   | 258677       | Olfr76        | −0.91511|
|                   |                   | 258507       | Olfr96        | −0.87258|
|                   |                   | 258366       | Olfr434       | −0.73813|
|                   |                   | 57271        | Olfr1509      | −0.71953|
|                   |                   | 258290       | Olfr1143      | −0.71628|
|                   |                   | 258589       | Olfr703       | −0.66525|
|                   | Signalling by GPCR | 257888       | Olfr1386      | −1.78702|
|                   |                   | 387285       | Hcrtr2        | −1.70246|
|                   |                   | 258716       | Olfr424       | −1.59652|
|                   |                   | 14764        | Ptgdr2        | −1.13784|
|                   |                   | 13492        | Drd5          | −1.0558 |
|                   |                   | 14602        | Ghrhr         | −1.05079|
|                   |                   | 117005       | Olfr74        | −1.04523|
|                   |                   | 18331        | Olfr32        | −0.96808|
|                   |                   | 259021       | Olfr1054      | −0.93971|
|                   |                   | 258677       | Olfr76        | −0.91511|
|                   |                   | 258507       | Olfr96        | −0.87258|
|                   |                   | 14676        | Gna15         | −0.86407|
|                   |                   | 258366       | Olfr434       | −0.73813|
|                   |                   | 57271        | Olfr1509      | −0.71953|
|                   |                   | 258290       | Olfr1143      | −0.71628|
|                   |                   | 258589       | Olfr703       | −0.66525|
|                   | 19206             |              | Ptc1h         | 0.672454|
|                   | 20302             |              | Ccl3          | 2.147125|
### Table 5 (continued)

| Group of pathways                                      | Pathways                  | EntrezGeneID  | Genes       | Log2FC    |
|--------------------------------------------------------|---------------------------|---------------|-------------|-----------|
| GPCR downstream signalling                             |                           | 257888        | Olfr1386    | −1.78702  |
|                                                        |                           | 387285        | Hcrtr2      | −1.70246  |
|                                                        |                           | 258716        | Olfr424     | −1.59652  |
|                                                        |                           | 14764         | Ptgdr2      | −1.13784  |
|                                                        |                           | 13492         | Drd5        | −1.0558   |
|                                                        |                           | 14602         | Ghrhr       | −1.05079  |
|                                                        |                           | 117005        | Olfr74      | −1.04523  |
|                                                        |                           | 18331         | Olfr32      | −0.96808  |
|                                                        |                           | 259021        | Olfr1054    | −0.93971  |
|                                                        |                           | 258677        | Olfr76      | −0.91511  |
|                                                        |                           | 258507        | Olfr96      | −0.87258  |
|                                                        |                           | 14676         | Gna15       | −0.86407  |
|                                                        |                           | 258366        | Olfr434     | −0.7381   |
|                                                        |                           | 57271         | Olfr1509    | −0.71953  |
|                                                        |                           | 258290        | Olfr1143    | −0.7162   |
|                                                        |                           | 258589        | Olfr703     | −0.66525  |
| Signal transduction                                    |                           | 257888        | Olfr1386    | −1.78702  |
|                                                        |                           | 387285        | Hcrtr2      | −1.70246  |
|                                                        |                           | 258716        | Olfr424     | −1.59652  |
|                                                        |                           | 14764         | Ptgdr2      | −1.13784  |
|                                                        |                           | 12064         | Bdnf        | −1.07104  |
|                                                        |                           | 13492         | Drd5        | −1.0558   |
|                                                        |                           | 14602         | Ghrhr       | −1.05079  |
|                                                        |                           | 117005        | Olfr74      | −1.04523  |
|                                                        |                           | 14599         | Gh          | −1.02848  |
|                                                        |                           | 18331         | Olfr32      | −0.96808  |
|                                                        |                           | 259021        | Olfr1054    | −0.93971  |
|                                                        |                           | 258677        | Olfr76      | −0.91511  |
|                                                        |                           | 258507        | Olfr96      | −0.87258  |
|                                                        |                           | 14676         | Gna15       | −0.86407  |
|                                                        |                           | 258366        | Olfr434     | −0.7381   |
|                                                        |                           | 57271         | Olfr1509    | −0.71953  |
|                                                        |                           | 258290        | Olfr1143    | −0.7162   |
|                                                        |                           | 258589        | Olfr703     | −0.66525  |
|                                                        |                           | 67603         | Dusp6       | −0.65975  |
|                                                        |                           | 16150         | Ikkb        | 0.601827  |
|                                                        |                           | 27412         | Peg12       | 0.62484   |
|                                                        |                           | 19206         | Ptc1        | 0.672454  |
|                                                        |                           | 12575         | Cdkn1a      | 0.728624  |
|                                                        |                           | 20302         | Cc3         | 2.147125  |
| Immune response                                        | Epstein-Barr virus infection | 14997       | H2-M9       | −2.12823  |
|                                                        |                           | 15511         | Hspa1b      | −2.10535  |
|                                                        |                           | 193740        | Hspa1a      | −1.78004  |
|                                                        |                           | 69241         | Polr2d      | −0.66069  |
|                                                        |                           | 16150         | Ikkb        | 0.601827  |
|                                                        |                           | 12575         | Cdkn1a      | 0.728624  |
|                                                        | Antigen processing and presentation | 224754     | H2-M11      | 1.200937  |
|                                                        |                           | 14997         | H2-M9       | −2.12823  |
|                                                        |                           | 15511         | Hspa1b      | −2.10535  |
|                                                        |                           | 193740        | Hspa1a      | −1.78004  |
|                                                        | Cancer signalling         | 224754        | H2-M11      | 1.200937  |
|                                                        |                           | 15511         | Hspa1b      | −2.10535  |
|                                                        |                           | 193740        | Hspa1a      | −1.78004  |
|                                                        | MAPK signalling pathway   | 12064         | Bdnf        | −1.07104  |
|                                                        |                           | 286940        | Flnb        | −0.81259  |
|                                                        |                           | 67603         | Dusp6       | −0.65975  |
|                                                        |                           | 16150         | Ikkb        | 0.601827  |
|                                                        |                           | 17873         | Gadd45b     | 0.779545  |
|                                                        |                           | 54652         | Cacna1f     | 0.882943  |
|                                                        | Protein processing in endoplasmic reticulum | 15511       | Hspa1b      | −2.10535  |
|                                                        |                           | 193740        | Hspa1a      | −1.78004  |
### Table 5 (continued)

| Group of pathways               | Pathways                                         | EntrezGeneID | Genes   | Log2FC       |
|---------------------------------|--------------------------------------------------|--------------|---------|--------------|
| Destabilization of mRNA by AUF1 (hnRNP D0) |                                   | 15505        | Hsph1   | −1.21534     |
|                                 |                                   | 15502        | Dnaj1   | −0.89922     |
|                                 |                                   | 81489        | Dnajb1  | −0.67696     |
|                                 |                                   | 22213        | Ube2g2  | −0.6056      |

### Table 6

Group of pathways, pathways, genes related to this pathways and log2FC values after 7 days of exposure to E171 in BALB/c mice. Numbers in bold are upregulated genes. Log2FC= Log2 fold change obtained with LIMMA script with correction for its own time-matched control.

| Group of pathways | Pathways                          | EntrezGeneID | Genes   | Log2FC       |
|-------------------|-----------------------------------|--------------|---------|--------------|
| Signalling        | Olfactory transduction            | 259082       | Olfr1062| −3.1017      |
|                   |                                   | 258390       | Olfr1276| −2.28313     |
|                   |                                   | 258674       | Olfr1427| −2.1351      |
|                   |                                   | 18359        | Olfr59  | −2.08316     |
|                   |                                   | 258025       | Olfr1211| −1.97936     |
|                   |                                   | 18365        | Olfr65  | −1.93793     |
|                   |                                   | 258326       | Olfr642  | −1.88474     |
|                   |                                   | 258409       | Olfr1431| −1.85304     |
|                   |                                   | 259071       | Olfr166  | −1.67436     |
|                   |                                   | 257912       | Olfr948  | −1.66079     |
|                   |                                   | 258880       | Olfr218  | −1.65817     |
|                   |                                   | 258371       | Olfr368  | −1.53827     |
|                   |                                   | 258177       | Olfr1222| −1.53601     |
|                   |                                   | 258784       | Olfr1245| −1.52883     |
|                   |                                   | 258976       | Olfr1262| −1.46816     |
|                   |                                   | 259023       | Olfr1055| −1.46147     |
|                   |                                   | 18315        | Olfr18  | −1.44533     |
|                   |                                   | 258616       | Olfr357  | −1.44533     |
|                   |                                   | 258807       | Olfr910  | −1.42112     |
|                   |                                   | 258560       | Olfr843  | −1.4106      |
|                   |                                   | 258800       | Olfr905  | −1.40489     |
|                   |                                   | 258023       | Olfr1306| −1.3753      |
|                   |                                   | 258494       | Olfr318  | −1.36443     |
|                   |                                   | 258207       | Olfr452  | −1.35668     |
|                   |                                   | 258730       | Olfr483  | −1.24945     |
|                   |                                   | 404222       | Olfr231  | −1.24083     |
|                   |                                   | 258417       | Olfr470  | −1.23992     |
|                   |                                   | 258939       | Olfr63   | −1.23907     |
|                   |                                   | 258662       | Olfr738  | −1.18753     |
|                   |                                   | 258830       | Olfr103  | −1.16458     |
|                   |                                   | 258808       | Olfr620  | −1.15739     |
|                   |                                   | 259041       | Olfr1414| −1.12738     |
|                   |                                   | 258334       | Olfr1396| −1.12314     |
|                   |                                   | 257902       | Olfr704  | −1.09448     |
|                   |                                   | 404318       | Olfr681  | −1.02977     |
|                   |                                   | 18314        | Olfr17   | −0.91665     |
|                   |                                   | 258701       | Olfr401  | −0.88657     |
|                   |                                   | 258353       | Olfr521  | −0.88221     |
|                   |                                   | 258359       | Olfr1312 | −0.85416     |
|                   |                                   | 258290       | Olfr1143 | −0.84815     |
|                   |                                   | 258465       | Olfr1387 | −0.84763     |
|                   |                                   | 258310       | Olfr145  | −0.83906     |
|                   |                                   | 258335       | Olfr374  | −0.82561     |
|                   |                                   | 404311       | Olfr209  | −0.8033      |
|                   |                                   | 259105       | Olfr549  | −0.79583     |
|                   |                                   | 107477       | Guca1b   | −0.72256     |
| Group of pathways | Pathways | EntrezGeneID | Genes | Log2FC |
|-------------------|----------|--------------|-------|--------|
| Olfactory Signalling Pathway | 546896 | Olfr455 | −0.65756 | |
|                     | 259103 | Olfr616 | 0.595395 | |
|                     | 258477 | Olfr197 | 0.727059 | |
|                     | 233670 | Olfr6 | 0.93882 | |
|                     | 258492 | Olfr484 | 1.013283 | |
|                     | 258879 | Olfr330 | 1.320387 | |
|                     | 258590 | Olfr702 | 1.771986 | |
|                     | 259082 | Olfr1062 | −3.1017 | |
|                     | 258674 | Olfr1427 | −2.1351 | |
|                     | 258025 | Olfr1211 | −1.97936 | |
|                     | 18365 | Olfr65 | −1.93793 | |
|                     | 258409 | Olfr1431 | −1.85304 | |
|                     | 259071 | Olfr166 | −1.67436 | |
|                     | 258880 | Olfr218 | −1.65817 | |
|                     | 258371 | Olfr368 | −1.53827 | |
|                     | 258177 | Olfr1222 | −1.53601 | |
|                     | 258784 | Olfr1245 | −1.52883 | |
|                     | 18315 | Olfr18 | −1.44533 | |
|                     | 258616 | Olfr357 | −1.44533 | |
|                     | 258560 | Olfr843 | −1.4106 | |
|                     | 258494 | Olfr318 | −1.36443 | |
|                     | 258207 | Olfr452 | −1.35668 | |
|                     | 258730 | Olfr483 | −1.24945 | |
|                     | 404222 | Olfr231 | −1.24083 | |
|                     | 258417 | Olfr470 | −1.23992 | |
|                     | 258939 | Olfr63 | −1.23907 | |
|                     | 258830 | Olfr103 | −1.16458 | |
|                     | 258808 | Olfr620 | −1.15739 | |
|                     | 259041 | Olfr1414 | −1.12738 | |
|                     | 257902 | Olfr704 | −1.09448 | |
|                     | 404318 | Olfr681 | −1.02977 | |
|                     | 18314 | Olfr17 | −0.91665 | |
|                     | 258701 | Olfr401 | −0.88657 | |
|                     | 258353 | Olfr521 | −0.88221 | |
|                     | 258290 | Olfr1143 | −0.84815 | |
|                     | 258465 | Olfr1387 | −0.84763 | |
|                     | 258310 | Olfr145 | −0.83906 | |
|                     | 258064 | Olfr316 | −0.64194 | |
|                     | 258492 | Olfr484 | 1.013283 | |
|                     | 258879 | Olfr330 | 1.320387 | |
| Signal transduction | 259082 | Olfr1062 | −3.1017 | |
|                     | 20750 | Spp1 | −2.47243 | |
|                     | 16333 | Ins1 | −2.1446 | |
|                     | 258674 | Olfr1427 | −2.1351 | |
|                     | 258025 | Olfr1211 | −1.97936 | |
|                     | 18365 | Olfr65 | −1.93793 | |
|                     | 116903 | Calcb | −1.87798 | |
|                     | 258409 | Olfr1431 | −1.85304 | |
|                     | 14459 | Gast | −1.77078 | |
|                     | 259071 | Olfr166 | −1.67436 | |
|                     | 258880 | Olfr218 | −1.65817 | |
|                     | 545481 | Arhgap40 | −1.55664 | |
|                     | 258371 | Olfr368 | −1.53827 | |
|                     | 258177 | Olfr1222 | −1.53601 | |
|                     | 258784 | Olfr1245 | −1.52883 | |
|                     | 18315 | Olfr18 | −1.44533 | |
|                     | 258616 | Olfr357 | −1.44533 | |
|                     | 80885 | Hcar2 | −1.4179 | |
|                     | 258560 | Olfr843 | −1.4106 | |
|                     | 258494 | Olfr318 | −1.36443 | |
|                     | 258207 | Olfr452 | −1.35668 | |
## Table 6 (continued)

| Group of pathways | Pathways | EntrezGeneID | Genes | Log2FC |
|-------------------|----------|--------------|-------|--------|
| 574417            | Tas2r137 | −1.33149     |
| 22422             | Wnt7b    | −1.2964      |
| 258730            | Olfr483  | −1.24945     |
| 404222            | Olfr231  | −1.24083     |
| 258417            | Olfr470  | −1.23992     |
| 258939            | Olfr63   | −1.23907     |
| 258830            | Olfr103  | −1.16458     |
| 258808            | Olfr620  | −1.15739     |
| 259041            | Olfr1414 | −1.12738     |
| 257902            | Olfr704  | −1.09448     |
| 226970            | Arhgef4  | −1.07033     |
| 404318            | Olfr681  | −1.02977     |
| 13645             | Egf      | −1.01864     |
| 14602             | Ghrhr    | −0.99429     |
| 241113            | Prkag3   | −0.99043     |
| 252837            | Akr4     | −0.97382     |
| 14686             | Gnat2    | −0.96149     |
| 11549             | Adra1a   | −0.95816     |
| 12776             | Ccr8     | −0.9491      |
| 18314             | Olfr17   | −0.91665     |
| 228543            | Rhov     | −0.90042     |
| 258701            | Olfr401  | −0.88657     |
| 258353            | Olfr521  | −0.88221     |
| 228775            | Trib3    | −0.87301     |
| 258290            | Olfr143  | −0.84815     |
| 258465            | Olfr1387 | −0.84763     |
| 99296             | Hrh3     | −0.84015     |
| 258310            | Olfr145  | −0.83906     |
| 12922             | Crhr2    | −0.83292     |
| 54199             | Cct2     | −0.80972     |
| 22410             | Wnt10b   | −0.77983     |
| 235611            | Plxb1    | −0.74232     |
| 107477            | Guca1b   | −0.72256     |
| 65086             | Lpar3    | −0.70333     |
| 224143            | Poglut1  | −0.67818     |
| 11304             | Abca4    | −0.66413     |
| 16971             | Lrp1     | −0.65473     |
| 258064            | Olfr316  | −0.64194     |
| 242093            | Rxfp4    | −0.63316     |
| 13982             | Esr1     | −0.60031     |
| 26965             | Cul1     | 0.587056     |
| 21372             | Tbl1x    | 0.594507     |
| 18554             | Pcsk7    | 0.596425     |
| 16337             | Insr     | 0.602833     |
| 11789             | Apc      | 0.608252     |
| 54611             | Pde3a    | 0.612094     |
| 64654             | Fgf23    | 0.61382      |
| 20779             | Src      | 0.618214     |
| 102626            | Mapkapk3 | 0.621833     |
| 78757             | Rictor   | 0.632871     |
| 213498            | Arhgef11 | 0.639783     |
| 14367             | Fzd5     | 0.653371     |
| 54126             | Arhgef7  | 0.671002     |
| 18753             | Prkcd    | 0.684102     |
| 66313             | Smurf2   | 0.696636     |
| 18576             | Pde3b    | 0.699416     |
| 208643            | Eif4g1   | 0.706288     |
| 238871            | Pde4d    | 0.709113     |
| 18708             | Pik3r1   | 0.711339     |
| 17311             | Kitl     | 0.738123     |
| 20482             | Skil     | 0.743497     |
| Group of pathways | Pathways | EntrezGeneID | Genes   | Log2FC   |
|-------------------|----------|-------------|---------|----------|
|                   |          | 19730       | Ralgds  | 0.760822 |
|                   |          | 11652       | Akt2    | 0.802731 |
|                   |          | 12168       | Bmpr2   | 0.808147 |
|                   |          | 13618       | Ednrb   | 0.846174 |
|                   |          | 21337       | Tacr2   | 0.860064 |
|                   |          | 258492      | Olfr484 | 1.013283 |
|                   |          | 19206       | Ptc1    | 1.232834 |
|                   |          | 258879      | Olfr230 | 1.320287 |
|                   |          | 259082      | Olfr1062| −3.1017  |
|                   |          | 258674      | Olfr1427| −2.1351  |
|                   |          | 258025      | Olfr1211| −1.97936 |
|                   |          | 18365       | Olfr65  | −1.93793 |
|                   |          | 116903      | Calcb   | −1.87798 |
|                   |          | 258409      | Olfr1431| −1.85304 |
|                   |          | 14459       | Gast    | −1.77078 |
|                   |          | 259071      | Olfr166 | −1.67436 |
|                   |          | 258880      | Olfr218 | −1.65817 |
|                   |          | 258371      | Olfr368 | −1.53827 |
|                   |          | 258177      | Olfr1222| −1.53601 |
|                   |          | 258784      | Olfr1245| −1.52883 |
|                   |          | 18315       | Olfr18  | −1.44533 |
|                   |          | 258616      | Olfr357 | −1.44533 |
|                   |          | 80885       | Hcar2   | −1.4179  |
|                   |          | 258560      | Olfr843 | −1.4106  |
|                   |          | 258494      | Olfr318 | −1.36443 |
|                   |          | 258207      | Olfr452 | −1.35668 |
|                   |          | 574417      | Tas2r137| −1.33149 |
|                   |          | 258730      | Olfr483 | −1.24945 |
|                   |          | 404222      | Olfr231 | −1.24083 |
|                   |          | 258417      | Olfr470 | −1.23992 |
|                   |          | 258939      | Olfr63  | −1.23907 |
|                   |          | 258830      | Olfr103 | −1.16458 |
|                   |          | 258808      | Olfr260 | −1.15739 |
|                   |          | 259041      | Olfr1414| −1.12738 |
|                   |          | 257902      | Olfr704 | −1.09448 |
|                   |          | 226970      | Arhgef4 | −1.07033 |
|                   |          | 404318      | Olfr681 | −1.02977 |
|                   |          | 14602       | Ghrhr   | −0.99429 |
|                   |          | 14686       | Gnat2   | −0.96149 |
|                   |          | 11549       | Adra1a  | −0.95816 |
|                   |          | 12776       | Ccr8    | −0.9491 |
|                   |          | 18314       | Olfr17  | −0.91665 |
|                   |          | 258701      | Olfr401 | −0.88657 |
|                   |          | 258353      | Olfr521 | −0.88221 |
|                   |          | 258290      | Olfr1143| −0.84815 |
|                   |          | 258465      | Olfr1387| −0.84763 |
|                   |          | 99296       | Hhr3    | −0.84015 |
|                   |          | 258310      | Olfr145 | −0.83906 |
|                   |          | 12922       | Chr3    | −0.83292 |
|                   |          | 235611      | Pknb1   | −0.74232 |
|                   |          | 65086       | Lpar3   | −0.70333 |
|                   |          | 258064      | Olfr316 | −0.64194 |
|                   |          | 242093      | Rxfp4   | −0.63316 |
|                   |          | 54611       | Pde3a   | 0.612094 |
|                   |          | 213498      | Arhgef11| 0.639783 |
|                   |          | 54126       | Arhgef7 | 0.671002 |
|                   |          | 18753       | Prkcd   | 0.684102 |
|                   |          | 18576       | Pde3b   | 0.699416 |
|                   |          | 238871      | Pde4d   | 0.709113 |
|                   |          | 18708       | Pik3r1  | 0.711339 |
|                   |          | 13618       | Ednrb   | 0.846174 |
### Table 6 (continued)

| Group of pathways | Pathways | EntrezGeneID | Genes | Log2FC |
|-------------------|----------|--------------|-------|--------|
| 21337 Tacr2      | 0.860064 |
| 258492 Olfr484   | 1.013283 |
| 258879 Olfr330   | 1.320387 |
| Signalling by GPCR | Olfr1062 | −3.1017 |
| 258025 Olfr1427  | −2.1351  |
| 18365 Olfr65     | −1.93793 |
| 116903 Calcb     | −1.87798 |
| 258409 Olfr1431  | −1.85304 |
| 14459 Gast       | −1.77078 |
| 259071 Olfr166   | −1.67436 |
| 258880 Olfr218   | −1.65817 |
| 258371 Olfr368   | −1.53827 |
| 258177 Olfr1222  | −1.53601 |
| 258784 Olfr1245  | −1.52883 |
| 18315 Olfr18     | −1.44533 |
| 258616 Olfr357   | −1.44533 |
| 80885 Hcar2      | −1.4179  |
| 258560 Olfr843   | −1.4106  |
| 258494 Olfr318   | −1.36443 |
| 258207 Olfr452   | −1.35668 |
| 574417 Tax2r137  | −1.33149 |
| 258730 Olfr483   | −1.24945 |
| 404222 Olfr231   | −1.24083 |
| 258417 Olfr470   | −1.23992 |
| 258939 Olfr63    | −1.23907 |
| 258830 Olfr103   | −1.16458 |
| 258808 Olfr620   | −1.15739 |
| 259041 Olfr1414  | −1.12738 |
| 257902 Olfr704   | −1.09448 |
| 226970 Arhge4     | −1.07033 |
| 404318 Olfr681   | −1.02977 |
| 14602 Ghrhr      | −0.99429 |
| 252837 Ackr4     | −0.97382 |
| 14686 Gnat2      | −0.96149 |
| 11549 Adra1a     | −0.95816 |
| 12776 Ccr8       | −0.9491  |
| 18314 Olfr17     | −0.91665 |
| 258701 Olfr401   | −0.88657 |
| 258353 Olfr521   | −0.88221 |
| 258290 Olfr1143  | −0.84815 |
| 258465 Olfr1387  | −0.84763 |
| 99296 Hrh3       | −0.84015 |
| 258310 Olfr145   | −0.83906 |
| 12922 Chrd2      | −0.83292 |
| 54199 Ccr2l2     | −0.80972 |
| 235611 Plxb1     | −0.74232 |
| 65086 Lpar3      | −0.70333 |
| 258064 Olfr316   | −0.64194 |
| 242093 Rxfp4     | −0.63316 |
| 54611 Pde3a      | 0.612094 |
| 213498 Arhge11   | 0.639783 |
| 14367 Fzd5       | 0.653371 |
| 54126 Arhge7     | 0.671002 |
| 18753 Prkcd      | 0.684102 |
| 18576 Pde3b      | 0.699416 |
| 238871 Pde4d     | 0.709113 |
| 18708 Pik3r1     | 0.711339 |
| 13618 Ednrb      | 0.846174 |
| 21337 Tacr2      | 0.860064 |
| 258492 Olfr484   | 1.013283 |
| Group of pathways | Pathways          | EntrezGeneID | Genes          | Log2FC     |
|-------------------|-------------------|--------------|----------------|------------|
| Odorant GPCRs     |                   | 19206        | Ptc1           | 1.232834   |
|                   |                   | 258879       | Olfr330        | 1.320387   |
|                   | Vmn1r43           | 113847       | −1.70758       |            |
|                   | Vmn1r47           | 113846       | −1.51436       |            |
|                   | Olfr18            | 18315        | −1.44533       |            |
|                   | Olfr470           | 258417       | −1.23992       |            |
|                   | Olfr63            | 258939       | −1.23907       |            |
|                   | Vmn1r48           | 113845       | −1.049         |            |
|                   | Gpr162            | 14788        | −0.90054       |            |
|                   | Olfr45            | 258310       | −0.83906       |            |
|                   | Adgr3             | 381628       | −0.81046       |            |
|                   | Adgr5             | 224792       | −0.63765       |            |
|                   | Olfr6             | 233670       | 0.93882        |            |
| IRS-related events|                   | 107515       | Lgr4           | 0.968492   |
|                   | Olfr484           | 258492       | 1.013283       |            |
|                   | Vmn1r51           | 22296        | 1.806044       |            |
| GPCRs, Other      |                   | 18359        | Olfr59         | −2.08316   |
|                   | Olfr642           | 258326       | −1.88474       |            |
|                   | Vmn1r43           | 113847       | −1.70758       |            |
|                   | Vmn1r47           | 113846       | −1.51436       |            |
|                   | Olfr18            | 18315        | −1.44533       |            |
|                   | Vmn1r48           | 113845       | −1.049         |            |
|                   | Gpr162            | 14788        | −0.90054       |            |
|                   | Olfr29-ps1        | 29848        | −0.88445       |            |
|                   | Fzd5              | 14367        | 0.653371       |            |
| Insulin receptor  |                   | 233670       | Olfr6          | 0.93882    |
| signalling cascade|                   | 22296        | Vmn1r51        | 1.806044   |
|                   | Ins1              | 16333        | −2.1446        |            |
|                   | Prkag3            | 241113       | −0.99043       |            |
|                   | Trib3             | 228775       | −0.87301       |            |
|                   | Insr              | 16337        | 0.602833       |            |
|                   | Fgf23             | 64654        | 0.61382        |            |
|                   | Pde3b             | 18576        | 0.699416       |            |
|                   | Eif4g1            | 208643       | 0.706288       |            |
|                   | Pik3r1            | 18708        | 0.711339       |            |
|                   | Akt2              | 11652        | 0.802731       |            |
| Insulin receptor  |                   | 16333        | −2.1446        |            |
| signalling cascade|                   | 241113       | −0.90043       |            |
|                   | Trib3             | 228775       | −0.87301       |            |
|                   | Insr              | 16337        | 0.602833       |            |
|                   | Fgf23             | 64654        | 0.61382        |            |
|                   | Pde3b             | 18576        | 0.699416       |            |
|                   | Eif4g1            | 208643       | 0.706288       |            |
|                   | Pik3r1            | 18708        | 0.711339       |            |
|                   | Akt2              | 11652        | 0.802731       |            |
|                   | Ins1              | 16333        | −2.1446        |            |
|                   | Insr              | 16337        | 0.602833       |            |
| Cancer signalling | Cellular Senescence| 12608        | Cebp            | −0.79497   |
|                   |                   | 13619        | Phc1            | −0.62828   |
|                   |                   | 22059        | Trp53           | 0.607334   |
|                   |                   | 104248       | Cabin1          | 0.613774   |
|                   |                   | 102626       | Mapkapk3        | 0.621833   |
|                   |                   | 54383        | Phc2            | 0.702052   |
|                   |                   | 320332       | Hist4b          | 0.738735   |
|                   |                   | 15260        | Hira            | 0.740336   |
|                   |                   | 97122        | Hist2h4         | 0.763623   |
|                   |                   | 319160       | Hist11b4k       | 0.876777   |
|                   |                   | 319148       | Hist11b3c       | 0.96292    |
|                   |                   | 93987        | Fzd10           | −1.96894   |
|                   |                   | 22422        | Wnt7b           | −1.2964    |
|                   |                   | 22410        | Wnt10b          | −0.77983   |
| Group of pathways                  | Pathways                                      | EntrezGeneID | Genes      | Log2FC   |
|-----------------------------------|-----------------------------------------------|--------------|------------|----------|
|                                   |                                               |              |            |          |
|                                   |                                               | 22059        | Trp53      | 0.607334 |
|                                   |                                               | 11789        | Apc        | 0.608252 |
|                                   |                                               | 14367        | Fzd5       | 0.653371 |
| p38MAPK events                    |                                               | 19206        | Ptc1       | 1.232834 |
|                                   |                                               | 20779        | Src         | 0.618214 |
|                                   |                                               | 102626       | Mapkapk3   | 0.621833 |
| Activation of PKB                 |                                               | 19730        | Ralgs       | 0.760822 |
|                                   |                                               | 228775       | Trib3      | −0.87301 |
| Formation of Senescence-Associated Heterochromatin Foci (SAHF) | | 11652        | Akt2       | 0.802731 |
| Cell cycle                        | Meiosis                                       | 382522       | Hist3h2bb-ps | −1.45034 |
|                                   |                                               | 320332       | Hist4b4    | 0.738735 |
|                                   |                                               | 97122        | Hist2b4    | 0.763623 |
|                                   |                                               | 319160       | Hist1b4k   | 0.876777 |
|                                   |                                               | 319148       | Hist1h3c   | 0.96292  |
|                                   |                                               | 209662       | Sycp3      | 1.533723 |
|                                   | Meiotic Recombination                         | 320332       | Hist4b4    | 0.738735 |
| RNA Polymerase I Promoter Opening|                                               | 97122        | Hist2b4    | 0.763623 |
|                                   |                                               | 319160       | Hist1b4k   | 0.876777 |
|                                   |                                               | 319148       | Hist1h3c   | 0.96292  |
| Oxidative stress                  | Oxidative Stress                              | 13619        | Phc1       | −0.62828 |
|                                   | Induced Senescence                            | 22059        | Trp53      | 0.607334 |
|                                   |                                               | 102626       | Mapkapk3   | 0.621833 |
|                                   |                                               | 54383        | Phc2       | 0.702052 |
|                                   |                                               | 320332       | Hist4b4    | 0.738735 |
|                                   |                                               | 97122        | Hist2b4    | 0.763623 |
|                                   |                                               | 319160       | Hist1b4k   | 0.876777 |
|                                   |                                               | 319148       | Hist1h3c   | 0.96292  |
|                                   | Cellular responses to stress                  | 12608        | Cebpb      | −0.79497 |
|                                   |                                               | 13619        | Phc1       | −0.62828 |
|                                   |                                               | 22059        | Trp53      | 0.607334 |
|                                   |                                               | 104248       | Cabin1     | 0.613774 |
|                                   |                                               | 15260        | Hira       | 0.740336 |
| Neuronal response                 | Amyloids                                      | 320332       | Hist4b4    | 0.738735 |
|                                   |                                               | 97122        | Hist2b4    | 0.763623 |
|                                   |                                               | 319160       | Hist1b4k   | 0.876777 |
|                                   |                                               | 319148       | Hist1h3c   | 0.96292  |
|                                   | Meiotic Synapsis                              | 382522       | Hist3h2bb-ps | −1.45034 |
|                                   |                                               | 320332       | Hist4b4    | 0.738735 |
|                                   |                                               | 97122        | Hist2b4    | 0.763623 |
|                                   |                                               | 319160       | Hist1b4k   | 0.876777 |
|                                   |                                               | 319148       | Hist1h3c   | 0.96292  |
|                                   |                                               | 209662       | Sycp3      | 1.533723 |
| Metabolism                        | Vitamin C (ascorbate) metabolism              | 68214        | Gsto2      | −0.79791 |
|                                   |                                               | 109754       | Cyb5r3     | 0.61693  |
|                                   |                                               | 54338        | Slc23a2    | 0.678156 |
|                                   | Protein citrullination                        | 18599        | Padi1      | −1.40412 |
|                                   |                                               | 18600        | Padi2      | −0.92956 |
Table 7

Group of pathways, pathways, genes related to this pathways and log2FC values after 14 days of exposure to E171 in BALB/c mice. Numbers in bold are upregulated genes. Log2FC=Log2 fold change obtained with LIMMA script with correction for its own time-matched control.

| Group of pathways | Pathways | EntrezGeneID | Genes   | Log2FC  |
|-------------------|----------|--------------|---------|---------|
| Cancer signalling | GAB1 signalosome | 12524 | Cd86    | −1.08973 |
|                   |          | 18706 | Pik3ca  | −1.03111 |
|                   |          | 18595 | Pdgfra  | −0.79464 |
|                   |          | 18591 | Pdgfb   | −0.73059 |
|                   |          | 19211 | Pten    | −0.65603 |
|                   |          | 18709 | Pik3r2  | 0.590647 |
|                   |          | 67605 | Akt1s1  | 0.61903 |
|                   |          | 18708 | Pik3r1  | 0.668175 |
|                   |          | 64654 | Fgf23   | 0.67401 |
|                   |          | 56484 | Foxo3   | 0.778968 |
|                   |          | 384783| Irs2    | 0.794769 |
|                   |          | 20779 | Src     | 0.798342 |
|                   |          | 12575 | Cdkn1a  | 0.821051 |
| PIP3 activates AKT signalling | 12524 | Cd86    | −1.08973 |
| PI-3K cascade |          | 18706 | Pik3ca  | −1.03111 |
| P13K events in ERBB2 signalling | 18595 | Pdgfra  | −0.79464 |
| P13K/AKT Signalling in Cancer | 18591 | Pdgfb   | −0.73059 |
| P13K/AKT activation | 19211 | Pten    | −0.65603 |
| Constitutive P13K/AKT Signalling in Cancer | 18709 | Pik3r2  | 0.590647 |
|                   |          | 67605 | Akt1s1  | 0.61903 |
|                   |          | 18708 | Pik3r1  | 0.668175 |
|                   |          | 64654 | Fgf23   | 0.67401 |
|                   |          | 56484 | Foxo3   | 0.778968 |
|                   |          | 384783| Irs2    | 0.794769 |
| P13K events in ERBB4 signalling | 12575 | Cdkn1a  | 0.821051 |
| Glioma |          | 12524 | Cd86    | −1.08973 |
|         |          | 18706 | Pik3ca  | −1.03111 |
|         |          | 68318 | Aph1c   | −0.84754 |
|         |          | 18595 | Pdgfra  | −0.79464 |
|         |          | 18591 | Pdgfb   | −0.73059 |
|         |          | 17999 | Nedd4   | −0.68405 |
|         |          | 13982 | Esr1    | −0.68068 |
|         |          | 19211 | Pten    | −0.65603 |
|         |          | 80707 | Wwox    | −0.64542 |
|         |          | 18709 | Pik3r2  | 0.590647 |
|         |          | 67605 | Akt1s1  | 0.61903 |
|         |          | 18708 | Pik3r1  | 0.668175 |
|         |          | 64654 | Fgf23   | 0.67401 |
|         |          | 56484 | Foxo3   | 0.778968 |
|         |          | 384783| Irs2    | 0.794769 |
| Melanoma |          | 12575 | Cdkn1a  | 0.821051 |
|         |          | 18706 | Pik3ca  | −1.03111 |
|         |          | 18595 | Pdgfra  | −0.79464 |
|         |          | 18591 | Pdgfb   | −0.73059 |
|         |          | 20663 | Sos2    | −0.65643 |
|         |          | 19211 | Pten    | −0.65603 |
|         |          | 18709 | Pik3r2  | 0.590647 |
|         |          | 18708 | Pik3r1  | 0.668175 |
|         |          | 64654 | Fgf23   | 0.67401 |
| Group of pathways                  | Pathways                                                                 | EntrezGeneID | Genes          | Log2FC    |
|-----------------------------------|--------------------------------------------------------------------------|--------------|----------------|-----------|
| Cell cycle                        | Caspase-mediated cleavage of cytoskeletal proteins                       |              |                |           |
|                                   |                                                                           | 12575        | Cdkn1a         | 0.821051  |
|                                   |                                                                           | 22059        | Trp53          | 0.876668  |
|                                   |                                                                           | 11652        | Akt2           | 1.261177  |
|                                   |                                                                           | 14453        | Gas2           | −0.77701  |
|                                   |                                                                           | 17762        | Mapt           | −0.77412  |
|                                   |                                                                           | 18810        | Plec           | 0.588317  |
|                                   |                                                                           | 13169        | Dbnl           | 0.660419  |
|                                   |                                                                           | 12524        | Cdh6           | −1.08973  |
|                                   |                                                                           | 18706        | Pik3ca         | −1.03111  |
|                                   |                                                                           | 68318        | Aph1c          | −0.84754  |
|                                   |                                                                           | 18595        | Pdgfra         | −0.79464  |
|                                   |                                                                           | 18591        | Pdgfb          | −0.73059  |
|                                   |                                                                           | 17999        | Nedd4          | −0.68405  |
|                                   |                                                                           | 13982        | Esr1           | −0.68068  |
|                                   |                                                                           | 19211        | Pten           | −0.65603  |
|                                   |                                                                           | 80707        | Wwox           | −0.64542  |
|                                   |                                                                           | 18709        | Pik3r2         | 0.590647  |
|                                   |                                                                           | 67605        | Akt1s1         | 0.61903   |
|                                   |                                                                           | 18708        | Pik3r1         | 0.668175  |
|                                   |                                                                           | 64654        | Fgf23          | 0.67401   |
|                                   |                                                                           | 56484        | Foxo3          | 0.778968  |
|                                   |                                                                           | 384783       | Irs2           | 0.794769  |
|                                   |                                                                           | 12575        | Cdkn1a         | 0.821051  |
|                                   |                                                                           | 18709        | Pik3r2         | 0.590647  |
|                                   |                                                                           | 67605        | Akt1s1         | 0.61903   |
|                                   |                                                                           | 18708        | Pik3r1         | 0.668175  |
|                                   |                                                                           | 64654        | Fgf23          | 0.67401   |
|                                   |                                                                           | 56484        | Foxo3          | 0.778968  |
|                                   |                                                                           | 384783       | Irs2           | 0.794769  |
|                                   |                                                                           | 12575        | Cdkn1a         | 0.821051  |
| PERK regulated gene expression    |                                                                           |              |                |           |
|                                   |                                                                           | 13666        | Eif2ak3        | −0.68318  |
|                                   |                                                                           | 13665        | Eif2s1         | −0.63654  |
| Oxidative stress                  | Mitochondrial Uncoupling Proteins                                        |              |                |           |
|                                   |                                                                           | 22228        | Ucp2           | 0.870627  |
|                                   |                                                                           | 22229        | Ucp3           | 0.784513  |
|                                   |                                                                           |              |                |           |
| Immune response                   | Role of LAT2/NTAL/LAB on calcium mobilization                             |              |                |           |
|                                   |                                                                           | 12524        | Cdh6           | −1.08973  |
|                                   |                                                                           | 18706        | Pik3ca         | −1.03111  |
|                                   |                                                                           | 18595        | Pdgfra         | −0.79464  |
|                                   |                                                                           | 18591        | Pdgfb          | −0.73059  |
|                                   |                                                                           | 19211        | Pten           | −0.65603  |
|                                   |                                                                           | 56743        | Lat2           | −0.59939  |
|                                   |                                                                           | 18709        | Pik3r2         | 0.590647  |
|                                   |                                                                           | 67605        | Akt1s1         | 0.61903   |
|                                   |                                                                           | 18708        | Pik3r1         | 0.668175  |
|                                   |                                                                           | 64654        | Fgf23          | 0.67401   |
|                                   |                                                                           | 56484        | Foxo3          | 0.778968  |
|                                   |                                                                           | 384783       | Irs2           | 0.794769  |
|                                   |                                                                           | 12575        | Cdkn1a         | 0.821051  |
|                                   |                                                                           | 20302        | Ccl3           | −2.21765  |
|                                   |                                                                           | 12772        | Ccr2           | −1.20679  |
|                                   |                                                                           | 20306        | Ccl7           | −1.10314  |
|                                   |                                                                           | 18706        | Pik3ca         | −1.03111  |
|                                   |                                                                           | 14772        | Grk4           | −1.02692  |
| Chemokine signalling pathway      |                                                                           |              |                |           |
|                                   |                                                                           | 15162        | Hck            | −1.01759  |
|                                   |                                                                           | 140580       | Elmo1          | −0.99056  |
|                                   |                                                                           | 80901        | Cxcr6          | −0.90825  |
|                                   |                                                                           | 20293        | Ccl12          | −0.84754  |
|                                   |                                                                           | 277360       | Prex1          | −0.76644  |
|                                   |                                                                           | 20301        | Ccl27a         | −0.74211  |
|                                   |                                                                           | 11513        | Adcy7          | −0.68104  |
|                                   |                                                                           | 20663        | Sox2           | −0.85643  |
|                                   |                                                                           | 57257        | Vav3           | −0.62284  |
|                                   |                                                                           | 216869       | Arhb2          | −0.61054  |
|                                   |                                                                           | 18709        | Pik3r2         | 0.590647  |
|                                   |                                                                           | 18708        | Pik3r1         | 0.668175  |
|                                   |                                                                           | 56484        | Foxo3          | 0.778968  |
|                                   |                                                                           | 20779        | Src             | 0.798342  |
|                                   |                                                                           | 11652        | Akt2           | 1.261177  |

**Table 7 (continued)**
### Table 7 (continued)

| Group of pathways | Pathways | EntrezGeneID | Genes  | Log2FC    |
|-------------------|----------|--------------|--------|-----------|
| Role of phospholipids in phagocytosis | 18706    | Pik3ca       | −1.03111 |
|                   | 14129    | Fcgr1        | −0.82062 |
|                   | 14130    | Fcgr2b       | −0.78621 |
|                   | 18709    | Pik3r2       | 0.590647 |
|                   | 18708    | Pik3r1       | 0.668175 |
| Bone development  | Chondroitin sulfate biosynthesis | 121021  | Cspg4  | −0.93035  |
|                   |          | 12111        | Bgn    | −0.78843  |
|                   |          | 60322        | Chst7  | −0.78524  |
|                   |          | 100910       | Chpt2  | −0.73774  |
|                   |          | 269941       | Chsy1  | −0.67983  |
|                   | Chondroitin sulfate/dermatan sulfate metabolism | 338362  | Ust    | −1.31467  |
|                   |          | 121021       | Cspg4  | −0.93035  |
|                   |          | 12111        | Bgn    | −0.78843  |
|                   |          | 60322        | Chst7  | −0.78524  |
|                   |          | 71951        | Gpc2   | −0.78001  |
|                   |          | 100910       | Chpt2  | −0.73774  |
|                   |          | 269941       | Chsy1  | −0.67983  |
| Neuronal response | Serotonin receptors | 15566   | Htr7   | −1.20957  |
|                   |          | 15551        | Htr1b  | −1.07636  |
|                   |          | 15565        | Htr6   | 1.237737  |

### Table 8

Group of pathways, pathways, genes related to this pathways and log2FC values after 21 days of exposure to E171 in BALB/c mice. Numbers in bold are upregulated genes. Log2FC = Log2 fold change obtained with LIMMA script with correction for its own time-matched control.

| Group of pathways | Pathways | EntrezGeneID | Genes  | Log2FC    |
|-------------------|----------|--------------|--------|-----------|
| Signalling        | Olfactory Signalling Pathway | 258267  | Olfr370 | −1.87677  |
|                   |          | 258882       | Olfr874 | −1.30081  |
|                   |          | 258064       | Olfr316 | 0.697396  |
|                   |          | 634104       | Olfr287 | 0.724416  |
|                   |          | 259145       | Olfr1251| 0.777263  |
|                   |          | 258269       | Olfr930 | 0.853172  |
|                   |          | 258701       | Olfr410 | 1.156804  |
|                   |          | 258358       | Olfr557 | 2.218149  |
| Olfactory transduction |            | 258267       | Olfr370 | −1.87677  |
|                   |          | 258543       | Olfr810 | −1.7235   |
|                   |          | 258882       | Olfr874 | −1.30081  |
|                   |          | 258238       | Olfr417 | −0.99523  |
|                   |          | 57269        | Olfr1507| 0.696378  |
|                   |          | 634104       | Olfr287 | 0.724416  |
|                   |          | 258269       | Olfr930 | 0.853172  |
|                   |          | 259114       | Olfr570 | 1.00058   |
|                   |          | 258701       | Olfr410 | 1.156804  |
|                   |          | 18345        | Olfr46  | 1.302175  |
|                   |          | 258358       | Olfr557 | 2.218149  |
| GPCR downstream signalling |          | 258267       | Olfr370 | −1.87677  |
|                   |          | 15945        | Cxc10   | −1.61387  |
|                   |          | 258882       | Olfr874 | −1.30081  |
|                   |          | 15551        | Htr1b   | −0.89351  |
|                   |          | 20301        | Ccl27a  | −0.59555  |
|                   |          | 258064       | Olfr316 | 0.697396  |
|                   |          | 634104       | Olfr287 | 0.724416  |
|                   |          | 259145       | Olfr1251| 0.777263  |
|                   |          | 258269       | Olfr930 | 0.853172  |
|                   |          | 258701       | Olfr410 | 1.156804  |
|                   |          | 57385        | P2ry4   | 1.273995  |
2.3. Microarray preparation and data pre-processing

Samples were labelled with Cyanine 3 (Cy 3), hybridized, and washed according to the One-Color Microarray-Based Gene Expression Analysis protocol version 6.6 (Agilent Technologies, The Netherlands) [5]. Hybridization was performed on Agilent SurePrint G3 mouse Gene exp 60kv2 microarrays. Samples were scanned using an Agilent DNA Microarray Scanner with Surescan High-resolution Technology (Agilent Technologies, The Netherlands). Raw data was extracted and checked by the quality control pipeline provided by Agilent (Feature extraction software (FES) version 10.7.3.1). Another quality check was performed with an in-house pipeline in R (https://github.com/BiGCAT-UM/arrayQC_Module/) and data was normalized with local background correction, flagging of bad spots, controls and spots with too low intensity, log2 transformation and quantile normalization. Raw data with expression values and genes were selected for data analysis based on flags and missing values (GEO accession: GSE92563). Height groups were defined: control 2 days, 7 days, 14 days, 21 days for the controls and E171 2 days, 7 days, 14 days, 21 days for the exposed samples. Within each group, unique identifiers had to pass for the spot and have less than 40% of missing values. In all groups, unique identifiers had to have an average expression > 4, missing values were imputed by k-nearest neighbours (k-NN; k-value 15), and repeated identifiers merged on the median. Differentially
expressed genes were extracted with a Linear Mixed Model Analysis for Microarrays (LIMMA) [6] (version 1.0) [7] with the following criteria: a fold-change (FC) of 1.5 and a p-value of 0.05. The data of each control time point (control) was corrected from the time-matched exposed mice to E171. DEG extracted are shown in Tables 1, 2, 3, and 4.

2.4. Pathway analysis

Functional annotation of these treatment-specific DEG was performed with Consensus Pathway Database (CPDB) for an over-representation gene set analysis (ORA) [8,9]. All the available databases from CPDB were used (release MM9, 11 Oct. 2013) with settings in the “pathways as defined by pathway databases” with a minimum overlap of input list of 2 and a p-value cut-off of p < 0.01. For each annotation set, the p-value is calculated using a Fisher’s exact test. CPBD corrects for multiple hypothesis testing using the false discovery rate procedure within each type of annotation set [8,9]. Results of the ORA are available in Tables 5, 6, 7, and 8.

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