Supplemental Research Design and Methods

Protein analysis by MS/MS

ELV proteins were run in PAGE on 10% SDS gels. Coomassie-stained gels were cut into 10 strips and trypsinized. The digested peptides were loaded on a 100 nm × 10 cm capillary column packed in-house with C18 Monitor 100 A-spherical silica beads and eluted by a one h gradient of 10–100% acetonitrile, 0.1% TFA. Mass spectrometric analysis was performed and analyzed in the UAB Proteomic Core Facility using an LTQ XL spectrometer (Thermo Finnigan).

UniProt protein IDs were enriched for GO terms using the Protein Information and Property Explorer (http://pipe.systemsbiology.net/pipe/#summary). Search and calculation of the number of proteins falling into different categories according to their cellular location and biological processes was done.

ELV fatty acid profile

Fatty acids from adipose ELVs are isolated and methylated according to the method of Moser and Moser (1). Briefly, 0.5 mg of adipose ELVs isolated from the medium of 30 min cultures were resuspended in PBS and mixed with 1 ml methanol:dichloromethane (3:1 v/v). After addition of an internal standard (50 nmol of heptadecanoic acid), 200 μl acetyl chloride was added while vortexing, and the sample was incubated at 75°C for 1 h. After cooling, the reaction solution was neutralized with 4 ml of 7% K$_2$CO$_3$ and the lipids were extracted into hexane. The hexane fraction was washed with acetonitrile and concentrated under nitrogen. The fatty acid methyl ester (FAME) mixture was then
resuspended in hexane and analyzed by gas chromatography-mass spectroscopy (GC-MS). GC-MS analysis was performed on a Hewlett-Packard Series II 5890 gas chromatograph coupled to an HP-5971 mass spectrometer equipped with a Supelcowax SP-10 capillary column. The oven temperature was maintained at 150°C for 2 min, ramped at 10°C/min to 200°C and held for 4 min, ramped again at 5°C/min to 240°C and held for 3 min, and then finally ramped to 270°C at 10°C/min and maintained for 5 min. The injector and detector were maintained at 260°C and 280°C, respectively. Carrier gas flow rate was maintained at a constant 0.8ml/min. Total ion monitoring was performed, encompassing mass ranges from 50-550 amus. Peak identification was based upon comparison of both retention time and mass spectra of the unknown peak to that of known standards within the GC-MS database library. FAME mass was determined by comparing areas of unknown FAMEs to that of a fixed concentration of the 17:0 internal standard. Response factors were determined for each individual FAME to correct for GC-MS total ion chromatograph discrepancies in quantification. These factors were determined through the use of a GLC reference standard which contained known masses of FAMEs ranging from 14-24 carbons. The response ratio of each FAME was corrected to a fixed amount ratio for each FAME relative to 17:0. The concentration of individual fatty acid was expressed as the percentage of total fatty acids isolated from ELVs.

Antibodies

Mouse monoclonal antibodies anti-CD9, anti-CD63, anti-HSP90, and rat monoclonal antibody anti-Lamp-1, and polyclonal rabbit anti-calnexin antibodies were obtained from Santa Cruz Biotechnology (CA). The mouse monoclonal antibody anti-Akt and the rabbit
polyclonal anti-phosphorylated Akt was purchased from Cell Signaling Technology (Danvers, MA).

**Western Blotting**

ELVs and cell lysates were separated on SDS-polyacrylamide gels by electrophoresis (Bio-Rad Laboratories, Hercules, CA). Proteins were transferred to polyvinylidene difluoride membranes (Amersham) and blocked with 5% BSA in PBS. Membranes were incubated with a primary antibody overnight at 4°C, followed by washing with TBS-Tween-20. The membrane was subsequently incubated with 1:10,000 fluorescent secondary antibody in blocking solution containing 0.1% Tween-20 and IRDye 800 anti-mouse (Molecular Probes, Rockland Immunochemicals, PA) and Alexa Fluor 700 anti-rabbit (Molecular Probes, OR) probes. Blotted proteins were detected and quantified using an Odyssey infrared imaging system (LI-COR, Lincoln, Nebraska).

**Isolation of leukocytes from liver and adipose tissues**

For isolation of liver leukocytes, the liver was perfused with RPMI 1640 medium, and leukocytes were obtained by homogenizing the organ with a Potter-Elvehjem homogenizer. The homogenate was layered on a 33% (v/v) Percoll solution (Pharmacia Piscataway, NJ) and centrifuged for 20 min at 1200xg. Erythrocytes in the isolated leukocyte suspension were lysed in ACK lysis buffer (0.15 M NH₄Cl, 10 mM KHCO₃, 0.1 mM Na₂EDTA). Cells were adjusted to 2 × 10⁷/ml in FACS staining buffer. For isolation of adipose tissue leukocytes, adipose tissue from wild-type (wt) and ob/ob mice was subjected to collagenase digestion (1 mg collagenase/g adipose tissue) in RPMI 1640
media at 37°C for 1 h. The cell digest was strained through a 200-μm mesh filter and was centrifuged at 500xg for 5 minute. Erythrocytes were lysed by treatment with ACK buffer. Cells were collected and centrifuged at 1,200xg for 5 min. The cell pellets were resuspended in 8 ml of 40% Percoll, pipetted onto 3 ml of a 70% Percoll solution and centrifuged at 2,000xg for 20 min at 22°C. The cells were washed in PBS containing 2% (w/v) BSA and 0.2% (w/v) NaN₃ before staining with fluorescent-conjugated antibodies. The methods used for preparation of peripheral blood samples and bone marrow cells for FACS analysis have been described previously (2).

**Labeling of ELVs and analysis of their target cells in vivo**

ELVs were labeled with the PKH67 green fluorescent dye using a commercially available kit (Sigma-Aldrich) and according to a previously described protocol (3). The efficiency of labeling of the ELVs (>92%) with PKH67 was determined by FACS analysis as described previously (3). B6 male mice fed a high fat diet or standard diet for 3 months starting at 2 months of age were injected i.v. with PKH67-labeled ELVs (30 μg/mouse) obtained from adipose tissues of ob/ob mice or with unlabeled ELVs obtained from the same tissues.

Twenty-four h after injection the mice were sacrificed and the peripheral blood and liver, lymph nodes, and spleen tissues were collected. Single-cell suspensions of each tissue were prepared in RPMI 1640 medium and subjected to FACS analysis. The percentages of cells containing ELVs were determined by counting green fluorescent-positive cells.
Labeling macrophages with fluorescent dyes and macrophage trafficking in vivo

PKH67 and PKH26 kits were used for labeling bone marrow derived macrophages (BMDM) according to the manufacturer's instructions (Sigma). BMDMs were generated from primary cultures of femoral bone marrow from 6- to 8-wk-old female wild-type (wt) mice as described previously (2). In brief, BM cells flushed from the femurs of 6- to 8-wk-old mice were cultured at 37°C in a 5% CO₂ atmosphere in the presence of 20 ng/ml recombinant mouse MCSF (PeproTech). Since ELVs are released from tissues continuously, wtELVs or obELVs (10μg/ml) were repeatedly added to the BM cell culture medium on days 0, 3, 5 and 7. At day 8, FACS sorted F4/80 macrophages pretreated with wtELVs or obELVs were labeled with PKH67 and PKH26, respectively. For tracking labeled macrophage trafficking in vivo, macrophages pretreated with obELVs labeled with PKH26 (red dye) or wt-ELVs labeled with PKH67 (green dye) were mixed in equal numbers (2x10⁶, each) and injected i.v. into B6 mice (5 mice/group) fed a high fat diet over 3 months. The trafficking of injected macrophages was monitored by FACS analysis of labeled macrophages in adipose tissue, liver, spleen and bone marrow.

Bone marrow-derived cell culture and differentiation

Bone marrow cells were isolated from the femurs and tibias of 7-10 week-old mice by flushing the medullary cavity with RPMI medium. After washing, the cells were seeded in tissue culture plates and differentiated into either bone marrow-derived macrophages (BMDMs) or bone marrow-derived dendritic cells (BMDCs). Differentiation into BMDMs or BMDCs was accomplished by suspending the BM cells in RPMI medium
supplemented with 10% low endotoxin FBS and streptomycin/penicillin and containing 20 ng/ml of murine recombinant M-CSF or 20 ng/ml of recombinant GM-CSF, respectively. BMDM and BMDC differentiation was complete 7 days after cell plating; this was confirmed using FACS to detect the expression of CD11b and F4/80, a marker preferentially expressed by mature macrophages, and detection of CD11b and CD11c, a cell surface marker for dendritic cells (data not shown).

Flow cytometric analysis
Prior to flow cytometric analysis, all cells were preincubated with 10 µg/ml anti-CD16/32 antibody (4.2G2, PharMingen, San Diego, CA, USA) at 4°C for 30 min before staining with the following specific antibodies. All antibodies used for FACS analyses, including mouse monoclonal anti-CD11b, anti-ICAM-1, anti-MHCII, and anti-BrdU (E-bioscience); anti-CD204 and anti-F4/80 (AbD Serotec) were purchased. 50 µl of the cell suspension were used for staining with fluorescent antibodies. FITC- or PE-conjugated hamster IgG (PharMingen), rat IgG1 (PharMingen), rat IgG2a (PharMingen and Serotec Ltd., Oxford, UK), and rat IgG2b (PharMingen) served as control antibodies. All antibodies were used at a final concentration of 10 µg/ml. Cells were incubated with the antibodies for 30 min at 4°C and washed with PBS. The samples were fixed with 1% paraformaldehyde/PBS and data acquired with a FACSCalibur (Becton Dickinson) and analyzed with FlowJo or WinMDI software.

ELISA for IL-6, TNF-α, MCSF, IL-10, and anti-ELV exosomes antibody
Cell culture supernatants from a 96-well tissue culture plate and sera harvested from mice were used in an ELISA to detect expression of IL-6, TNF-α, MCSF, and IL-10. Reagents for the
ELISA were purchased from E-Bioscience; the ELISA was done according to the manufacturer's instructions.

Ninety-six well-plates were coated with obELVs (10 µg/ml) in a volume of 100 µl/well of carbonate buffer (pH 9.6) and incubated overnight at 4°C. After 3 washes with PBS, 100 µl/well of blocking solution (PBS containing 0.5% BSA) were added at room temperature for 1 hour. Following 3 washes in PBS, a 2-fold diluted sera collected from mice were added in a final volume of 50 µl and incubated for 1 hour at 37°C. After 3 washes with PBS, the plate was incubated with 100 µl of HRP-conjugated anti-mouse antibody (Pierce) diluted 1:50,000 in blocking solution for 1 hour at room temperature. After the final 3 washes with PBS, the reaction was developed for 15 min, blocked with H_2SO_4 and optical densities were recorded at 450 nm.

**Glucose tolerance and insulin tolerance test**

Mice were injected intravenously with ELVs (30 µg/mouse) every three days for 21 days. After the last injection, following a 16-h fast, baseline blood glucose levels (mg/dl) were determined using 10 µl of tail vein blood and an Accu-Chek Advantage glucose meter and Accu-Chek test strips (Roche). Glucose (2 mg dextrose/g body weight) in sterile PBS was injected intraperitoneally and blood glucose measured 30, 60, 90, 120, 150 and 180 min after injection. Insulin tolerance was conducted using the same glucometer. Mice were fasted for 4 h prior to starting the procedure. After the baseline glucose values were established, mice were given recombinant human insulin (1 U/kg i.p., Eli Lilly). Clearance of plasma glucose was subsequently monitored at the indicated times post-injection.
Glucose uptake assay

C2C12 myocytes were purchased from ATCC and cultured in α-minimal essential medium supplemented with 10% FBS. Once 80% confluency was reached, the C2C12 myocyte culture medium was replaced with conditioned media (CM) from bone marrow precursors cells that had been pretreated at day 0 of culture with wtELVs, obELVs or thymus exosomes (10 µg/ml) in the presence of GM-CSF (20 ng/ml) and conditioned media was harvested at day 14 of the cultures. C2C12 myocytes were incubated for an additional 24 h with BMDM-CM. The cells were then starved for 3 h before being stimulated with insulin (100 nM) for 20 min at 37°C. The cell lysates (50 µg/lane) were used for western blot analysis of Akt activation using a previously described method (4).

To neutralize TNF-α and IL-6 in the conditioned media (CM) before adding the CM to the C2C12 myocyte cultures, the harvested CM was preincubated at 37°C for 1 h with a rat anti-TNF-α (R&D system), a rat anti-IL-6 (R&D System) or with a mixture of both antibodies. The neutralizing dose_{50} for the anti-TNF-α antibody was 0.2 µg/ml in the presence of 0.25 ng/ml of recombinant mouse TNF-α, therefore, 3 µg/ml of anti-TNF-α was used based on the concentration of TNF-α detected in the CM shown in figure 2b., For rat anti-IL-6 antibody 1.0 µg/ml was used based on the neutralizing dose_{50} provided by R&D system., A normal rat IgG at the same concentration as the anti-TNF-α and anti-IL-6 antibodies was used as a control. To assay for glucose uptake, 24 h after treated with CM with/without preincubation with the antibodies as described above, the C2C12 myocyte were serum starved for 3 h in α-minimal essential medium containing 0.5% BSA and then glucose-starved for 30 min in KRP buffer (130 mM NaCl, 5 mM KCl,
1.3 mM MgSO₄, 1.3 mM CaCl₂, and 10 mM Na₂HPO₄, pH 7.4). The cells were stimulated with insulin (100 nM) for 20 min at 37°C; tracer glucose (1,2-³H-2-deoxy-D-glucose, 0.5 μCi) was added for 10 min. Four independent experiments were run. After the 10 min incubation, the C2C12 cells were washed and solubilized in 1 N NaOH and 0.1% SDS. Using a TopCount liquid scintillation counter (Packard-Perkin Elmer), [³H]glucose uptake was detected in 0.1 ml cell lysate mixed with scintillation fluid. Non-specific deoxyglucose uptake was measured in the presence of 60 μM cytochalasin B and was subtracted to yield insulin-specific glucose uptake for each data point.

**Macrophages treated with a recombinant mouse RBP4**

Recombinant mouse RBP4 (R&D, catalog number 3476-LC) was purchased and possible entotoxin contamination was determined using a LAL assay kit (Cambrex Bio Science, Walkersville, MD). All reagents used in this experiment were endotoxin-free based on detection limits of the assay (data not shown). To make control buffer used for diluting RBP4 more comparable with the RBP4, RBP4 protein was dialyzed in a buffer containing 10 mM HEPES buffer, 100 mM NaCl, and the dialysate solution containing no RBP4 was used as a vehicle control for the experiments. The mouse dialysed RBP4 (5 μg/ml) or the dialysate solution at an equal volume as the recombinant mouse RBP4 was used for stimulating BMDMs (1x10⁵/100 μl in RPMI160 medium). The macrophages were cultured in RPMI 1640 medium supplemented with 10% FBS for 24 h. The cell culture supernatants were harvested and assayed for TNF-α and IL-6 using an ELISA. To determine the in vivo effects of a mouse RBP4 on the induction of IL-6 and TNF-α, wild-type B6 mice or TLR4 KO B6 mice were injected I.V. with a mouse RBP4 (250 μg/mouse in 200 ul of PBS). 6 h after the injection, serum levels of IL-6 and TNF-
α were measured using a standard ELISA. To determine whether the cells pretreated with recombinant mouse RBP4 respond to subsequent ELVs RBP4 stimulation, the BMDMs treated with a mouse RBP4 were washed with PBS 3x, and then cultured in the presence of wtELVs or obELVs (10 µg/ml) for an additional 24 h. TNF-α and IL-6 in the supernatants was quantified using an ELISA.

References:
1. Moser HW, and A.B. Moser: Measurement of saturated very long chain fatty acids in plasma. A Laboratory Manual Techniques in Diagnostic Human Biochemical Genetics: , 1991
2. Yu S, Liu C, Su K, Wang J, Liu Y, Zhang L, Li C, Cong Y, Kimberly R, Grizzle WE, Falkson C, Zhang HG: Tumor exosomes inhibit differentiation of bone marrow dendritic cells. J Immunol 178:6867-6875, 2007
3. Liu C, Yu S, Zinn K, Wang J, Zhang L, Jia Y, Kappes JC, Barnes S, Kimberly RP, Grizzle WE, Zhang HG: Murine mammary carcinoma exosomes promote tumor growth by suppression of NK cell function. J Immunol 176:1375-1385, 2006
4. Zhang HG, Wang Y, Xie JF, Liang X, Liu D, Yang P, Hsu HC, Ray RB, Mountz JD: Regulation of tumor necrosis factor alpha-mediated apoptosis of rheumatoid arthritis synovial fibroblasts by the protein kinase Akt. Arthritis Rheum 44:1555-1567, 2001

Supplementary figure legends

Supplementary Figure S1. Characterization of adipose ELVs. (A) Visceral adipose tissues isolated from ob/ob mice and B6 mice fed a high fat diet or regular diet over three months were cultured for 6 h. ELVs were isolated from the supernatants of ex-vivo cultured tissues at 30 min, 3h, and 6 h of culture. The amounts of ELVs released from visceral adipose tissue were quantified using a BCA protein assay kit (Bio-Rad, Hercules, CA). The data are presented as means of three independent experiments with 10 replicas.
**P < 0.01.** (B) Representative electron micrographs of sucrose gradient purified ELVs (magnification, x 80,000; scale bar = 100 nm). (C) Western blot analysis to determine which proteins are enriched in obELVs. 50 µg of obELVs or whole adipose tissue lysates were run on 10% SDS PAGE and immunoblotted with antibodies as indicated on Figure 1B. Results are representative of 3 independent experiments.

**Supplementary Figure S2.** (A) 30 µg of PKH67 labeled or unlabeled obELVs were injected via the tail vein into B6 mice that had been fed a high fat diet for 3 months. 24 h after injection, the mice were sacrificed and peripheral blood and total leukocytes isolated from livers were collected for FACS analysis of PKH67 positive cells (A), or (B) within the gated R1 region, the percentages of PKH67^+CD11b^+F4/80^+ cells were determined. Data are representative of 5 independent experiments performed with 5 mice for each treatment and the means were calculated for each experiment (**, p < 0.01).

**Supplementary Figure S3.** (A) ObELVs or wtELVs (10 µg/ml) were added to the erythrocyte-depleted BM cells at day 0 after the addition of the GM-CSF (20 ng/ml) to the cultures. After 6 days of culture, the cells were analyzed by FACS for the expression of CD11bF4/80. (B) Sorted CD11b^+F4/80^+ cells from the 6-day culture were continuously cultured for an additional 7 days without the addition of GM-CSF, and the proliferation of sorted cells was determined by FACS analysis of BrdU^+CD11b^+F4/80^+ cells. (C) The concentration of MCSF, TNF-α, IL-6, and IL-10 in culture supernatants was determined using an ELISA. Data are the mean ± SEM of 3 experiments with 3 replicates in each experiment (A-C). To determine whether thymus ELVs have similar
effects as obELVs on the differentiation and activation of bone marrow precursor cells, identical protocols as described in S3A-C were used for quantifying percent of CD11b⁺F4/80⁺ cells (D) and cytokine induction (E). Data are the mean ± SEM of 3 experiments with 3 replicates in each experiment (A-E). **P < 0.01.

**Supplementary Figure S4.** To determine the concentration effects of obELVs, bone marrow precursor cells were treated using identical protocols as described in Figure S3 A-C with elevated doses of obELVs from 0 to 100 μg/ml in culture. The production of CD11b⁺F4/80⁺ cells (A), proliferation (B), and induction of IL-6 (C) were quantified. Data are the mean ± SEM of 3 experiments with 3 replicates of each. **P < 0.01.

**Supplementary Figure S5.** To determine the effects of IL-6 and TNF-α released in the CM on glucose uptake and insulin response, TNF-α and IL-6 neutralization assays were carried out by adding anti-TNF-α antibody (3 μg/ml), or anti-IL6 (1 μg/ml) antibody or a mixture of anti-TNF-α and anti-IL6 antibodies or rat IgG served as a control to the CM harvested from bone marrow precursors cells that had been pretreated on day 0 with wtELVs or obELVs (10 μg/ml) in the presence of GM-CSF (20 ng/ml). CM was harvested on day 14 of the cultures. The treated CM was incubated for 1 h at 37 C before adding to C2C12 cell cultures. The glucose uptake and insulin response was determined using identical protocols as described in figure 2B. Data are the mean ± SEM of 3 experiments with 2 replicates of each. *P < 0.05.
Supplementary Figure S6. ObELV-mediated and TLR4-dependent effect on the expression of CD204 of macrophages. BMDMs (5x10^5) were treated with wtELVs or obELVs (10 μg/ml) for 24 h. The expression of CD204 was quantified by FACS analysis. The results represent the mean ± SEM of triplicate cultures, **P < 0.01.

Supplementary Figure S7. BMDMs from wild-type B6 mice were treated with increasing concentrations of a mouse RBP4. The quantity of IL-6 and TNF-α produced was determined from the supernatants of 24-h cultures. The results represent the mean ± SEM of triplicate cultures (A), *p < 0.05, **p < 0.01. 7-week old wild-type B6 mice or TLR4 KO of B6 mice were injected intravenously with a recombinant RBP4 (250 μg/mouse in 200 ul of dialyzed buffer) or dialyzed buffer as a control. 6 h after the injection, peripheral blood was collected from treated mice, and the concentration of IL-6 and TNF-α in the sera was determined using a standard ELISA. Data are given as the means ± SEM obtained for five samples in two independent experiments (B), **, p < 0.001. BMDMs from wild-type B6 mice or NF-κB p50 KO B6 mice were treated with a mouse RBP4 (5 μg/ml) or PBS as a control for 6 h. The supernatants were harvested and IL-6 and TNF-α quantified by ELISA. Data represent the mean ± SEM of five replicate wells (C), **p < 0.01.
Figure S1

A) Bar graph showing the ELVs (μg/g of adipose tissue) over hours after ex vivo culture. The graph compares WtELVs, obELVs, and HFDELVs. There are significant differences at 3 and 6 hours.

B) Images of ObELVS, WtELVs, and HFDELVs at 100 nm scale.

C) Western blot analysis of ObELVs, adipose tissue lysates, showing MW (kDa) for CD9 (27), HSP90 (90), HSP70 (70), CD63 (53), Calnexin (90), and Lamp-1 (120).
Figure S2

A

ObELVs (30 μg/mouse)

Unlabeled labeled

Peripheral blood

Hepatic leukocytes

% PKH67+

0.2
0.4
0.8
1.2

Unlabeled

PKH67 labeled

PKH67 labeled

Figure S2

B

% CD11b F4/80+

0 20 40 60 80 100

Unlabeled

PKH67 labeled

PKH67 labeled

Peripheral blood Hepatic leukocytes

ObELVs (30 μg/mouse)
Figure S3

A

Day after the ELV addition in bone marrow cell cultures

- Day 2
- Day 4

Relative cell number

F4/80

B

ELVs (10 μg/ml)

- PBS
- Wild-type
- Ob

% BrdU+CD11b+F4/80+ cells

F4/80

C

Cytokine (ng/ml)

- MCSF
- TNF-α
- IL-6
- IL-10

ELVs (10 μg/ml)

- Ob
- Wild-type

** **
Figure S3

D

ELVs (10 μg/ml)

% CD11b + F4/80+ cells

Days after culture

E

ELVs (10 μg/ml)

Cytokine (ng/ml)

Days after culture

Figure S3
**Figure S4**

A) % CD11b + F4/80+ cells

B) % BrdU+CD11b+F4/80+ cells

C) IL-6 (ng/ml)
Figure S5

DG uptake (% increase over basal)

D-glucose (DG)

DG → Insulin

Anti-TNF-α

Anti-IL-6

Anti-TNF-α + anti-IL-6

Figure S5
**Figure S6**

**obELVs (10 μg/ml)**

|               | Wild-type | Ob |
|---------------|-----------|----|
| Wild-type     |           |    |
| TLR2 KO       |           |    |
| TLR4 KO       |           |    |

**Relative cell number**

**ELVs (10 μg/ml)**

- **Wild-type**
- **Ob**

**% F4/80^+^CD204^+^ cells**

- **Wt**
- **TLR2 KO**
- **TLR4 KO**
Figure S7A
Figure S7B

Cytokine in sera (pg/ml)

Wild-type

TLR4 KO

IL-6

TNF-α

Figure S7B
Figure S7C
Table 1. Possible biological roles of proteins identified in adipose exosomes-like vesicles

1. Metabolic process

| Accession No            | Identified protein                                                                 | ob | HFD | wt |
|-------------------------|-----------------------------------------------------------------------------------|----|-----|----|
| UniRef100_O35083         | 1-acylglycerol-3-phosphate O-acyltransferase 1                                    | +  | +   | +  |
| UniRef100_Q8K3K7         | 1-acylglycerol-3-phosphate O-acyltransferase 2                                    | +  | +   | +  |
| UniRef100_Q8C0N2         | 1-acylglycerol-3-phosphate O-acyltransferase 9                                    | +  | +   | +  |
| UniRef100_Q9CQ62         | 2,4-dienoyl CoA reductase 1, mitochondrial                                       | +  | +   | -  |
| UniRef100_Q3THN2         | 2-deoxyribose-5-phosphate aldolase homolog (C. elegans)                           | +  | +   | +  |
| UniRef100_Q3TDRO         | 3-ketodihydrospHINGosine reductase                                                | +  | +   | +  |
| UniRef100_Q61753         | 3-phosphoglycerate dehydrogenase                                                  | +  | +   | -  |
| UniRef100_Q922Z5         | abhydrolase domain containing 5                                                   | +  | +   | +  |
| UniRef100_Q3TQP7         | acetyl-Coenzyme A acetyltransferase 1                                             | +  | +   | +  |
| UniRef100_Q3UPU8         | acetyl-Coenzyme A acyltransferase 1A; acetyl-Coenzyme A acyltransferase 1B        | +  | +   | -  |
| UniRef100_Q5SWU9         | acetyl-Coenzyme A carboxylase alpha                                               | +  | +   | -  |
| UniRef100_Q99KI0         | aconitase 2, mitochondrial                                                        | -  | +   | -  |
| UniRef100_P41216         | acyl-CoA synthetase long-chain family member 1                                    | +  | +   | +  |
| UniRef100_Q3UKSO         | acyl-CoA synthetase long-chain family member 5                                    | +  | +   | +  |
| UniRef100_P51174         | acyl-Coenzyme A dehydrogenase, long-chain                                         | +  | +   | -  |
| UniRef100_Q07417         | acyl-Coenzyme A dehydrogenase, short chain                                       | +  | +   | +  |
| UniRef100_Q3THT3         | adenylate kinase 2                                                                | -  | +   | -  |
| UniRef100_Q60994         | adiponectin, C1Q and collagen domain containing                                   | +  | +   | +  |
| UniRef100_P00329         | alcohol dehydrogenase 1 (class I)                                                | +  | +   | +  |
| UniRef100_Q8CIF2         | aldehyde dehydrogenase 1 family, member L1                                        | +  | +   | +  |
| UniRef100_Q57119         | aldehyde dehydrogenase 16 family, member A1                                       | +  | +   | +  |
| UniRef100_P47738         | aldehyde dehydrogenase 2, mitochondrial                                          | +  | +   | +  |
| UniRef100_ID | Gene Name                                          | Description                                           | +  | +  | +  |
|--------------|----------------------------------------------------|-------------------------------------------------------|----|----|----|
| Q80VQ0       | aldehyde dehydrogenase 3 family, member B1         |                                                       |    |    |    |
| P47740       | aldehyde dehydrogenase family 3, subfamily A2      |                                                       |    |    |    |
| P05064       | aldolase 1, A isoform                              |                                                       |    |    |    |
| A1A4T2       | alpha glucosidase 2 alpha neutral subunit          |                                                       |    |    |    |
| O70423       | amine oxidase, copper containing 3                 |                                                       |    |    |    |
| O08739       | AMP deaminase 3                                    |                                                       |    |    |    |
| P09470       | angiotensin I converting enzyme (peptidyl-dipeptidase A) |                                                       |    |    |    |
| O08855       | apolipoprotein A-I                                 |                                                       |    |    |    |
| A0AUP0       | apolipoprotein A-IV                                |                                                       |    |    |    |
| P08226       | apolipoprotein E                                   |                                                       |    |    |    |
| Q8BUE4       | apoptosis-inducing factor, mitochondrion-associated 2 |                                                       |    |    |    |
| Q3TED3       | ATP citrate lyase                                   |                                                       |    |    |    |
| P56480       | ATP synthase, H+ transporting mitochondrial F1 complex, beta subunit |                                                       |    |    |    |
| Q03265       | ATP synthase, H+ transporting, mitochondrial F1 complex, |                                                       |    |    |    |
| Q69Z96       | ATPase type 13A1                                   |                                                       |    |    |    |
| Q8R429       | ATPase, Ca++ transporting, cardiac muscle, fast twitch 1 |                                                       |    |    |    |
| O55143       | ATPase, Ca++ transporting, cardiac muscle, slow twitch 2 |                                                       |    |    |    |
| Q70228       | ATPase, class II, type 9A                          |                                                       |    |    |    |
| P50516       | ATPase, H+ transporting, lysosomal V1 subunit A     |                                                       |    |    |    |
| P62814       | ATPase, H+ transporting, lysosomal V1 subunit B2; ATPase, H transporting, lysosomal V1 subunit B2 |                                                       |    |    |    |
| Q3TXF9       | ATPase, Na+/K+ transporting, alpha 1 polypeptide   |                                                       |    |    |    |
| Q6P1E5       | ATPase, Na+/K+ transporting, alpha 2 polypeptide    |                                                       |    |    |    |
| Q8C1F4       | biotinidase                                        |                                                       |    |    |    |
| P16015       | carbonic anhydrase 3                               |                                                       |    |    |    |
| Q3U3I1       | carbonic anhydrase 4                               |                                                       |    |    |    |
| UniRef100_ID       | Description                                                                 | +  | +  | +  |
|-------------------|------------------------------------------------------------------------------|----|----|----|
| UniRef100_Q8VCT4  | carboxylesterase 3                                                          | +  | +  | +  |
| UniRef100_P24270  | catalase                                                                     | +  | +  | +  |
| UniRef100_P49817  | caveolin, caveolae protein 1                                                | +  | +  | +  |
| UniRef100_P80314  | chaperonin subunit 2 (beta)                                                 | +  | +  | +  |
| UniRef100_P80318  | chaperonin subunit 3 (gamma)                                                | +  | +  | +  |
| UniRef100_P80315  | chaperonin subunit 4 (delta)                                                | +  | +  | +  |
| UniRef100_P80316  | chaperonin subunit 5 (epsilon)                                              | +  | +  | +  |
| UniRef100_P80317  | chaperonin subunit 6a (zeta)                                                | +  | +  | +  |
| UniRef100_Q3THH8  | chaperonin subunit 7 (eta)                                                  | +  | +  | +  |
| UniRef100_P42932  | chaperonin subunit 8 (theta)                                                | +  | +  | +  |
| UniRef100_Q922Q9  | chitinase domain containing 1                                               | +  | +  | +  |
| UniRef100_Q3TLJ6  | coenzyme Q3 homolog, methyltransferase (yeast)                              | +  | +  | +  |
| UniRef100_P07310  | creatine kinase, muscle                                                     | +  | +  | +  |
| UniRef100_Q9CXR1  | dehydrogenase/reductase (SDR family) member 7                               | +  | +  | +  |
| UniRef100_P53395  | dihydrolipoamide branched chain transacylase E2                            | +  | +  | +  |
| UniRef100_Q8BMF4  | dihydrolipoamide S-acetyltransferase (E2 component of pyruvate dehydrogenase complex) | +  | +  | +  |
| UniRef100_Q9D2G2  | dihydrolipoamide S-succinyltransferase (E2 component of 2-oxo-glutarate complex) | +  | +  | +  |
| UniRef100_Q148B3  | ectonucleotide pyrophosphatase/phosphodiesterase 3                         | +  | +  | +  |
| UniRef100_Q9CZX0  | elongation protein 3 homolog (S. cerevisiae)                               | +  | +  | +  |
| UniRef100_Q3TYW7  | eukaryotic translation initiation factor 2B, subunit 4 delta                | +  | +  | +  |
| UniRef100_Q6IQY1  | fatty acid desaturase 3                                                     | +  | +  | -  |
| UniRef100_P19096  | fatty acid synthase                                                          | +  | +  | +  |
| UniRef100_Q8K2I3  | flavin containing monooxygenase 2                                            | +  | +  | +  |
| UniRef100_Q8BZW3  | galactosidase, beta 1-like 2                                                | +  | +  | +  |
| UniRef100_P06745  | glucose phosphate isomerase 1                                              | +  | +  | +  |
| UniRef100   | Description                                                                 | + | + | + |
|------------|----------------------------------------------------------------------------|---|---|---|
| P15105     | glutamate-ammonia ligase (glutamine synthetase)                             |   |   |   |
| P47856     | glutamine fructose-6-phosphate transaminase 1                               |   |   |   |
| O09131     | glutathione S-transferase omega 1                                           |   |   |   |
| P13707     | glycerol-3-phosphate dehydrogenase 1 (soluble)                             |   |   |   |
| Q3TAV1     | glycoprotein (transmembrane) nmb                                            |   |   |   |
| Q9CY27     | glycoprotein, synaptic 2                                                   |   |   |   |
| A2A607     | GNAS (guanine nucleotide binding protein, alpha stimulating) complex locus  |   |   |   |
| P29416     | hexosaminidase A                                                           |   |   |   |
| A2A7A7     | hexose-6-phosphate dehydrogenase (glucose 1-dehydrogenase)                 |   |   | - |
| Q61425     | hydroxyacyl-Coenzyme A dehydrogenase                                        |   |   |   |
| Q5U5Y5     | hydroxyacyl-Coenzyme A dehydrogenase/3-ketoacyl-Coenzyme A thiolase/enoyl-Coenzyme A hydratase (trifunctional protein), alpha subunit |   |   | - |
| Q99JY0     | hydroxyacyl-Coenzyme A dehydrogenase/3-ketoacyl-Coenzyme A thiolase/enoyl-Coenzyme A hydratase (trifunctional protein), beta subunit |   |   | - |
| O70503     | hydroxysteroid (17-beta) dehydrogenase 12                                  |   |   | - |
| P51660     | hydroxysteroid (17-beta) dehydrogenase 4                                   |   |   |   |
| O88736     | hydroxysteroid (17-beta) dehydrogenase 7                                   |   |   | - |
| P50172     | hydroxysteroid 11-beta dehydrogenase 1                                     |   |   | - |
| Q91VA7     | isocitrate dehydrogenase 3 (NAD+) beta                                     |   |   | - |
| P06151     | lactate dehydrogenase A                                                   |   |   |   |
| Q8BLN5     | lanosterol synthase                                                        |   |   |   |
| Q3TTA8     | leucyl/cystinyl aminopeptidase                                              |   |   |   |
| P54310     | lipase, hormone sensitive                                                  |   |   |   |
| P11152     | lipoprotein lipase; similar to Lipoprotein lipase precursor (LPL)          |   |   |   |
| Q3UZK0     | lysophosphatidylglycerol acyltransferase 1                                 |   |   |   |
| P08249     | malate dehydrogenase 2, NAD (mitochondrial)                               |   |   |   |
| UniRef100_P45700 | mannosidase 1, alpha | + | + | + |
| UniRef100_P27046 | mannosidase 2, alpha 1 | + | + | + |
| UniRef100_Q3TBQ3 | mannosidase, alpha, class 2C, member 1 | + | + | + |
| UniRef100_Q80W94 | monoacylglycerol O-acyltransferase 2 | + | + | + |
| UniRef100_Q9CTZ0 | muscle glycogen phosphorylase | + | + | + |
| UniRef100_Q7TPY3 | NAD(P) dependent steroid dehydrogenase-like | + | + | + |
| UniRef100_Q60597 | oxoglutarate dehydrogenase (lipoamide) | + | + | + |
| UniRef100_Q8BJ56 | patatin-like phospholipase domain containing 2 | + | + | + |
| UniRef100_Q4V9U2 | perilipin | - | - | + |
| UniRef100_Q3UAG2 | phosphogluconate dehydrogenase | + | + | + |
| UniRef100_O70250 | phosphoglycerate mutase 2 | + | + | + |
| UniRef100_Q3UWT7 | phospholipase D1 | + | + | - |
| UniRef100_Q3TI27 | phosphoribosyl pyrophosphate synthetase 1 | + | + | + |
| UniRef100_Q8C5R8 | phosphoribosyl pyrophosphate synthetase 1-like 1 | + | + | + |
| UniRef100_Q8BK29 | phosphoribosyl pyrophosphate synthetase-associated protein 1 | + | + | + |
| UniRef100_Q8BK37 | phosphoribosyl pyrophosphate synthetase-associated protein 2 | + | + | + |
| UniRef100_A2AI87 | phosphorylase kinase alpha 1 | + | + | + |
| UniRef100_Q3UV76 | phosphorylase kinase beta | + | + | + |
| UniRef100_Q3TF18 | poly (ADP-ribose) polymerase family, member 1 | + | + | + |
| UniRef100_Q9R0E1 | procollagen-lysine, 2-oxoglutarate 5-dioxygenase 3 | + | + | + |
| UniRef100_P31324 | protein kinase, cAMP dependent regulatory, type II beta | + | + | + |
| UniRef100_Q05920 | pyruvate carboxylase | + | + | + |
| UniRef100_Q9D051 | pyruvate dehydrogenase (lipoamide) beta | + | + | + |
| UniRef100_Q8BKZ9 | pyruvate dehydrogenase complex, component X | + | + | + |
| UniRef100_P49194 | Retinoid binding protein 4 | + | + | - |
| UniRef100_Q9QYF1 | retinol dehydrogenase 11 | + | + | + |
|------------------|--------------------------|---|---|---|
| UniRef100_Q149J8 | retinol saturase (all trans retinol 13,14 reductase) | - | - | + |
| UniRef100_Q8BVA5 | RIKEN cDNA 1110057K04 gene | + | + | + |
| UniRef100_Q3TN26 | solute carrier family 27 (fatty acid transporter), member 1 | + | + | + |
| UniRef100_P10852 | solute carrier family 3 (activators of dibasic and neutral amino acid transport), member 2 | + | + | + |
| UniRef100_Q3UDJ2 | sphingosine phosphate lyase 1 | + | + | - |
| UniRef100_P13011 | stearoyl-Coenzyme A desaturase 2 | + | + | + |
| UniRef100_P50427 | steroid sulfatase | + | + | + |
| UniRef100_O09164 | superoxide dismutase 3, extracellular | + | + | + |
| UniRef100_P11983 | t-complex protein 1 | + | + | + |
| UniRef100_Q64511 | topoisomerase (DNA) II beta | + | + | + |
| UniRef100_Q6ZQM8 | UDP glucuronosyltransferase 1 family, polypeptide A7C | + | + | + |
| UniRef100_Q3TXD3 | vesicle amine transport protein 1 homolog (T californica) | + | + | + |

### 2. Protein transport

| UniRef100_P17426 | adaptor protein complex AP-2, alpha 1 subunit | + | + | + |
|------------------|-----------------------------------------------|---|---|---|
| UniRef100_P17427 | adaptor protein complex AP-2, alpha 2 subunit | + | + | + |
| UniRef100_Q6A0C9 | adaptor protein complex AP-2, mu1 | + | + | + |
| UniRef100_Q5SWR1 | adaptor-related protein complex 2, beta 1 subunit | + | + | + |
| UniRef100_O54774 | adaptor-related protein complex 3, delta 1 subunit | + | + | + |
| UniRef100_Q99K28 | ADP-ribosylation factor GTPase activating protein 2 | + | + | + |
| UniRef100_Q5XJY5 | archain 1 | + | + | - |
| UniRef100_A2ALM8 | B-cell receptor-associated protein 31 | + | + | + |
| UniRef100_Q68FD5 | clathrin, heavy polypeptide (Hc) | + | + | + |
| UniRef100_O08585 | clathrin, light polypeptide (Lc) | + | + | + |
| UniRef100 ID   | Description                                                                 | Stability | Localization | Function                  |
|---------------|----------------------------------------------------------------------------|-----------|--------------|---------------------------|
| UniRef100_Q63ZW9 | coatamer protein complex subunit alpha                                      | +         | +            | +                         |
| UniRef100_Q3UE02 | coatamer protein complex, subunit beta 1                                   | +         | +            | +                         |
| UniRef100_O55029 | coatamer protein complex, subunit beta 2 (beta prime)                       | +         | +            | +                         |
| UniRef100_O89079 | coatamer protein complex, subunit epsilon                                    | +         | +            | +                         |
| UniRef100_Q8BP96 | coatamer protein complex, subunit gamma                                      | +         | +            | +                         |
| UniRef100_Q3UGB8 | Der1-like domain family, member 1                                           | +         | +            | -                         |
| UniRef100_Q9D4H1 | exocyst complex component 2                                                 | +         | +            | +                         |
| UniRef100_Q9CR60 | golgi transport 1 homolog B (S. cerevisiae)                                 | +         | +            | +                         |
| UniRef100_Q3TIY6 | guanosine diphosphate (GDP) dissociation inhibitor 2                        | +         | +            | +                         |
| UniRef100_P70168 | karyopherin (importin) beta 1                                               | +         | +            | +                         |
| UniRef100_Q8BJL4 | lectin, mannose-binding 2                                                   | +         | +            | +                         |
| UniRef100_Q3U944 | lectin, mannose-binding, 1                                                  | +         | +            | +                         |
| UniRef100_P24668 | mannose-6-phosphate receptor, cation dependent                              | +         | +            | +                         |
| UniRef100_Q64331 | myosin VI                                                                   | +         | +            | +                         |
| UniRef100_Q9DB05 | N-ethylmaleimide sensitive fusion protein attachment protein alpha          | +         | +            | +                         |
| UniRef100_Q8C1T5 | N-ethylmaleimide sensitive fusion protein attachment protein gamma          | +         | +            | +                         |
| UniRef100_Q3UB66 | RAB1, member RAS oncogene family                                            | +         | +            | +                         |
| UniRef100_Q3U621 | RAB10, member RAS oncogene family                                           | +         | +            | +                         |
| UniRef100_P46638 | RAB11B, member RAS oncogene family                                          | +         | +            | +                         |
| UniRef100_Q50HW9 | RAB14, member RAS oncogene family                                           | +         | +            | -                         |
| UniRef100_P35293 | RAB18, member RAS oncogene family                                           | +         | +            | -                         |
| UniRef100_Q9D1G1 | RAB1B, member RAS oncogene family                                           | -         | -            | +                         |
| UniRef100_P35278 | RAB5C, member RAS oncogene family                                           | +         | +            | +                         |
| UniRef100_P55258 | RAB8A, member RAS oncogene family                                           | +         | +            | +                         |
| UniRef100_P61028 | RAB8B, member RAS oncogene family                                           | +         | +            | +                         |
| UniRef100_A2AVJ7 | ribosome binding protein 1 | +  | +  | +  |
| UniRef100_Q6ZQ26 | sec1 family domain containing 1 | +  | +  | +  |
| UniRef100_Q3UZ06 | SEC22 vesicle trafficking protein homolog B (S. cerevisiae) | +  | +  | +  |
| UniRef100_Q01405 | SEC23A (S. cerevisiae) | +  | +  | +  |
| UniRef100_A2AA71 | SEC24 related gene family, member A (S. cerevisiae) | +  | +  | +  |
| UniRef100_Q3U882 | SEC24 related gene family, member B (S. cerevisiae) | +  | +  | +  |
| UniRef100_Q3UY11 | secretory carrier membrane protein 1 | +  | +  | +  |
| UniRef100_O35609 | secretory carrier membrane protein 3 | +  | +  | +  |
| UniRef100_O09044 | synaptosomal-associated protein 23 | +  | +  | +  |
| UniRef100_Q3TDG9 | syntaxin 12 | +  | +  | +  |
| UniRef100_Q0VGN4 | syntaxin 16 | +  | +  | -  |
| UniRef100_P70452 | syntaxin 4A (placental) | +  | +  | -  |
| UniRef100_O70439 | syntaxin 7 | +  | +  | +  |
| UniRef100_O88983 | syntaxin 8 | +  | +  | +  |
| UniRef100_Q5SVW9 | transmembrane emp24 protein transport domain containing 4 | +  | +  | +  |
| UniRef100_Q9D1D4 | transmembrane emp24-like trafficking protein 10 (yeast) | +  | +  | -  |
| UniRef100_Q3TJ43 | vacuolar protein sorting 35 | +  | +  | +  |
| UniRef100_P97390 | vacuolar protein sorting 45 (yeast) | +  | +  | +  |

3. Electron carrier

| UniRef100_P51174 | acyl-Coenzyme A dehydrogenase, long-chain | +  | +  | -  |
| UniRef100_Q07417 | acyl-Coenzyme A dehydrogenase, short chain | +  | +  | +  |
| UniRef100_Q8BUE4 | apoptosis-inducing factor, mitochondrion-associated 2 | +  | +  | +  |
| UniRef100_Q9CY59 | cytochrome b5 reductase 3 | +  | +  | +  |
| UniRef100_O08749 | dihydrolipoamide dehydrogenase | +  | +  | +  |
| UniRef100_Q99LC5 | electron transferring flavoprotein, alpha polypeptide | +  | +  | +  |
| UniRef100_P50285 | flavin containing monooxygenase 1 | + | + | + |
|------------------|----------------------------------|---|---|---|
| UniRef100_Q14CG9 | monoamine oxidase B | + | + | + |
| UniRef100_Q3TIU7 | NADH dehydrogenase (ubiquinone) Fe-S protein 1 | + | + | + |
| UniRef100_Q9DCT2 | NADH dehydrogenase (ubiquinone) Fe-S protein 3 | + | + | + |
| UniRef100_P37040 | P450 (cytochrome) oxidoreductase | + | + | - |
| UniRef100_Q3TVT6 | prenylcysteine oxidase 1 | + | + | - |
| UniRef100_A2ASQ2 | prostaglandin E synthase 2 | + | + | - |
| UniRef100_Q8BKZ9 | pyruvate dehydrogenase complex, component X | + | + | + |
| UniRef100_Q149J8 | retinol saturase (all trans retinol 13,14 reductase) | - | - | + |
| UniRef100_Q9D710 | similar to thioredoxin-related transmembrane protein 2; predicted gene, EG433144; thioredoxin domain containing 14 | + | + | - |
| UniRef100_Q8K2B3 | succinate dehydrogenase complex, subunit A, flavoprotein (Fp) | + | + | + |
| UniRef100_Q3TE45 | succinate dehydrogenase complex, subunit B, iron sulfur (Ip) | + | + | + |

4. Signal transduction

| UniRef100_Q9WTQ5 | A kinase (PRKA) anchor protein (gravin) 12 | + | + | + |
|------------------|-------------------------------------------|---|---|---|
| UniRef100_Q60994 | adiponectin, C1Q and collagen domain containing | + | + | + |
| UniRef100_P10107 | annexin A1 | + | + | + |
| UniRef100_P49817 | caveolin, caveolae protein 1 | + | + | |
| UniRef100_Q5DY47 | dedicator of cyto-kinesis 2 | + | + | |
| UniRef100_Q8R1Q8 | dynein cytoplasmic 1 light intermediate chain 1 | + | + | |
| UniRef100_Q571D6 | engulfment and cell motility 1, ced-12 homolog (C. elegans) | + | + | |
| UniRef100_Q8K0E8 | fibrinogen, B beta polypeptide | + | + | |
| UniRef100_Q3UER8 | fibrinogen, gamma polypeptide | + | + | |
| UniRef100_A2A607 | GNAS (guanine nucleotide binding protein, alpha stimulating) complex locus | + | + | |
| UniRef100_Q3TXK7 | guanine nucleotide binding protein (G protein), alpha inhibiting 2 | + | + | - |
| UniRef100  | Protein Name                                                                 | UniRef100  | Protein Name                                                                 |
|------------|------------------------------------------------------------------------------|------------|------------------------------------------------------------------------------|
| P39601     | guanine nucleotide binding protein (G protein), beta 1                        | P27601     | guanine nucleotide binding protein, alpha 13                                 |
| P18872     | guanine nucleotide binding protein, alpha O                                    | P21279     | guanine nucleotide binding protein, alpha q polypeptide                        |
| Q3TIY6     | guanosine diphosphate (GDP) dissociation inhibitor 2                          | P10833     | Harvey rat sarcoma oncogene, subgroup R                                      |
| P05CQ4     | IQ motif containing GTPase activating protein 1                                | P08556     | neuroblastoma ras oncogene                                                    |
| P3V2V2     | prohibitin 2                                                                  | P31324     | protein kinase, cAMP dependent regulatory, type II beta                       |
| Q3UB66     | RAB1, member RAS oncogene family                                              | Q3U621     | RAB10, member RAS oncogene family                                             |
| P46638     | RAB11B, member RAS oncogene family                                            | P35293     | RAB18, member RAS oncogene family                                             |
| Q50HW9     | RAB14, member RAS oncogene family                                             | Q9D1G1     | RAB1B, member RAS oncogene family                                             |
| P35278     | RAB5C, member RAS oncogene family                                             | P35278     | RAB5C, member RAS oncogene family                                             |
| P55258     | RAB8A, member RAS oncogene family                                             | P61028     | RAB8B, member RAS oncogene family                                             |
| Q3TN61     | ras homolog gene family, member A                                              | Q3TLP8     | RAS-related C3 botulinum substrate 1                                          |
| Q3TL08     | RAS-related C3 botulinum substrate 1                                          | Q05144     | RAS-related C3 botulinum substrate 2                                          |
| Q5A3U8     | RAS-related protein-1a                                                        | Q3U7U8     | RAS-related protein-1a                                                        |
| P63321     | v-ral simian leukemia viral oncogene homolog A (ras related)                  |            |                                                                               |
| 5. Ion transport | UniRef100_P14824 | annexin A6 | + | + | + |
|-----------------|-----------------|------------|---|---|---|
| UniRef100_O54984 | arsA (bacterial) arsenite transporter, ATP-binding, homolog 1 | + | + | + |
| UniRef100_P56480 | ATP synthase, H+ transporting mitochondrial F1 complex, beta subunit | + | + | + |
| UniRef100_Q3TJD4 | ATP synthase, H+ transporting, mitochondrial F0 complex, subunit b, isoform 1 | + | + | + |
| UniRef100_Q03265 | ATP synthase, H+ transporting, mitochondrial F1 complex, alpha subunit, isoform 1 | + | + | + |
| UniRef100_Q91VR2 | ATP synthase, H+ transporting, mitochondrial F1 complex, gamma polypeptide 1 | + | + | + |
| UniRef100_Q69Z96 | ATPase type 13A1 | + | + | + |
| UniRef100_Q8R429 | ATPase, Ca++ transporting, cardiac muscle, fast twitch 1 | + | + | - |
| UniRef100_O55143 | ATPase, Ca++ transporting, cardiac muscle, slow twitch 2 | + | + | + |
| UniRef100_Q05CJ5 | ATPase, Ca++ transporting, plasma membrane 1 | + | + | + |
| UniRef100_A2A5A0 | ATPase, H+ transporting, lysosomal V0 subunit A1 | + | + | - |
| UniRef100_P51863 | ATPase, H+ transporting, lysosomal V0 subunit D1 | + | + | - |
| UniRef100_Q805Y3 | ATPase, H+ transporting, lysosomal V0 subunit D2 | + | + | + |
| UniRef100_P50516 | ATPase, H+ transporting, lysosomal V1 subunit A | + | + | + |
| UniRef100_P62814 | ATPase, H+ transporting, lysosomal V1 subunit B2; ATPase, H transporting, lysosomal V1 subunit B2 | + | + | + |
| UniRef100_Q3TG21 | ATPase, H+ transporting, lysosomal V1 subunit C1 | + | + | - |
| UniRef100_Q8BVE3 | ATPase, H+ transporting, lysosomal V1 subunit H | + | + | + |
| UniRef100_Q3TXTF9 | ATPase, Na+/K+ transporting, alpha 1 polypeptide | + | + | + |
| UniRef100_Q6PIE5 | ATPase, Na+/K+ transporting, alpha 2 polypeptide | + | + | + |
| UniRef100_P97370 | ATPase, Na+/K+ transporting, beta 3 polypeptide | + | + | + |
| UniRef100_A3KPC9 | calcium channel, voltage-dependent, L type, alpha 1S subunit | + | + | + |
| UniRef100_P49817 | caveolin, caveolae protein 1 | + | + | + |
| UniRef100_Q61147 | ceruloplasmin | + | + | - |
| UniRef100_P09528 | ferritin heavy chain 1 | + | + | + |
| UniRef100_P29391 | ferritin light chain 1 | + | + | + |
| UniRef100 Accession | Protein Name and Description | Coefficient 1 | Coefficient 2 | Coefficient 3 |
|---------------------|-----------------------------|---------------|---------------|---------------|
| UniRef100_Q6WVG3     | potassium channel tetramerisation domain containing 12 | +             | +             | +             |
| UniRef100_Q99JR1     | sideroflexin 1              | +             | +             | +             |
| UniRef100_P04919     | solute carrier family 4 (anion exchanger), member 1 | +             | +             | +             |
| UniRef100_P70302     | stromal interaction molecule 1 | +             | +             | -             |
| UniRef100_Q92111     | transferrin                 | +             | +             | -             |
| UniRef100_P50518     | VATPase, H+ transporting, lysosomal V1 subunit E1 | +             | +             | +             |
| UniRef100_Q3THL7     | voltage-dependent anion channel 1 | +             | +             | +             |
| UniRef100_Q3TTN3     | voltage-dependent anion channel 3 | +             | +             | +             |

6. Cell adhesion

| UniRef100 Accession | Protein Name and Description | Coefficient 1 | Coefficient 2 | Coefficient 3 |
|---------------------|-----------------------------|---------------|---------------|---------------|
| UniRef100_O70423    | amine oxidase, copper containing 3 | +             | +             | +             |
| UniRef100_P56480    | ATP synthase, H+ transporting mitochondrial F1 complex, beta subunit | +             | +             | +             |
| UniRef100_Q08857    | CD36 antigen                | +             | +             | -             |
| UniRef100_Q61735    | CD47 antigen (Rh-related antigen, integrin-associated signal transducer) | +             | +             | +             |
| UniRef100_P40240    | CD9 antigen                 | +             | +             | +             |
| UniRef100_Q04857    | collagen, type VI, alpha 1  | +             | +             | +             |
| UniRef100_Q02788    | collagen, type VI, alpha 2  | +             | +             | +             |
| UniRef100_Q80X19    | collagen, type XIV, alpha 1 | +             | +             | +             |
| UniRef100_P70412    | CUB and zona pellucida-like domains 1 | +             | +             | +             |
| UniRef100_Q3UMA4     | fermitin family homolog 2 (Drosophila) | +             | +             | -             |
| UniRef100_P11276     | fibronectin 1               | +             | +             | -             |
| UniRef100_Q3TAV1     | glycoprotein (transmembrane) nmb | +             | +             | +             |
| UniRef100_P09055     | integrin beta 1 (fibronectin receptor beta) | +             | +             | +             |
| UniRef100_P02469     | laminin B1 subunit 1        | +             | +             | +             |
| UniRef100_Q60675     | laminin, alpha 2            | +             | +             | +             |
| UniRef100_P97927     | laminin, alpha 4            | +             | +             | +             |
| UniRef100 ID         | Description                                           | Value |
|----------------------|-------------------------------------------------------|-------|
| UniRef100_Q61292     | laminin, beta 2                                       | +     |
| UniRef100_P02468     | laminin, gamma 1                                      | +     |
| UniRef100_Q3UNG0      | laminin, gamma 1                                      | +     |
| UniRef100_Q8R2Y2      | melanoma cell adhesion molecule                       | +     |
| UniRef100_Q3U8S9      | milk fat globule-EGF factor 8 protein                 | +     |
| UniRef100_Q5XKE0      | myosin binding protein C, fast-type                   | +     |
| UniRef100_Q3UHT9      | myosin, heavy polypeptide 9, non-muscle               | +     |
| UniRef100_P10493      | nidogen 1                                             | +     |
| UniRef100_Q3U4U1      | periostin, osteoblast specific factor                  | +     |
| UniRef100_Q05793      | perlecan (heparan sulfate proteoglycan 2)             | +     |
| UniRef100_A6H585      | predicted gene, EG665033                              | +     |
| UniRef100_A6H584      | predicted gene, EG665033                              | +     |
| UniRef100_Q3TN61      | ras homolog gene family, member A                     | +     |
| UniRef100_Q3TLP8      | RAS-related C3 botulinum substrate 1                  | +     |
| UniRef100_A6H588      | RIKEN cDNA E330026B02 gene                            | +     |
| UniRef100_O35114      | scavenger receptor class B, member 2                  | +     |
| UniRef100_Q3TLV2      | transglutaminase 2, C polypeptide                     | +     |

### 7. Apoptosis

| UniRef100 ID         | Description                                           | Value |
|----------------------|-------------------------------------------------------|-------|
| UniRef100_Q8BUE4     | apoptosis-inducing factor, mitochondrion-associated 2 | +     |
| UniRef100_O88738     | baculoviral IAP repeat-containing 6                   | +     |
| UniRef100_A2ALM8      | B-cell receptor-associated protein 31                 | +     |
| UniRef100_P59017      | BCL2-like 13 (apoptosis facilitator)                  | +     |
| UniRef100_O35864      | COP9 signalosome complex subunit 5                    | +     |
| UniRef100_Q571D6      | engulfment and cell motility 1, ced-12 homolog (C. elegans) | +     |
| UniRef100_P10126      | eukaryotic translation elongation factor 1 alpha 1    | +     |
| UniRef100_ID | Description                                                                 | Score |
|--------------|-----------------------------------------------------------------------------|-------|
| Q3TIN2       | glutaminyl-tRNA synthetase                                                  | +     |
| Q8C3K0       | lectin, galactose binding, soluble 12                                       | +     |
| P12813       | nuclear receptor subfamily 4, group A, member 1                             | +     |
| P63028       | predicted gene, OTTMUSG00000016691; similar to tumor protein, translationally-controlled 1; tumor protein, translationally-controlled 1 | +     |
| P12815       | programmed cell death 6                                                    | +     |
| P67778       | prohibitin                                                                 | +     |
| P27773       | protein disulfide isomerase associated 3                                    | +     |
| Q9WTX2       | protein kinase, interferon inducible double stranded RNA dependent activator | +     |
| O35295       | purine rich element binding protein B                                       | +     |
| Q3TN61       | ras homolog gene family, member A                                          | +     |
| Q9ES97       | reticulin 3                                                                | +     |
| Q8BH78       | reticulin 4                                                                | +     |
| P42669       | similar to hCG45299; purine rich element binding protein A                  | +     |
| Q3UDJ2       | sphingosine phosphate lyase 1                                              | +     |
| Q3THL7       | voltage-dependent anion channel 1                                          | +     |

8. Vesicle-mediated transport

| UniRef100_ID | Description                                                                 | Score |
|--------------|-----------------------------------------------------------------------------|-------|
| P17426       | adaptor protein complex AP-2, alpha 1 subunit                               | +     |
| P17427       | adaptor protein complex AP-2, alpha 2 subunit                               | +     |
| Q6A0C9       | adaptor protein complex AP-2, mu1                                            | +     |
| Q5SWR1       | adaptor-related protein complex 2, beta 1 subunit                           | +     |
| O54774       | adaptor-related protein complex 3, delta 1 subunit                          | +     |
| Q99K28       | ADP-ribosylation factor GTPase activating protein 2                         | +     |
| Q5XJY5       | archain 1                                                                   | +     |
| A2ALM8       | B-cell receptor-associated protein 31                                       | +     |
| UniRef100_ID | Description                                                                 | Score |
|-------------|------------------------------------------------------------------------------|-------|
| Q68FD5      | clathrin, heavy polypeptide (Hc)                                             | +++   |
| O08585      | clathrin, light polypeptide (Lca)                                            | +++   |
| Q63ZW9      | coatamer protein complex subunit alpha                                        | +++   |
| Q3UE02      | coatamer protein complex, subunit beta 1                                     | +++   |
| O55029      | coatamer protein complex, subunit beta 2 (beta prime)                         | +++   |
| O89079      | coatamer protein complex, subunit epsilon                                     | +++   |
| Q8BP96      | coatamer protein complex, subunit gamma                                       | +++   |
| Q9DC16      | endoplasmic reticulum-golgi intermediate compartment (ERGIC) 1               | +++   |
| P13020      | gelsolin                                                                     | +++   |
| Q9CR60      | golgi transport 1 homolog B (S. cerevisiae)                                  | +++   |
| Q3U944      | lectin, mannose-binding, 1                                                   | +++   |
| Q9DB05      | N-ethylmaleimide sensitive fusion protein attachment protein alpha           | +++   |
| Q8C1T5      | N-ethylmaleimide sensitive fusion protein attachment protein gamma           | +++   |
| Q3UB66      | RAB1, member RAS oncogene family                                             | +++   |
| Q9ES97      | reticulon 3                                                                  | +++   |
| Q6ZQ26      | sec1 family domain containing 1                                              | +++   |
| Q3UZ06      | SEC22 vesicle trafficking protein homolog B (S. cerevisiae)                  | +++   |
| Q01405      | SEC23A (S. cerevisiae)                                                        | +++   |
| A2AA71      | SEC24 related gene family, member A (S. cerevisiae)                          | +++   |
| Q3U882      | SEC24 related gene family, member B (S. cerevisiae)                          | +++   |
| O09044      | synaptosomal-associated protein 23                                            | +++   |
| Q0VGN4      | syntaxin 16                                                                   | +++   |
| O70439      | syntaxin 7                                                                    | +++   |
| Q9ES56      | trafficking protein particle complex 4                                        | +++   |
| Q9D1D4      | transmembrane emp24-like trafficking protein 10 (yeast)                      | +++   |
| UniRef100_P97390 | vacuolar protein sorting 45 (yeast) |
|------------------|-----------------------------------|
| + + + |

9. Differentiation

| UniRef100_O54774 | adaptor-related protein complex 3, delta 1 subunit |
|------------------|----------------------------------------------------|
| + + + |

| UniRef100_P97449 | alanyl (membrane) aminopeptidase |
|------------------|----------------------------------|
| + + + |

| UniRef100_P49817 | caveolin, caveolae protein 1 |
|------------------|-------------------------------|
| + + + |

| UniRef100_P11609 | CD1d1 antigen |
|------------------|--------------|
| + + + |

| UniRef100_Q7TMB8 | cytoplasmic FMR1 interacting protein 1 |
|------------------|----------------------------------------|
| + + + |

| UniRef100_Q3U878 | DAZ associated protein 1 |
|------------------|-------------------------|
| + + + |

| UniRef100_A2A607 | GNAS (guanine nucleotide binding protein, alpha stimulating) |
|------------------|-------------------------------------------------------------|
| + + + |

| UniRef100_P27601 | guanine nucleotide binding protein, alpha 13 |
|------------------|---------------------------------------------|
| + + + |

| UniRef100_P21279 | guanine nucleotide binding protein, alpha q polypeptide |
|------------------|---------------------------------------------------------|
| + + + |

| UniRef100_A0PJ91 | heat shock protein 90, alpha (cytosolic), class A member 1 |
|------------------|----------------------------------------------------------|
| + + + |

| UniRef100_P09055 | integrin beta 1 (fibronectin receptor beta) |
|------------------|---------------------------------------------|
| + + + |

| UniRef100_Q64331 | myosin VI |
|------------------|----------|
| + + + |

| UniRef100_Q3UHT9 | myosin, heavy polypeptide 9, non-muscle |
|------------------|----------------------------------------|
| + + + |

| UniRef100_Q9DB05 | N-ethylmaleimide sensitive fusion protein attachment protein alpha |
|------------------|-------------------------------------------------|
| + + + |

| UniRef100_Q5SSW0 | proteasome (prosome, macropain) activator subunit 4 |
|------------------|-----------------------------------------------------|
| + + + |

| UniRef100_Q4ADG5 | PRP19/PSO4 pre-mRNA processing factor 19 homolog (S. cerevisiae) |
|------------------|---------------------------------------------------------------|
| + - + |

| UniRef100_O35295 | purine rich element binding protein B |
|------------------|-------------------------------------|
| + + + |

| UniRef100_Q3TN61 | ras homolog gene family, member A |
|------------------|----------------------------------|
| + + + |

| UniRef100_O70551 | serine/arginine-rich protein specific kinase 1 |
|------------------|-----------------------------------------------|
| + + + |

| UniRef100_Q99JR1 | sideroflexin 1 |
|------------------|--------------|
| + + + |

| UniRef100_P42669 | similar to hCG45299; purine rich element binding protein A |
|------------------|-------------------------------------------------------------|
| + + + |

| UniRef100_Q3UHN1 | slit homolog 3 (Drosophila) |
|------------------|-----------------------------|
| - + + |

| UniRef100_Q6PHU5 | sortilin 1 |
|------------------|----------|
| + + + |
| UniRef100_ID | Description | Accession | Value 1 | Value 2 | Value 3 |
|--------------|-------------|-----------|---------|---------|---------|
| Q9ERD7       | tubulin, beta 3 | +       | +       | +       |
| P25911       | Yamaguchi sarcoma viral (v-yes-1) oncogene homolog | +       | +       | +       |
| O35083       | 1-acylglycerol-3-phosphate O-acyltransferase 1 | +       | +       | +       |
|              | (lysophosphatidic acid acyltransferase, alpha) |          |         |         |
| Q8K3K7       | 1-acylglycerol-3-phosphate O-acyltransferase 2 | +       | +       | +       |
|              | (lysophosphatidic acid acyltransferase, beta) |          |         |         |
| Q8C0N2       | 1-acylglycerol-3-phosphate O-acyltransferase 9 | +       | +       | +       |
| Q5SWU9       | acetyl-Coenzyme A carboxylase alpha | +       | +       | +       |
| Q3TED3       | ATP citrate lyase | +       | +       | +       |
| Q8VDP6       | CDP-diacylglycerol--inositol 3-phosphatidylinositol transferase | +       | +       | +       |
|              | (phosphatidylinositol synthase) |          |         |         |
| Q9CY59       | cytochrome b5 reductase 3 | +       | +       | +       |
| Q6I9Y1       | fatty acid desaturase 3 | +       | +       | -       |
| P19096       | fatty acid synthase | +       | +       | +       |
| Q9CY27       | glycoprotein, synaptic 2 | +       | +       | +       |
| O70503       | hydroxysteroid (17-beta) dehydrogenase 12 | +       | +       | +       |
| O88736       | hydroxysteroid (17-beta) dehydrogenase 7 | +       | +       | +       |
| Q8BLN5       | lanosterol synthase | +       | +       | +       |
| Q3UZK0       | lysophosphatidylglycerol acyltransferase 1 | +       | +       | +       |
| Q91V01       | membrane bound O-acyltransferase domain containing 5 | +       | +       | +       |
| Q80W94       | monoacylglycerol O-acyltransferase 2 | +       | +       | +       |
| Q7TPY3       | NAD(P) dependent steroid dehydrogenase-like | +       | +       | +       |
| A2ASQ2       | prostaglandin E synthase 2 | +       | +       | -       |
| Q4ADG5       | PRP19/PSO4 pre-mRNA processing factor 19 homolog (S. cerevisiae) | +       | -       | +       |
| Q05920       | pyruvate carboxylase | +       | +       | +       |
| P13011       | stearoyl-Coenzyme A desaturase 2 | +       | +       | +       |
12. Immune response

| UniRef100_A0AUP0 | apolipoprotein A-IV | + | + | + |
|------------------|---------------------|---|---|---|
| UniRef100_A2ALM8 | B-cell receptor-associated protein 31 | + | + | + |
| UniRef100_P11609 | CD1d1 antigen | + | + | + |
| UniRef100_Q62479 | complement component (3b/4b) receptor 1-like | + | + | + |
| UniRef100_P98086 | complement component 1, q subcomponent, alpha polypeptide | + | + | + |
| UniRef100_P14106 | complement component 1, q subcomponent, beta polypeptide | + | + | + |
| UniRef100_Q6DI63 | complement component 1, q subcomponent, C chain | + | + | + |
| UniRef100_Q6GTP5 | endoplasmic reticulum aminopeptidase 1 | + | + | + |
| UniRef100_P14483 | histocompatibility 2, class II antigen A, beta 1 | + | + | + |
| UniRef100_P01872 | immunoglobulin heavy chain 6 (heavy chain of IgM) | + | + | + |
| UniRef100_P01592 | immunoglobulin joining chain | + | + | + |
| UniRef100_A7VMS6 | predicted gene, EG667977 | + | + | + |
| UniRef100_P39429 | TNF receptor-associated factor 2 | + | + | + |
| UniRef100_Q8BQL7 | toll interacting protein | + | + | + |

13. Endocytosis

| UniRef100_P17426 | adaptor protein complex AP-2, alpha 1 subunit | + | + | + |
|------------------|-----------------------------------------------|---|---|---|
| UniRef100_P17427 | adaptor protein complex AP-2, alpha 2 subunit | + | + | + |
| UniRef100_Q9WVC3 | caveolin 2 | + | + | + |
| UniRef100_P49817 | caveolin, caveolae protein 1 | + | + | + |
| UniRef100_Q8BH64 | EH-domain containing 2 | + | + | + |
| UniRef100_P01872 | immunoglobulin heavy chain 6 (heavy chain of IgM) | + | + | + |
| UniRef100_Q91ZX7 | low density lipoprotein receptor-related protein 1 | + | + | + |
| UniRef100_Q2HZ94 | mannose receptor, C type 1 | + | + | + |
| UniRef100_Q64331 | myosin VI | + | + | + |
| UniRef100_O88531 | palmitoyl-protein thioesterase 1 | + | + | + |
| UniRef100_Q3TD51 | phosphatidylinositol binding clathrin assembly protein | + | + | + |
| UniRef100_P35278 | RAB5C, member RAS oncogene family | + | + | + |
| UniRef100_Q3TLP8 | RAS-related C3 botulinum substrate 1 | + | + | + |
| UniRef100_Q6PHU5 | sortilin 1 | + | + | + |

**14. Insulin**

| UniRef100_Q07113 | insulin-like growth factor 2 receptor | + | + | + |
| UniRef100_Q3ULI3 | proteasome (prosome, macropain) 26S subunit, non-ATPase, 9 | + | + | + |
| UniRef100_P14142 | solute carrier family 2 (facilitated glucose transporter), member 4 | + | + | + |
| UniRef100_Q6PHU5 | sortilin 1 | + | + | + |

Notes: “+” Detected in the ELVs, “-” not detected in the ELVs.
Table 2. Identities of exosome proteins found in exosomes-like microvesicles isolated from adipocyte tissue

| Accession no. | Identified protein                                                                 |
|---------------|------------------------------------------------------------------------------------|
| UniRef 100_Q3TC67        | actin related protein 2/3 complex, subunit 1B                                    |
| UniRef 100_Q9C867          | actin related protein 2/3 complex, subunit 2                                     |
| UniRef 100_Q9JM76          | actin related protein 2/3 complex, subunit 3                                     |
| UniRef 100_Q7PD9           | actin related protein 2/3 complex, subunit 4                                     |
| UniRef 100_Q61264          | actin, alpha 1, skeletal muscle                                                   |
| UniRef 100_Q3UA89          | actin, beta, cytoplasmic                                                         |
| UniRef 100_Q9QZ83          | actin, gamma, cytoplasmic 1                                                       |
| UniRef 100_O8890           | actinin alpha 3                                                                  |
| UniRef 100_P14602          | heat shock protein 1                                                              |
| UniRef 100_Q8K0U4          | heat shock protein 12A                                                            |
| UniRef 100_P20029          | heat shock protein 5; heat shock 70kDa protein 5 (glucose-regulated protein, 78kDa) |
| UniRef 100_P38647          | heat shock protein 9                                                              |
| UniRef 100_P17879          | heat shock protein 70                                                             |
| UniRef 100_A0PJ91          | heat shock protein 90, alpha (cytosolic), class A member 1                        |
| UniRef 100_P08113          | heat shock protein 90, beta (Grp94), member 1                                     |
| UniRef 100_P11499          | heat shock protein 90kDa alpha (cytosolic),                                      |
| UniRef 100_P09055          | integrin beta 1 (fibronectin receptor beta)                                      |
| UniRef 100_Q9KA2           | tubulin, alpha 1B                                                                |
| UniRef 100_P68373          | tubulin, alpha 1C                                                                |
| UniRef 100_Q9D9Y2          | tubulin, alpha 3B                                                                |
| UniRef 100_Q62363          | tubulin, beta 2a; tubulin, beta 2b                                               |
| UniRef 100_Q9CVR0          | tubulin, beta 2c                                                                 |
| UniRef 100_Q9ERD7          | tubulin, beta 3                                                                  |
| UniRef 100_Q3U9U3          | tubulin, beta 6                                                                   |
| UniRef 100_Q02053          | ubiquitin-like modifier activating enzyme 1                                      |
| UniRef 100_Q92111          | transferrin                                                                      |
| UniRef 100_Q3UB66          | RAB1, member RAS oncogene family                                                  |
| UniRef 100_Q3U621          | RAB10, member RAS oncogene family                                                 |
| UniRef 100_P46638          | RAB1B, member RAS oncogene family                                                 |
| UniRef 100_Q5OHW9          | RAB14, member RAS oncogene family                                                 |
| UniRef 100_P35293          | RAB18, member RAS oncogene family                                                 |
| UniRef 100_Q9D1G1          | RAB1B, member RAS oncogene family                                                 |
| UniRef 100_P35278          | RAB5C, member RAS oncogene family                                                 |
| UniRef 100_P55258          | RAB8A, member RAS oncogene family                                                 |
| UniRef 100_P61028          | RAB8B, member RAS oncogene family                                                 |
| UniRef 100_Q65385          | plectin 1                                                                         |
| UniRef 100  | Description                                      |
|------------|--------------------------------------------------|
| Q 3TD51    | phosphatidylinositol binding clathrin assembly protein |
| P 08122    | collagen, type IV, alpha 2                       |
| Q 04857    | collagen, type VI, alpha 1                       |
| Q 02788    | collagen, type VI, alpha 2                       |
| Q 80X19    | collagen, type XIV, alpha 1                      |
| Q 68FD5    | clathrin, heavy polypeptide (Hc)                 |
| O 08585    | clathrin, light polypeptide (Lca)                |
| P 35762    | CD 81 antigen                                    |
| P 11609    | CD1d1 antigen                                    |
| Q 08857    | CD36 antigen                                     |
| Q 61735    | CD47 antigen                                     |
| P 14731    | CD63 antigen                                     |
| P 40240    | CD9 antigen                                      |
| Q 02013    | aquaporin 1                                       |
| P 10107    | annexin A1                                       |
| P 97384    | annexin A11                                      |
| P 07356    | annexin A2                                       |
| O 35639    | annexin A3                                       |
| P 97429    | annexin A4                                       |
| P 48036    | annexin A5                                       |
| P 14824    | annexin A6                                       |
| O 08855    | apolipoprotein A-I                               |
| A0AUP0     | apolipoprotein A-IV                              |
| P 08226    | apolipoprotein E                                 |
| P 19096    | fatty acid synthase                              |
| Fatty acid | 14:0 | 15:0 | 16:0 | 16:1 | 18:0 | 18:1w9 | 18:2w6 | 18:3w6 | 18:3w3 | 19:0 | 20:0 | 20:1w9 | 20:2w6 | 20:3w6 | 20:3w3 | 20:4w6 | 20:5w3 | 22:0 | 22:1w9 | 22:3 | 22:4w6 | 22:5w3 | 22:6w3 | 24:0 | 24:1w9 |
|-----------|------|------|------|------|------|--------|--------|--------|--------|------|------|--------|--------|--------|--------|--------|--------|------|--------|------|--------|--------|--------|------|--------|
| %         | 0.15 | 0.06 | 42.81| 0.00 | 0.00 | 0.00   | 0.00   | 0.00   | 0.00   | 82.0 | 0.00 | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 92.0 | 0.00   | 0.00 | 0.00   | 0.00   | 0.00   | 0.00 | 0.00   |