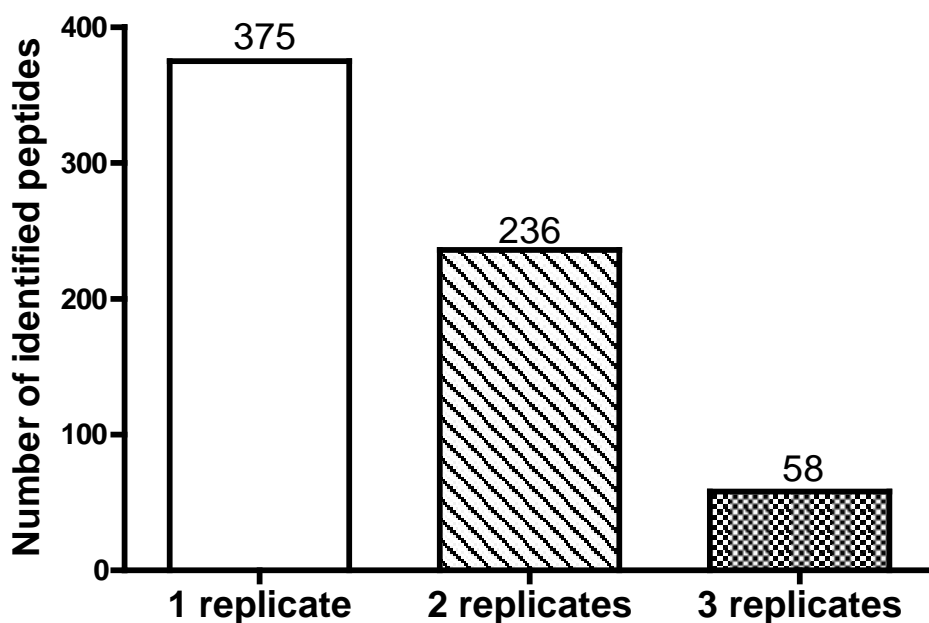


**Supplementary Figure 1. Comparison between the amino acid composition of non-phosphorylated peptides present in the 50 mM eluates of IMAC-Al<sup>3+</sup> columns and the average amino acid composition of peptides present in UniProt/SwissProt database.**

The graph shows coenrichment of acidic peptides during phosphopeptide enrichment on IMAC-Al<sup>3+</sup> resin which is common for IMAC techniques. Data for Cys, His, Met, Trp and Tyr are not presented since the number of these amino acids in non-phosphorylated peptides found in eluate was not sufficient for analysis (<20).



**Supplementary Figure 2. Reproducibility of protein identification.**

Figure illustrates the number of proteins identified in three, two and one biological replicates of cytosole samples. Only proteins identified by 2 and more non-redundant peptides were considered for analysis. Similar data were obtained for endosomal samples (not shown).

**Supplementary Table 1. Peptides of digested protein standards detected in the 50 mM phosphate eluate from IMAC-Al<sup>3+</sup> column.**

| Charge | Score | PhosphoSite | Sequence             | m/z     | Protein name |
|--------|-------|-------------|----------------------|---------|--------------|
| 3      | 21.44 | S130        | YKVPQLEIVPNsAEER     | 651.47  | Alpha casein |
| 2      | 14.2  | S130        | VPQLEIVPNsAEER       | 831.23  |              |
| 2      | 13.12 | S61/S63     | DIGsEsTEDQAMEDIK     | 964.35  |              |
| 2      | 14.83 | S61         | DIGsESTEDQAMEDIK     | 925.03  |              |
| 2      | 16.4  | T159        | TVDMEStEVFTK         | 733.88  |              |
| 3      | 19.49 | S46         | NMAINPsKENLCSTFCK    | 699.03  |              |
| 2      | 15.7  | S345        | EVVGsAEAGVDAASVSEEFR | 1044.98 | Ovalbumin    |

Supplementary Table 2. Rat liver phosphoproteins identified by 2 and more non-redundant peptides.

| Acc # (a) | Protein name   | Protein score (b) | Coverage % | Peptides | Phosphopeptides | Relative abundance |       |       |        |       |         |           |       |       |       |       |         |
|-----------|--|-------------------|------------|----------|-----------------|--------------------|-------|-------|--------|-------|---------|-----------|-------|-------|-------|-------|---------|
|           |  |                   |            |          |                 | Cytosols           |       |       |        |       |         | Endosomes |       |       |       |       |         |
|           |  |                   |            |          |                 | Ctrl1              | Ctrl2 | Ctrl3 | Ins1   | Ins2  | Ins3    | Ctrl1     | Ctrl2 | Ctrl3 | Ins1  | Ins2  | Ins3    |
| Q80X08    | WASH complex subunit FAM21                                       | 1050.34           | 60         | 60       | 23              | 5E+09              | 1E+09 | 1E+10 | 5E+09  | 6E+08 | 5.3E+09 | 7E+10     | 5E+10 | 2E+10 | 5E+10 | 3E+10 | 2.1E+10 |
| Q3UH79    | capicua homolog  | 158.25            | 6          | 11       | 9               | 2E+08              | 5E+07 | 1E+09 | 2E+07  | 3E+07 | 3.5E+07 |           |       |       |       |       |         |
| Q3ZB99    | Tight junction protein 2   | 252.65            | 20         | 15       | 8               | 5E+09              | 3E+09 | 8E+09 | 2E+09  | 3E+09 | 5.7E+09 | 6E+08     | 3E+08 | 7E+07 |       | 3E+08 | 1.8E+09 |
| Q5PRE9    | Ncor1 protein  | 154.22            | 6          | 9        | 7               |                    |       | 4E+08 |        |       |         |           |       |       |       |       |         |
| Q497A4    | Nucleobindin 1   | 611.73            | 72         | 37       | 6               |                    |       |       | 833333 |       |         | 1E+11     | 1E+11 | 4E+10 | 8E+10 | 5E+10 | 3.9E+10 |
| O35987    | NSFL1 cofactor p47   | 253.63            | 50         | 15       | 6               | 2E+10              | 4E+09 | 5E+10 | 1E+10  | 3E+09 | 2.5E+10 | 4E+09     | 1E+09 | 2E+08 | 4E+09 | 3E+09 | 3.2E+08 |
| Q4W1H3    | Myosin 9b  | 221.21            | 12         | 14       | 6               | 2E+09              | 5E+07 | 2E+09 | 1E+09  | 7E+07 | 3E+08   |           |       |       |       |       |         |
| P59808    | SAM and SH3 domain-containing protein 1                          | 170.7             | 12         | 12       | 6               | 7E+07              | 5E+07 | 3E+09 | 2E+07  | 3E+07 | 7.1E+07 |           |       |       |       |       |         |
| Q99MF8    | Glycogen synthase  | 162.14            | 21         | 10       | 6               | 1E+10              | 4E+08 | 1E+10 | 4E+09  | 3E+07 | 1.6E+09 | 5E+07     | 1E+09 | 8E+07 | 1E+09 | 9E+07 |         |
| Q2EJA0    | Yes-associated protein   | 144.53            | 39         | 9        | 6               |                    |       | 2E+09 | 1E+09  | 2E+08 | 4.9E+08 |           |       |       |       |       |         |
| Q4V893    | Hypothetical protein RGD1307254                                  | 135.52            | 33         | 8        | 6               | 4E+08              |       |       |        |       |         |           |       |       |       |       |         |
| P81128    | Glucocorticoid receptor DNA-binding factor 1                     | 127.39            | 9          | 9        | 6               | 1E+09              | 2E+07 | 4E+09 |        |       | 5.1E+08 |           |       |       |       |       |         |
| Q5M7V8    | Thyroid hormone receptor-associated protein 3                    | 118.35            | 9          | 8        | 6               | 8E+08              | 1E+08 | 2E+09 | 1E+08  | 3E+07 | 1.5E+08 |           |       |       |       |       |         |
| Q4QQT7    | epidermal growth factor receptor pathway substrate 15 related s  | 285.27            | 32         | 18       | 5               | 1E+09              | 2E+08 | 5E+09 | 2E+07  |       | 2.7E+08 | 3E+09     | 2E+09 | 3E+08 | 2E+09 | 1E+09 |         |
| Q70AM4    | Kinesin 13B  | 180.71            | 9          | 11       | 5               | 1E+09              | 4E+08 | 8E+09 | 3E+08  | 4E+08 | 1.9E+09 |           | 3E+08 |       |       |       |         |
| Q5BMA6    | Leukemia-associated Rho guanine nucleotide exchange factor       | 147.44            | 10         | 9        | 5               | 2E+07              |       | 1E+09 |        |       | 4282799 |           | 6E+07 |       |       |       | 7500000 |
| Q1EG89    | Myocardial ischemic preconditioning associated protein 7         | 130.38            | 27         | 8        | 5               | 6E+08              | 4E+07 | 2E+09 | 2E+09  | 2E+07 | 8.9E+08 |           |       | 1E+09 | 9E+08 |       |         |
| Q9QYV3    | C3G protein  | 109.46            | 12         | 8        | 5               |                    | 6E+07 | 6E+08 |        |       | 7500000 |           | 1E+08 |       |       |       |         |
| P35570    | Insulin receptor substrate 1                                     | 95.01             | 9          | 6        | 5               | 2E+08              | 8E+06 | 3E+09 | 9E+08  |       | 1.1E+08 |           |       |       |       |       |         |
| Q6AYT4    | Protein C9orf42 homolog  | 85.58             | 27         | 5        | 5               |                    |       |       |        |       |         |           |       |       |       |       |         |
| P05432    | ERBB receptor feedback inhibitor 1                               | 78.77             | 18         | 5        | 5               |                    |       |       | 2E+08  |       |         | 7E+08     |       |       |       |       |         |
| Q14TE9    | DNA topoisomerase 2-beta   | 78.64             | 6          | 5        | 5               |                    |       |       |        |       |         |           |       |       |       |       |         |
| Q9QYA5    | TATA element modulatory factor                                   | 299.55            | 35         | 20       | 4               |                    | 4E+07 |       |        |       |         | 2E+10     | 1E+10 | 1E+10 | 2E+10 | 9E+09 | 6.3E+09 |
| Q9R037    | WD repeat domain 44  | 261.64            | 27         | 17       | 4               | 2E+09              | 3E+08 | 7E+09 | 9E+09  | 1E+08 | 3.6E+09 |           |       |       | 5E+07 |       |         |
| Q66HF9    | Leucine-rich repeat flightless-interacting protein 1             | 260.79            | 44         | 15       | 4               | 2E+09              | 1E+09 | 7E+09 | 3E+09  | 6E+08 | 4.8E+09 | 2E+08     |       |       |       |       |         |
| Q75N33    | Protein transport protein Sec16B                                 | 255.45            | 24         | 14       | 4               | 5E+09              | 2E+09 | 1E+10 | 2E+09  | 2E+09 | 8.1E+09 | 5E+08     | 6E+08 | 2E+09 | 1E+09 | 3E+08 | 6.3E+08 |
| Q58A65    | C-jun-amino-terminal kinase-interacting protein 4                | 223.88            | 15         | 15       | 4               | 4E+09              | 5E+08 | 8E+09 | 8E+07  | 4E+08 | 5E+09   | 1E+08     | 1E+08 |       | 6E+08 | 5E+08 | 2.7E+08 |
| Q497W6    | Liprin-beta-2  | 212.94            | 21         | 14       | 4               | 4E+09              | 5E+08 | 1E+10 | 1E+09  | 2E+08 | 1.3E+09 |           | 2E+07 |       |       |       |         |
| Q8VHK7    | Hepatoma-derived growth factor                                   | 209.98            | 66         | 13       | 4               | 1E+10              | 1E+09 | 1E+10 | 1E+10  | 1E+09 | 6.5E+09 | 2E+08     | 1E+09 | 2E+08 | 6E+07 | 6E+08 | 1.7E+08 |
| Q5JC29    | Epidermal growth factor receptor pathway substrate 15 isoform f  | 200.1             | 28         | 15       | 4               |                    | 3E+08 | 2E+09 | 1E+09  | 7E+07 | 1.4E+08 | 1E+09     | 3E+07 |       | 1E+09 | 2E+09 | 3.5E+08 |
| Q9JJ19    | Ezrin-radixin-moesin-binding phosphoprotein 50                   | 180.98            | 39         | 11       | 4               | 1E+09              | 7E+08 | 2E+10 | 6E+09  | 2E+09 | 4.8E+09 | 6E+09     | 4E+09 | 4E+09 | 9E+09 | 6E+09 | 2E+08   |
| P19814    | Trans-Golgi network integral membrane protein TGN38 precursor    | 168.79            | 32         | 10       | 4               |                    |       |       |        |       |         | 2E+09     | 3E+09 | 4E+09 | 2E+09 | 2E+09 | 1.9E+09 |
| Q3B7D4    | Adducin 1  | 160.89            | 18         | 11       | 4               | 7E+08              | 3E+08 | 8E+08 |        |       | 6.8E+08 | 1E+09     | 3E+08 | 5E+08 | 6E+09 | 3E+09 | 1.6E+09 |
| Q5HZA7    | Bin1 protein   | 160.07            | 38         | 9        | 4               | 4E+09              | 2E+09 | 4E+09 | 2E+08  | 2E+09 | 7.3E+09 | 6E+08     | 4E+07 |       | 7E+08 |       |         |
| Q5U2U8    | Bcl2-associated athanogene 3                                     | 157.53            | 27         | 10       | 4               | 3E+09              | 3E+08 | 5E+09 | 7E+09  | 1E+08 | 3E+09   | 5E+08     | 4E+08 | 5E+08 | 4E+08 | 6E+08 |         |
| Q6PAR5    | GTPase activating protein and VPS9 domains 1                     | 140.09            | 10         | 8        | 4               | 3E+09              | 6E+08 | 7E+09 | 1E+07  | 1E+07 | 8.3E+08 |           |       |       |       |       |         |
| P36506    | Dual specificity mitogen-activated protein kinase kinase 2       | 135.8             | 27         | 8        | 4               | 4E+09              | 2E+08 | 2E+10 | 6E+08  | 5E+07 | 2.4E+09 |           |       |       |       |       |         |
| Q5EBP9    | Tripartite motif protein 28                                      | 127.38            | 14         | 8        | 4               | 9E+08              | 5E+06 | 1E+10 | 2E+07  | 1E+08 | 1.2E+09 |           |       |       |       |       |         |
| P47196    | RAC-alpha serine/threonine-protein kinase                        | 124.47            | 24         | 8        | 4               | 7E+08              | 1E+08 | 1E+09 | 2E+09  |       | 1.2E+07 | 2E+08     | 3E+08 |       |       |       |         |
| Q6AYB6    | SYAP1 protein  | 113.22            | 36         | 7        | 4               | 1E+08              | 1E+08 | 4E+09 | 2E+09  | 8E+07 | 2.5E+09 | 9E+08     |       |       | 5E+08 |       |         |
| Q2M4G6    | Son of sevenless like-protein 1                                  | 112.19            | 8          | 7        | 4               | 3E+08              | 2E+07 | 1E+09 | 6E+08  | 1E+07 | 2.4E+07 |           |       |       |       |       |         |
| Q3TA58    | phosphatidylinositol 4-kinase catalytic beta polypeptide         | 106.66            | 13         | 7        | 4               |                    | 7E+07 | 2E+09 | 1E+09  | 1E+07 |         |           |       | 1E+08 |       |       |         |
| Q8C7U9    | Phosphatase and actin regulator 4                                | 102.79            | 14         | 7        | 4               | 3E+09              | 1E+09 | 5E+09 | 2E+09  | 9E+08 | 9.1E+08 |           | 2E+08 |       |       |       |         |
| Q80XU3    | Nuclear ubiquitous casein and cyclin-dependent kinases substrate | 92.27             | 23         | 5        | 4               | 7E+09              | 2E+09 | 2E+09 | 1E+08  | 3E+09 | 3.5E+09 |           |       |       |       |       |         |
| P24788    | Cyclin-dependent kinase 11                                       | 92.13             | 10         | 7        | 4               |                    | 2E+07 | 6E+08 |        | 7E+06 |         |           |       |       |       |       |         |
| Q5U2U7    | mRNA cap guanine-N7 methyltransferase                            | 85.28             | 16         | 6        | 4               | 3E+09              | 2E+07 | 5E+09 | 3E+09  | 4E+07 | 2.4E+09 |           |       |       |       |       |         |
| Q8BGU5    | Cyclin fold protein 1  | 84.44             | 22         | 6        | 4               |                    |       |       |        |       |         |           |       |       |       | 7E+08 | 1.6E+09 |
| Q5SV53    | Ortholog of human amyotrophic lateral sclerosis 2                | 84.32             | 6          | 5        | 4               |                    |       | 7E+07 |        |       |         |           |       |       |       |       |         |
| Q3ULP2    | 2310040A13Rik protein  | 80.69             | 9          | 5        | 4               |                    |       |       |        |       |         | 2E+07     | 8E+07 | 3E+06 | 2E+07 | 1E+09 | 1.3E+07 |
| Q9JIH7    | Serine/threonine-protein kinase WNK1                             | 73.73             | 4          | 5        | 4               |                    |       |       |        | 2E+08 | 8.7E+08 |           |       |       |       |       |         |
| Q148V8    | Protein FAM83H   | 62.12             | 5          | 5        | 4               |                    |       | 4E+07 |        |       |         |           |       |       |       |       |         |
| P13668    | Stathmin   | 58.98             | 18         | 4        | 4               |                    |       |       |        |       |         |           |       |       |       |       |         |
| Q61083    | Mitogen-activated protein kinase kinase kinase 2                 | 48.6              | 7          | 4        | 4               | 4E+08              |       |       | 4E+08  |       |         |           |       |       |       |       |         |
| Q63002    | Mannose 6-phosphate/insulin-like growth factor II receptor       | 604.97            | 22         | 37       | 3               |                    |       |       |        |       |         | 2E+10     | 3E+10 | 1E+10 | 2E+10 | 1E+10 | 1.9E+10 |

|        |   |        |    |    |   |       |       |       |       |       |         |         |       |       |       |       |         |         |
|--------|---|--------|----|----|---|-------|-------|-------|-------|-------|---------|---------|-------|-------|-------|-------|---------|---------|
| Q3ZU82 | Golgin subfamily A member 5                                   | 459.61 | 37 | 29 | 3 | 8E+09 | 2E+09 | 3E+10 | 5E+09 | 2E+09 | 1.6E+10 | 3E+10   | 1E+10 | 9E+09 | 1E+10 | 2E+10 | 3E+09   |         |
| Q5U302 | Catenin   | 318.44 | 31 | 20 | 3 | 2E+08 |       | 8E+08 | 2E+07 |       | 8.6E+07 | 2E+10   | 1E+10 | 1E+09 | 6E+09 | 1E+10 | 5.4E+08 |         |
| Q63120 | Canalicular multispecific organic anion transporter 1         | 274.42 | 14 | 17 | 3 |       |       |       |       |       |         | 3E+07   | 5E+09 | 8E+09 |       | 1E+10 | 4E+09   |         |
| Q77SU1 | Brefeldin A-inhibited guanine nucleotide-exchange factor 2    | 265.06 | 13 | 17 | 3 | 5E+09 | 3E+08 | 1E+10 | 3E+09 | 3E+07 | 5.4E+09 |         | 6E+08 | 1E+09 |       | 1E+09 | 1.1E+08 |         |
| Q5SYN9 | Myosin XVIIIa   | 260.89 | 13 | 18 | 3 | 3E+09 | 9E+07 | 4E+09 | 2E+09 | 5E+08 | 9.7E+08 |         | 5E+08 |       |       | 1E+08 | 2E+07   |         |
| P09034 | Argininosuccinate synthase                                    | 254.39 | 41 | 15 | 3 | 2E+10 | 9E+09 | 3E+10 | 8E+09 | 5E+09 | 2.4E+10 |         | 7E+08 | 2E+08 |       | 2E+09 | 2.3E+07 |         |
| O54774 | AP-3 complex subunit delta-1                                  | 237.47 | 18 | 14 | 3 |       |       | 3E+06 | 2E+09 | 1E+09 | 5E+06   | 3.5E+07 |       | 2E+08 | 2E+09 |       | 5E+09   | 1.6E+08 |
| Q8VBU2 | Protein NDRG2   | 187.7  | 54 | 11 | 3 | 1E+10 | 9E+08 | 4E+10 | 2E+10 | 1E+09 | 5.1E+09 | 5E+08   | 5E+08 | 1E+07 | 4E+08 | 1E+09 | 2E+07   |         |
| Q02357 | Ankyrin-1   | 177.35 | 8  | 12 | 3 |       |       |       |       |       |         | 5E+08   | 1E+09 | 2E+09 | 1E+09 | 7E+09 | 4.5E+08 |         |
| Q95571 | MHC class I RT1.Au heavy chain precursor                      | 176.64 | 36 | 11 | 3 |       |       |       |       |       |         | 2E+10   | 1E+10 | 1E+10 | 9E+09 | 2E+10 | 5.4E+09 |         |
| Q9WU74 | Lipolysis-stimulated lipoprotein receptor precursor           | 175.3  | 21 | 10 | 3 |       |       |       |       |       |         | 8E+09   | 1E+09 | 6E+09 | 3E+09 | 9E+09 | 3E+09   |         |
| Q6XUU5 | Microtubule-associated tumor suppressor 1 homolog             | 165.25 | 42 | 12 | 3 |       |       |       | 7E+06 |       |         | 2E+09   | 8E+08 |       | 1E+09 | 3E+09 | 6.2E+08 |         |
| Q80XQ4 | Catenin delta-1   | 161.74 | 13 | 10 | 3 |       |       |       |       |       |         | 8E+09   | 6E+09 | 3E+09 | 1E+10 | 5E+09 | 4.5E+09 |         |
| Q4KM62 | Palmdelphin   | 158.33 | 31 | 10 | 3 | 4E+08 | 5E+08 | 4E+09 | 1E+07 | 1E+08 | 3.6E+08 |         |       |       |       |       |         |         |
| Q5U4E4 | TRM1 tRNA methyltransferase 1 homolog                         | 157.15 | 32 | 9  | 3 | 3E+09 | 9E+08 | 9E+09 | 4E+07 | 2E+09 | 9.6E+09 |         |       |       |       |       |         |         |
| P70580 | Membrane-associated progesterone receptor component 1         | 155.6  | 54 | 9  | 3 | 4E+08 |       |       |       |       |         | 2E+10   | 1E+10 | 1E+10 | 2E+10 | 4E+09 | 1E+10   |         |
| Q6AYR1 | Trk-fused gene  | 149.34 | 39 | 9  | 3 | 2E+10 | 5E+09 | 2E+10 | 1E+09 | 3E+09 | 2E+10   | 3E+09   |       | 2E+08 | 2E+09 | 2E+08 | 1.3E+08 |         |
| Q3ZAU5 | DDHD domain containing 1                                      | 146.65 | 16 | 9  | 3 | 2E+08 | 2E+08 | 6E+09 | 1E+07 |       | 1E+09   |         |       |       |       |       | 5E+07   |         |
| Q5PQM2 | Kinesin-like 8  | 142.21 | 19 | 10 | 3 | 1E+09 | 5E+08 | 5E+09 | 5E+08 |       | 9.2E+07 |         |       |       |       |       |         |         |
| P24090 | Alpha-2-HS-glycoprotein precursor                             | 137.07 | 39 | 8  | 3 | 3E+09 | 4E+08 | 8E+08 | 1E+07 |       | 1.3E+08 | 6E+09   | 5E+08 | 3E+09 | 4E+09 | 5E+08 | 3.9E+09 |         |
| P04157 | Receptor-type tyrosine-protein phosphatase C                  | 132.49 | 9  | 9  | 3 |       |       |       |       |       |         | 9E+08   | 2E+09 |       | 2E+08 | 3E+09 | 2.5E+08 |         |
| Q64350 | Translation initiation factor eIF-2B subunit epsilon          | 128.95 | 17 | 9  | 3 | 3E+08 |       | 4E+09 | 6E+08 |       | 7.9E+08 |         |       |       |       |       |         |         |
| Q99M64 | 55 kDa type II phosphatidylinositol 4-kinase                  | 128.71 | 20 | 9  | 3 |       |       |       |       |       |         |         | 3E+08 | 1E+08 | 9E+07 | 3E+06 | 9.3E+07 |         |
| Q9WVE9 | Intersectin-1   | 126.98 | 10 | 9  | 3 | 4E+08 | 1E+08 | 2E+09 | 1E+09 | 2E+08 | 2.2E+09 | 7E+08   | 2E+09 | 4E+08 | 6E+08 |       |         |         |
| Q67QE1 | Zinc finger CCCH domain-containing protein 18                 | 109.26 | 15 | 7  | 3 | 3E+08 | 1E+08 | 6E+08 | 6E+08 | 4E+08 | 6.3E+08 |         |       |       |       |       |         |         |
| Q920J4 | Thioredoxin-like protein 1                                    | 107.95 | 36 | 7  | 3 | 7E+08 | 3E+07 | 3E+09 | 1E+09 | 2E+08 | 1.6E+09 |         | 3E+08 | 3E+08 | 1E+08 | 4E+08 | 2.4E+08 |         |
| Q8K2F8 | Protein FAM61A  | 105    | 24 | 7  | 3 | 1E+07 |       | 2E+09 | 7E+06 |       | 2.7E+08 |         | 4E+07 |       |       | 2E+08 |         |         |
| Q62799 | Receptor tyrosine-protein kinase erbB-3 precursor             | 100.03 | 7  | 6  | 3 |       |       |       |       |       |         | 1E+09   | 8E+08 | 6E+08 | 8E+08 | 7E+08 | 1.2E+09 |         |
| Q68G63 | Hepatoma-derived growth factor-related protein 2              | 97.34  | 15 | 6  | 3 | 7E+09 | 2E+08 | 7E+09 | 3E+09 | 1E+08 | 5.5E+09 |         |       |       |       |       |         |         |
| Q8VIP2 | Carbohydrate responsive element binding protein               | 91.19  | 13 | 6  | 3 |       |       | 7E+08 | 2E+07 | 1E+07 |         |         |       |       |       |       |         |         |
| Q5M7W5 | Microtubule-associated protein 4                              | 90.57  | 9  | 6  | 3 |       |       | 1E+08 |       | 1E+07 |         | 3E+08   | 3E+07 | 3E+08 | 3E+08 | 1E+09 | 3.1E+08 |         |
| Q499N6 | UBX domain-containing protein 1                               | 89.37  | 37 | 6  | 3 |       |       | 1E+08 | 1E+08 |       | 1.3E+07 |         |       | 8E+07 |       |       |         |         |
| Q8R0S2 | IQ motif and Sec7 domain-containing protein 1                 | 88.15  | 9  | 6  | 3 |       |       | 3E+08 |       |       | 1E+08   |         |       |       |       | 3E+07 |         |         |
| Q5SWI0 | Breast carcinoma amplified sequence 3                         | 82.96  | 15 | 6  | 3 |       |       | 2E+07 | 2E+08 | 5E+07 |         |         |       |       |       |       |         |         |
| Q32PZ6 | Trim24 protein  | 82.94  | 14 | 5  | 3 |       |       |       |       |       |         |         |       |       |       | 1E+08 |         |         |
| P15257 | Hepatocyte nuclear factor 1-alpha                             | 79.33  | 18 | 5  | 3 | 1E+08 |       | 2E+09 |       |       |         |         |       |       |       |       |         |         |
| P68404 | Protein kinase C beta type                                    | 77.11  | 14 | 5  | 3 | 3E+08 |       | 1E+08 |       |       |         | 8E+07   | 1E+09 |       |       | 3E+08 | 6.6E+07 |         |
| Q6MGC8 | Death domain-associated protein                               | 76.71  | 15 | 5  | 3 |       |       | 2E+07 |       |       |         |         |       |       |       |       |         |         |
| Q920R0 | Alsln   | 70.27  | 4  | 5  | 3 |       |       | 4E+06 |       |       |         |         |       |       |       |       |         |         |
| Q3U483 | Interferon regulatory factor 2-binding protein-like           | 61.1   | 9  | 4  | 3 |       |       | 2E+07 | 2E+08 | 7E+06 | 5E+07   | 8.5E+07 |       |       |       |       |         |         |
| P50393 | Cytosolic phospholipase A2                                    | 61     | 9  | 4  | 3 |       |       |       |       |       |         |         | 3E+08 |       |       |       |         |         |
| O88339 | Epsin-1   | 60.96  | 11 | 4  | 3 |       |       | 1E+07 |       | 1E+08 | 1.9E+08 |         |       |       |       |       |         |         |
| Q9ERE6 | Myosin phosphatase Rho-interacting protein                    | 58.54  | 8  | 4  | 3 | 1E+08 |       |       |       |       |         |         |       |       |       |       |         |         |
| Q64303 | Serine/threonine-protein kinase PAK 2                         | 57.49  | 13 | 4  | 3 | 6E+07 |       |       | 8E+06 |       |         |         |       |       |       |       |         |         |
| Q9R0P4 | Sid 2057  | 57.4   | 22 | 4  | 3 | 1E+08 |       | 6E+08 | 2E+07 |       | 2.4E+08 |         |       |       |       |       |         |         |
| Q04753 | Methylosome subunit pICln                                     | 57.32  | 27 | 4  | 3 |       |       | 2E+08 | 3E+08 | 5E+08 | 4E+08   |         |       |       |       |       |         |         |
| Q3MJK5 | Cyclin-dependent kinase 12 isoform                            | 57.01  | 4  | 4  | 3 |       |       |       | 2E+08 |       | 1.4E+08 |         |       |       |       |       |         |         |
| Q9JJU6 | B-Raf protein   | 56.11  | 13 | 3  | 3 |       |       |       |       |       |         |         |       |       |       |       |         |         |
| Q8CI95 | Oxysterol-binding protein-related protein 11                  | 55.32  | 8  | 4  | 3 |       |       |       |       |       | 5E+06   |         |       |       |       |       |         |         |
| Q52K18 | Serine/arginine repetitive matrix protein 1                   | 52.61  | 4  | 3  | 3 | 1E+08 |       |       |       |       | 9E+07   | 6.6E+07 |       |       |       |       |         |         |
| P54258 | Atrophin-1  | 52.13  | 5  | 4  | 3 |       |       |       |       |       |         |         |       |       |       |       |         |         |
| P42128 | Forkhead box protein K1                                       | 49.68  | 9  | 3  | 3 |       |       |       |       |       |         |         |       |       |       |       |         |         |
| P49816 | tuberous sclerosis 2  | 49.52  | 2  | 3  | 3 |       |       |       |       |       |         |         |       |       |       |       |         |         |
| Q923A8 | Map3k7 protein  | 48.27  | 6  | 3  | 3 |       |       |       |       |       |         |         |       |       |       |       |         |         |
| P11345 | RAF proto-oncogene serine/threonine-protein kinase            | 46.98  | 9  | 3  | 3 |       |       |       |       |       |         |         |       |       |       |       |         |         |
| Q8K3I9 | Testhymin   | 45.21  | 8  | 3  | 3 |       |       |       |       |       |         |         |       |       |       |       |         |         |
| Q08122 | Transducin-like enhancer protein 3                            | 45.19  | 4  | 3  | 3 |       |       |       |       |       |         |         |       |       |       |       |         |         |
| Q3UU34 | hypothetical RNA-binding protein Lupus Lal/Cytochrome b5 cont | 44.87  | 8  | 3  | 3 |       |       |       |       |       |         |         | 2E+07 |       | 2E+08 | 2E+07 | 4130714 |         |









|        |   |        |    |    |   |       |       |       |       |       |         |         |       |       |       |         |         |         |
|--------|---|--------|----|----|---|-------|-------|-------|-------|-------|---------|---------|-------|-------|-------|---------|---------|---------|
| Q496Z1 | Bicaudal D protein  | 324.81 | 32 | 22 | 1 | 2E+10 | 7E+09 | 6E+10 | 2E+10 | 5E+09 | 3.1E+10 | 3E+08   | 6E+08 | 7E+08 | 1E+09 | 6.5E+08 |         |         |
| Q5HZB2 | Formyltetrahydrofolate dehydrogenase                                | 276.39 | 30 | 18 | 1 |       |       | 5E+08 |       |       |         | 1E+10   | 4E+09 | 6E+09 | 3E+09 | 1E+09   |         |         |
| Q04462 | Valyl-tRNA synthetase   | 271.09 | 22 | 18 | 1 | 1E+09 | 2E+08 | 1E+10 | 1E+09 | 5E+07 | 2.5E+09 |         |       |       | 1E+08 |         |         |         |
| Q5U300 | Ubiquitin-activating enzyme E1 1                                    | 243.47 | 23 | 15 | 1 | 7E+09 | 1E+09 | 2E+10 | 1E+08 | 5E+08 | 5.7E+09 |         |       | 1E+08 | 2E+08 | 6E+07   |         |         |
| Q2TL32 | ZUBR1   | 236.49 | 5  | 16 | 1 | 2E+09 | 1E+08 | 1E+10 | 3E+09 | 1E+08 | 4E+09   |         |       |       |       |         |         |         |
| Q8CGS5 | Zinc phosphodiesterase ELAC protein 2                               | 233    | 27 | 15 | 1 | 7E+09 | 3E+09 | 2E+10 | 1E+10 | 1E+09 | 9.2E+09 |         |       |       |       |         |         |         |
| P16638 | ATP-citrate synthase  | 222.54 | 18 | 14 | 1 | 2E+09 | 4E+08 | 7E+09 | 2E+08 | 4E+08 | 5.4E+09 | 7E+08   | 2E+09 | 4E+08 | 3E+08 | 1E+09   | 3.6E+08 |         |
| Q3UQ44 | Ras GTPase-activating-like protein IQGAP2 homolog                   | 195.28 | 10 | 14 | 1 | 5E+08 | 5E+08 | 9E+09 | 4E+08 | 3E+08 | 2.3E+09 |         |       |       |       |         | 6666667 |         |
| Q63081 | Protein disulfide-isomerase A6 precursor                            | 184.69 | 35 | 11 | 1 |       |       | 1E+08 |       |       |         | 7E+09   | 2E+09 | 3E+09 | 6E+09 | 4E+09   | 5.4E+08 |         |
| P11505 | Plasma membrane calcium-transporting ATPase 1                       | 169.66 | 12 | 11 | 1 |       |       |       |       |       |         |         | 2E+09 | 1E+09 | 7E+09 | 1.5E+09 |         |         |
| Q99N27 | Sorting nexin-1   | 169.33 | 23 | 12 | 1 | 1E+09 | 3E+08 | 1E+10 | 5E+09 | 5E+08 | 1.2E+09 | 1E+10   | 6E+09 | 1E+09 | 7E+09 | 5E+09   | 1.2E+08 |         |
| Q5PQW3 | Stromal cell derived factor 4                                       | 168.54 | 38 | 10 | 1 |       |       |       |       |       |         | 2E+09   | 8E+09 | 3E+09 | 5E+09 | 1E+09   | 1.2E+09 |         |
| Q5X118 | Acyl-Coenzyme A binding domain containing 3                         | 167.37 | 18 | 9  | 1 | 2E+09 | 1E+08 |       | 2E+09 | 1E+08 | 1.3E+09 | 8E+09   | 1E+09 | 3E+09 | 5E+09 | 4E+09   | 4.7E+09 |         |
| Q922D4 | SAPS domain family member 3   | 167.06 | 20 | 11 | 1 | 1E+09 | 9E+07 | 8E+09 | 1E+09 | 2E+08 | 9.9E+08 |         |       |       |       |         | 3.8E+07 |         |
| Q6P793 | Triosephosphate isomerase   | 162.55 | 63 | 11 | 1 | 2E+09 | 4E+08 | 9E+09 | 4E+08 | 5E+08 | 7.5E+09 | 1E+09   | 6E+08 | 5E+06 | 2E+09 |         |         |         |
| O08795 | Glucosidase 2 subunit beta precursor                                | 162.42 | 23 | 11 | 1 |       |       |       |       |       |         | 2E+10   | 1E+10 | 1E+10 | 2E+10 | 6E+09   | 4.1E+09 |         |
| P27046 | Alpha-mannosidase 2   | 153.97 | 11 | 10 | 1 |       |       |       |       |       |         | 1E+09   | 5E+09 | 1E+10 | 6E+08 | 1E+10   | 5.7E+09 |         |
| Q9QX70 | Epidermal growth factor receptor                                    | 146.47 | 12 | 10 | 1 |       |       |       |       |       |         | 1E+10   | 7E+09 | 2E+09 | 5E+09 | 6E+09   | 3.4E+08 |         |
| Q02248 | Beta-catenin  | 144.94 | 14 | 9  | 1 |       |       |       |       |       |         | 5E+09   | 3E+09 | 5E+08 | 4E+09 | 7E+09   | 3.9E+08 |         |
| Q8R1B4 | Eukaryotic translation initiation factor 3 subunit 8                | 142.71 | 12 | 10 | 1 | 6E+09 | 4E+09 | 1E+10 | 2E+09 | 3E+09 | 8.5E+09 | 3E+07   | 4E+08 | 3E+08 | 6E+07 | 1E+08   | 3.4E+08 |         |
| P63036 | DnaJ homolog subfamily A member 1                                   | 141.87 | 29 | 8  | 1 | 4E+09 | 9E+08 | 9E+09 | 3E+08 | 5E+08 | 5.5E+09 |         |       | 1E+08 | 1E+08 | 8E+07   |         |         |
| Q3UHD6 | sorting nexin family member 27                                      | 141.46 | 25 | 9  | 1 |       |       |       |       |       |         | 7E+07   | 2E+09 | 2E+09 | 4E+08 | 4E+09   | 1.2E+09 |         |
| P47245 | Nardilysin precursor  | 141.32 | 12 | 9  | 1 | 5E+09 | 2E+09 | 2E+10 | 1E+09 | 2E+09 | 6.9E+09 |         |       |       |       |         |         |         |
| Q9JID1 | Programmed cell death protein 4                                     | 141.08 | 33 | 10 | 1 |       |       | 2E+07 | 1E+09 | 4E+07 | 6E+07   | 3.8E+08 | 7E+08 | 6E+08 | 3E+07 | 1E+09   | 3E+09   | 1.8E+08 |
| O88902 | Tyrosine-protein phosphatase non-receptor type 23                   | 139.63 | 9  | 8  | 1 | 2E+09 | 7E+07 | 4E+09 | 2E+09 | 1E+08 | 2.8E+09 | 5E+08   | 1E+09 | 2E+09 | 9E+08 | 1E+09   | 1.1E+09 |         |
| Q4ACU6 | Shank3  | 136.24 | 8  | 9  | 1 |       |       |       |       |       |         | 2E+08   | 9E+08 | 7E+07 | 9E+08 | 1E+08   | 1.5E+08 |         |
| P11711 | Cytochrome P450 2A1   | 135.05 | 21 | 10 | 1 |       |       |       |       |       |         | 3E+09   | 3E+09 | 5E+09 | 3E+09 | 1E+10   | 1.9E+09 |         |
| Q8K3W9 | Protein phosphatase PP2C gamma                                      | 132.45 | 29 | 7  | 1 | 5E+09 |       | 8E+08 | 1E+09 | 2E+08 | 2.4E+09 |         |       |       |       |         |         |         |
| P39447 | Tight junction protein ZO-1   | 130.74 | 8  | 9  | 1 | 1E+07 | 7E+07 | 2E+09 | 2E+08 |       |         |         |       | 3E+08 |       |         |         |         |
| Q3UGV7 | UBX domain-containing protein 7                                     | 129.67 | 27 | 9  | 1 | 2E+08 | 4E+08 | 6E+09 | 1E+07 |       | 2.2E+09 |         |       |       |       |         |         |         |
| Q6AYS6 | Sorting nexin-17  | 127.32 | 26 | 8  | 1 |       |       |       |       |       |         | 2E+09   | 2E+09 | 2E+09 | 5E+08 | 3E+09   | 4E+09   |         |
| Q8BTF0 | Coatomer alpha subunit  | 126.25 | 8  | 9  | 1 | 3E+09 | 2E+08 | 2E+09 | 3E+09 | 2E+08 | 9.2E+08 | 2E+08   | 7E+09 | 5E+09 | 5E+08 | 4E+09   | 1.7E+09 |         |
| Q6A099 | Golgi-specific brefeldin A-resistance factor 1                      | 124.48 | 8  | 9  | 1 | 3E+07 | 6E+06 |       | 2E+07 | 3E+07 | 5.3E+08 |         |       | 1E+09 | 9E+08 | 1E+08   | 2E+09   | 1.6E+08 |
| Q3TZ27 | Extended synaptotagmin-2  | 124.41 | 15 | 8  | 1 |       |       |       |       |       |         |         |       | 6E+08 | 9E+08 | 5E+07   | 7E+08   | 6.2E+08 |
| Q8R311 | meningioma expressed antigen 6                                      | 120.99 | 12 | 8  | 1 |       |       | 3E+07 |       |       |         | 3E+09   | 9E+08 | 3E+08 | 6E+08 | 1E+09   | 4.8E+07 |         |
| P21775 | 3-ketoacyl-CoA thiolase A peroxisomal precursor                     | 116.56 | 24 | 7  | 1 | 2E+09 | 4E+08 | 2E+09 | 2E+08 | 3E+08 | 8E+08   | 1E+08   |       |       |       | 1E+08   |         |         |
| P22734 | Catechol O-methyltransferase  | 115.48 | 41 | 8  | 1 | 1E+10 | 5E+09 | 3E+10 | 1E+10 | 1E+09 | 1.1E+10 | 2E+09   | 2E+09 | 2E+08 | 1E+09 | 6E+08   | 6.8E+07 |         |
| Q5M9G1 | Cardiac lineage protein 1   | 114.7  | 31 | 7  | 1 | 2E+08 | 4E+07 | 4E+09 | 4E+07 | 1E+07 | 1.5E+09 |         |       |       |       |         |         |         |
| Q63014 | A-kinase anchor protein 8   | 113.98 | 24 | 8  | 1 | 2E+09 | 1E+08 | 4E+09 | 2E+09 | 1E+08 | 3.3E+09 |         |       |       |       |         |         |         |
| Q2MH90 | Optineurin  | 112.87 | 14 | 8  | 1 | 4E+07 | 2E+07 | 7E+09 | 5E+06 |       | 3E+09   |         |       |       |       |         |         |         |
| P16617 | Phosphoglycerate kinase 1   | 112.62 | 27 | 7  | 1 | 2E+07 | 2E+08 | 2E+09 |       |       |         |         |       | 5E+07 |       |         |         |         |
| P26284 | Pyruvate dehydrogenase E1 component alpha subunit somatic fo        | 111.32 | 27 | 7  | 1 | 2E+09 | 9E+08 | 3E+09 | 5E+07 | 9E+08 | 3.5E+09 | 4E+08   | 2E+08 | 5E+08 | 7E+08 |         | 3.8E+08 |         |
| Q91Y81 | Vascular endothelial cell specific protein 11                       | 111.2  | 29 | 7  | 1 |       |       |       |       |       |         | 1E+09   | 1E+08 | 4E+08 | 3E+09 | 1E+09   | 6.1E+08 |         |
| Q9R0Q7 | Prostaglandin E synthase 3  | 110.84 | 53 | 8  | 1 | 1E+09 | 4E+08 | 2E+09 | 4E+07 | 7E+08 | 2E+09   | 2E+09   | 2E+07 |       | 8E+08 |         | 4.7E+07 |         |
| P04797 | Glyceraldehyde-3-phosphate dehydrogenase                            | 110.67 | 30 | 7  | 1 | 5E+09 | 2E+07 | 2E+10 | 3E+08 |       | 4.9E+09 |         |       | 3E+08 | 3E+08 |         |         |         |
| Q6MG08 | ATP-binding cassette sub-family F member 1                          | 107.51 | 16 | 8  | 1 | 2E+08 | 5E+07 | 9E+08 | 9E+06 | 2E+07 | 3.2E+08 |         |       | 9E+07 |       |         |         |         |
| O35887 | Calumenin precursor   | 107.43 | 28 | 7  | 1 |       |       |       |       |       |         | 8E+09   | 2E+09 | 1E+09 | 5E+09 | 5E+09   | 3.3E+08 |         |
| Q62991 | Sec1 family domain-containing protein 1                             | 105.82 | 15 | 7  | 1 |       |       |       |       |       |         | 1E+09   | 7E+08 | 1E+09 | 1E+09 | 1E+08   | 9.1E+08 |         |
| Q68FR2 | Bridging integrator 2   | 103.98 | 25 | 7  | 1 |       | 1E+09 | 1E+09 |       | 1E+08 | 7.6E+08 |         |       |       |       |         |         |         |
| Q920A6 | Retinoid-inducible serine carboxypeptidase precursor                | 103.77 | 20 | 7  | 1 |       |       |       |       |       |         | 1E+09   | 1E+09 | 3E+08 | 1E+09 | 2E+09   | 1.9E+08 |         |
| Q9DBT5 | AMP deaminase 2   | 101.31 | 10 | 7  | 1 | 4E+08 |       | 9E+08 | 3E+08 |       |         | 5E+08   |       | 1E+08 | 5E+08 |         | 9.4E+07 |         |
| P13084 | Nucleophosmin   | 100.42 | 35 | 6  | 1 | 6E+08 | 1E+08 | 1E+09 | 7E+07 |       | 5.1E+08 |         | 5E+08 | 6E+08 |       | 8E+08   |         |         |
| Q3KR97 | Brain-specific angiogenesis inhibitor 1-associated protein 2-like p | 100.17 | 19 | 8  | 1 |       |       |       |       |       |         | 3E+09   | 1E+09 | 6E+07 | 4E+09 | 3E+09   |         |         |
| O35075 | Down syndrome critical region protein 3 homolog                     | 99.81  | 30 | 6  | 1 |       | 2E+08 | 2E+08 |       | 6E+07 | 1E+08   | 6E+07   | 2E+09 | 2E+09 | 6E+07 | 1E+09   | 8.1E+08 |         |
| Q55QG3 | FK506-binding protein 15  | 99.7   | 7  | 7  | 1 |       |       |       |       |       |         | 3E+09   | 6E+08 | 8E+08 | 5E+09 | 8E+08   | 1.4E+09 |         |
| Q5FWU0 | WAS protein family member 2   | 97.24  | 15 | 6  | 1 | 3E+08 | 1E+08 | 1E+09 | 3E+07 |       | 5.4E+08 | 2E+09   | 9E+08 |       | 9E+08 | 3E+09   | 1.3E+08 |         |
| Q69Z35 | Serine/threonine-protein phosphatase 4 regulatory subunit 3A        | 96.78  | 12 | 7  | 1 | 3E+08 | 7E+07 | 9E+08 | 9E+07 | 3E+07 | 3.7E+08 |         |       |       |       |         |         |         |
| Q3MID3 | Zinc finger protein 289   | 95.69  | 17 | 6  | 1 | 2E+09 | 2E+07 | 9E+08 | 2E+09 | 2E+08 | 3.1E+09 | 9E+08   | 1E+09 |       | 1E+09 | 1E+08   | 3.3E+08 |         |

|        |  |       |    |   |   |       |       |       |       |         |         |         |       |       |         |         |         |  |  |
|--------|--|-------|----|---|---|-------|-------|-------|-------|---------|---------|---------|-------|-------|---------|---------|---------|--|--|
| Q3KRF2 | High density lipoprotein binding protein                         | 92.14 | 15 | 6 | 1 | 5E+07 |       | 7E+07 | 4E+07 | 1.8E+07 |         |         |       |       |         |         |         |  |  |
| Q5M943 | THUMP domain containing 1  | 91.98 | 9  | 6 | 1 |       |       | 3E+08 |       | 1.1E+08 | 7E+08   | 3E+08   | 6E+08 | 2E+09 | 5E+07   |         |         |  |  |
| Q4V8B0 | Oxidation resistance protein 1                                   | 91.14 | 13 | 6 | 1 | 1E+09 | 4E+07 | 7E+09 | 6E+09 | 3.2E+08 |         |         |       |       |         |         |         |  |  |
| Q5I2Z0 | Syndapin III   | 90.91 | 23 | 6 | 1 | 2E+09 | 8E+07 | 4E+09 | 1E+09 | 5E+07   | 1.9E+09 |         |       |       |         |         |         |  |  |
| Q64535 | ATPase 7B  | 90.23 | 5  | 6 | 1 | 2E+08 | 1E+08 |       | 5E+08 | 6E+07   | 7.3E+08 | 2E+09   | 2E+09 | 2E+09 | 1E+09   | 2E+09   | 1.2E+09 |  |  |
| Q6MG06 | Guanine nucleotide binding protein-like 1                        | 89    | 15 | 6 | 1 |       |       |       |       |         |         |         |       |       |         |         |         |  |  |
| Q32PZ7 | Srp72 protein  | 88.43 | 28 | 6 | 1 | 6E+07 | 1E+07 | 5E+08 | 3E+08 | 3E+07   | 3.5E+08 |         |       |       |         |         |         |  |  |
| Q32Q06 | AP-1 complex subunit mu-1  | 88.14 | 22 | 6 | 1 | 1E+08 | 1E+08 | 5E+08 | 4E+07 | 5E+07   | 5.7E+07 | 4E+07   | 3E+07 | 1E+09 | 6666667 |         |         |  |  |
| P12368 | cAMP-dependent protein kinase type II-alpha regulatory subunit   | 87.77 | 18 | 5 | 1 |       |       |       |       |         |         | 8E+08   | 5E+08 | 1E+09 | 1E+09   | 1.4E+08 |         |  |  |
| P21643 | Tryptophan 23-dioxygenase  | 87.56 | 19 | 6 | 1 | 3E+08 | 4E+09 | 5E+08 | 4E+07 | 1.4E+08 | 3E+08   | 2E+09   | 1E+08 | 3E+08 | 9E+08   | 2.3E+08 |         |  |  |
| Q3U473 | WAS protein family homolog 1                                     | 87.2  | 19 | 5 | 1 | 6E+09 | 3E+09 | 2E+10 | 5E+09 | 2E+09   | 6.6E+09 |         |       |       |         |         |         |  |  |
| Q8BGC0 | HIV TAT specific factor 1  | 87.04 | 11 | 6 | 1 | 5E+07 | 4E+07 | 7E+07 | 1E+07 |         | 4.4E+07 | 2E+09   | 2E+09 | 3E+08 | 5E+09   | 7E+08   | 4.4E+08 |  |  |
| Q8C1Y8 | Vacuolar fusion protein CCZ1 homolog                             | 86.91 | 16 | 6 | 1 | 2E+09 | 2E+08 | 4E+09 | 1E+08 | 7E+06   | 6E+07   |         |       |       |         |         |         |  |  |
| P23457 | 3-alpha-hydroxysteroid dehydrogenase                             | 86.89 | 26 | 5 | 1 |       |       |       |       |         |         | 2E+09   | 5E+08 | 5E+08 | 2E+09   |         | 4.7E+08 |  |  |
| Q63068 | Phosphorylated adapter RNA export protein                        | 86.01 | 18 | 6 | 1 | 4E+09 | 1E+09 | 3E+09 | 7E+08 | 3E+08   | 4.7E+09 | 1E+08   | 6E+08 | 7E+08 | 1E+09   | 3E+08   | 2.3E+08 |  |  |
| Q9QXU8 | Cytoplasmic dynein 1 light intermediate chain 1                  | 86    | 18 | 6 | 1 | 1E+09 | 6E+08 | 6E+09 | 6E+09 | 4E+08   | 1.3E+09 |         |       |       |         |         |         |  |  |
| Q4JG03 | Mcl-1 ubiquitin ligase   | 85.81 | 2  | 6 | 1 |       |       |       |       |         |         | 9E+08   | 6E+08 | 4E+08 | 6E+08   |         |         |  |  |
| Q3U335 | Serine/threonine-protein kinase 24                               | 83.71 | 16 | 6 | 1 | 2E+07 | 1E+09 | 1E+07 | 4E+06 | 1.4E+08 |         |         | 4E+08 | 5E+08 |         |         |         |  |  |
| Q8BLK9 | Ribosomal protein S6 kinase delta-1                              | 83.5  | 5  | 5 | 1 | 1E+09 | 1E+07 | 4E+09 | 6E+07 | 6E+06   | 6E+08   | 1E+09   | 7E+07 | 9E+06 | 7E+08   |         |         |  |  |
| Q9JM80 | Phosphoprotein associated with glycosphingolipid-enriched micro  | 83    | 20 | 5 | 1 |       |       | 7E+07 |       | 7E+07   |         | 1E+08   | 8E+06 | 6E+08 | 5E+08   | 4.5E+08 |         |  |  |
| Q3U819 | SUMO-activating enzyme subunit 2                                 | 82.27 | 12 | 5 | 1 |       |       |       |       |         |         | 1E+09   |       |       | 2E+09   | 8E+08   | 1.5E+07 |  |  |
| Q9JHZ4 | GRIP1-associated protein 1                                       | 80.3  | 12 | 6 | 1 | 1E+08 |       | 2E+09 | 1E+07 | 2E+06   |         |         |       |       |         |         |         |  |  |
| O70593 | Small glutamine-rich tetratricopeptide repeat-containing protein | 79.25 | 16 | 5 | 1 | 1E+10 | 2E+09 | 2E+10 | 8E+09 | 2E+09   | 1.6E+10 | 6E+08   | 2E+08 | 9E+07 | 2E+09   | 4E+08   | 1.5E+08 |  |  |
| Q5RJP0 | Aldo-keto reductase family 1 member B7                           | 78.34 | 27 | 5 | 1 | 4E+08 | 1E+08 | 1E+09 | 2E+08 | 2E+08   | 5.9E+08 | 4E+08   | 1E+07 | 9E+07 |         |         |         |  |  |
| Q2HWE9 | Cdc42 effector short isoform                                     | 78.25 | 12 | 6 | 1 | 2E+08 | 4E+07 | 1E+09 |       |         | 7.2E+07 |         |       |       |         |         |         |  |  |
| Q5U318 | Phosphoprotein enriched in astrocytes 15                         | 77.47 | 45 | 5 | 1 |       |       | 6E+08 | 1E+07 |         | 4207818 |         |       |       |         |         |         |  |  |
| Q05764 | Beta-adducin   | 77.31 | 9  | 5 | 1 |       |       |       |       |         |         | 2E+08   | 1E+09 | 1E+09 | 9E+08   | 1E+09   | 1.5E+09 |  |  |
| Q66H15 | Regulator of microtubule dynamics protein 3                      | 76.97 | 18 | 5 | 1 |       |       | 7E+07 | 4E+07 | 4E+07   | 5E+07   | 4.8E+07 |       |       |         |         |         |  |  |
| Q68A21 | Transcriptional activator protein Pur-beta                       | 76.47 | 35 | 5 | 1 | 3E+09 | 1E+08 | 3E+08 | 2E+09 |         |         | 1E+09   | 2E+09 | 4E+08 | 9E+07   | 1.6E+09 |         |  |  |
| P41034 | Alpha-tocopherol transfer protein                                | 75.64 | 28 | 5 | 1 | 3E+09 | 7E+07 | 1E+09 | 6E+09 | 1E+07   | 2.3E+09 | 6E+08   |       |       |         |         |         |  |  |
| Q6PCR9 | Ube2o protein  | 75.51 | 9  | 5 | 1 | 4E+07 | 2E+07 | 1E+09 | 7E+07 |         | 2.7E+08 |         |       |       |         |         |         |  |  |
| Q5U211 | Sorting nexin 3  | 74.2  | 17 | 5 | 1 |       |       |       |       |         |         | 6E+09   | 3E+09 | 1E+08 | 5E+09   | 1E+09   | 2.6E+08 |  |  |
| Q5U1Z0 | Rab3 GTPase-activating protein non-catalytic subunit             | 73.98 | 5  | 5 | 1 |       |       |       |       | 2E+07   |         |         | 1E+08 |       |         |         | 5.7E+07 |  |  |
| P47856 | Glucosamine--fructose-6-phosphate aminotransferase [isomerizin   | 73.69 | 11 | 5 | 1 | 2E+09 | 3E+07 | 3E+09 | 7E+08 |         | 6E+08   |         |       |       |         |         |         |  |  |
| P19468 | Glutamate--cysteine ligase catalytic subunit                     | 73.57 | 10 | 5 | 1 |       |       |       |       | 9E+06   | 8E+06   | 3.9E+08 | 7E+08 | 1E+09 | 8E+08   | 1E+09   | 2.1E+08 |  |  |
| Q5XIF0 | Tex264 protein   | 73.56 | 22 | 5 | 1 |       |       |       |       |         |         |         |       |       |         |         |         |  |  |
| Q4QQV6 | Lymphocyte specific 1  | 73.36 | 31 | 5 | 1 | 1E+09 | 1E+08 |       |       | 2E+07   | 7.8E+08 | 5E+08   | 3E+08 |       |         |         |         |  |  |
| P07824 | Arginase-1   | 72.77 | 22 | 5 | 1 |       |       | 1E+08 | 2E+08 | 6E+06   | 5E+07   | 7E+07   | 2E+07 | 2E+07 | 1E+09   | 6E+08   | 1.5E+07 |  |  |
| P70670 | Nascent polypeptide-associated complex subunit alpha muscle-sp   | 72.2  | 3  | 4 | 1 | 3E+09 | 1E+09 | 9E+09 | 2E+09 | 1E+09   | 6.9E+09 | 2E+08   | 1E+09 | 8E+08 | 5E+08   |         |         |  |  |
| Q5XIG8 | Serine/threonine kinase receptor associated protein              | 71.79 | 23 | 5 | 1 | 5E+08 | 2E+08 | 2E+09 | 2E+08 | 6E+07   | 1E+09   |         |       |       |         |         |         |  |  |
| P18653 | Ribosomal protein S6 kinase alpha-1                              | 71.07 | 9  | 4 | 1 |       |       | 1E+08 |       | 2E+07   |         |         |       | 1E+08 | 6E+08   |         |         |  |  |
| Q32P49 | Mesoderm induction early response 1 isoform b                    | 70.64 | 17 | 5 | 1 | 3E+08 | 6E+07 | 2E+09 | 1E+08 |         | 3.2E+08 |         |       |       |         |         |         |  |  |
| Q3TX11 | influenza virus NS1A binding protein                             | 70.51 | 12 | 4 | 1 | 2E+09 | 3E+08 | 4E+09 | 2E+09 | 2E+08   | 2.2E+09 |         |       |       |         |         |         |  |  |
| O35314 | Secretogranin-1 precursor  | 70.5  | 10 | 4 | 1 |       |       |       |       |         |         |         | 2E+08 | 6E+07 | 3E+08   | 2E+08   | 2.7E+08 |  |  |
| O35344 | Importin alpha-3 subunit   | 70.01 | 12 | 5 | 1 |       |       | 2E+08 | 7E+08 |         |         |         |       |       |         |         |         |  |  |
| P09216 | Protein kinase C epsilon type                                    | 70.01 | 6  | 4 | 1 | 7E+07 |       | 7E+07 | 2E+08 |         | 4E+07   | 2E+08   | 1E+08 | 2E+08 | 1.8E+08 |         |         |  |  |
| Q80ZB2 | ATP-binding cassette 1   | 69.78 | 3  | 5 | 1 |       |       |       |       |         |         |         | 6E+08 | 5E+07 |         |         |         |  |  |
| Q3UW92 | Cask protein   | 69.59 | 12 | 4 | 1 |       |       |       |       |         |         |         | 7E+07 | 2E+07 | 4E+08   |         |         |  |  |
| Q5BK33 | P55 protein  | 69.29 | 17 | 5 | 1 |       |       |       |       |         |         | 2E+08   | 1E+08 | 1E+07 | 3E+08   | 2E+09   | 3.7E+08 |  |  |
| Q6P744 | Thyroid hormone receptor interactor 10                           | 68.34 | 14 | 4 | 1 |       |       | 5E+08 |       | 3.7E+08 |         |         |       |       |         |         |         |  |  |
| Q3KRD6 | Xylosyltransferase II  | 67.72 | 7  | 5 | 1 |       |       |       |       |         |         |         | 7E+08 | 3E+08 | 4E+08   | 4.2E+08 |         |  |  |
| P25113 | Phosphoglycerate mutase 1  | 67.14 | 29 | 4 | 1 | 1E+07 | 1E+08 | 1E+09 | 3E+07 | 6E+06   | 7E+07   |         |       |       |         |         |         |  |  |
| Q3U2K9 | weakly similar to C-MYC promoter-binding protein IRLB            | 67.02 | 5  | 4 | 1 | 1E+07 |       | 2E+08 |       |         |         | 6E+06   | 2E+07 | 1E+08 |         |         |         |  |  |
| Q5M7A4 | Ubiquitin-activating enzyme E1 domain-containing protein 1       | 66.97 | 17 | 4 | 1 | 2E+07 | 9E+07 | 1E+09 | 2E+07 | 5E+07   | 9.1E+07 |         |       |       |         |         |         |  |  |
| O08547 | Vesicle-trafficking protein SEC22b                               | 66.62 | 20 | 4 | 1 |       |       |       |       |         |         | 3E+08   | 2E+09 | 2E+08 | 8E+08   | 2.4E+08 |         |  |  |
| P38438 | TGF-beta receptor type-2 precursor                               | 66.52 | 10 | 4 | 1 |       |       |       |       |         |         | 2E+08   | 8E+08 | 1E+09 |         |         |         |  |  |
| Q62871 | Cytoplasmic dynein 1 intermediate chain 2                        | 66.5  | 11 | 4 | 1 | 2E+08 |       |       |       |         |         | 5E+08   | 6E+08 | 7E+08 | 5E+08   | 9E+08   | 1.1E+09 |  |  |
| Q3UM85 | Rab11 family-interacting protein 5                               | 65.5  | 9  | 4 | 1 |       |       |       |       |         |         | 8E+08   | 6E+07 | 9E+07 | 4E+08   | 3.8E+08 |         |  |  |

|        |  |       |    |   |   |  |       |       |       |       |         |         |       |         |
|--------|--|-------|----|---|---|--|-------|-------|-------|-------|---------|---------|-------|---------|
|        |  | 65.13 | 10 | 4 | 1 |  |       |       |       | 8E+07 | 1E+08   |         | 2E+08 | 7500000 |
| Q21120 | Max-like factor protein  | 64.85 | 29 | 4 | 1 |  |       |       |       |       |         |         |       |         |
| Q9JKC9 | AP1 subunit gamma-binding protein 1                              | 64.22 | 11 | 4 | 1 |  | 7E+07 | 1E+09 | 4E+08 | 4E+07 | 1.1E+09 |         | 2E+08 |         |
| Q3U5E1 | E3 ligase for inhibin receptor homolog                           | 64.21 | 10 | 4 | 1 |  | 2E+07 | 7E+08 | 8E+08 | 2E+07 | 1.1E+07 |         |       |         |
| Q8CIN9 | Riffylin   | 64.2  | 24 | 4 | 1 |  |       |       |       |       |         | 3E+08   | 4E+08 | 2.3E+07 |
| P31044 | Phosphatidylethanolamine-binding protein 1                       | 64.1  | 38 | 4 | 1 |  | 5E+07 | 2E+09 |       | 4E+07 |         |         |       |         |
| Q5FVT1 | RalA-binding protein 1   | 63.55 | 8  | 4 | 1 |  | 1E+08 |       |       | 3E+07 |         |         |       |         |
| Q3TIR3 | Synembryn-A  | 63.46 | 13 | 4 | 1 |  | 9E+08 | 5E+07 | 4E+09 | 1E+07 | 1.2E+09 |         |       |         |
| Q811I5 | Trip11 protein   | 63.14 | 14 | 4 | 1 |  |       |       |       |       |         | 1E+09   | 3E+08 | 7E+08   |
| Q5QD49 | A kinase anchoring protein 12 gamma                              | 63.1  | 6  | 4 | 1 |  | 5E+08 | 2E+08 | 5E+08 | 2E+07 | 2E+08   | 2E+08   | 3E+07 | 4E+07   |
| Q5I034 | Hypothetical protein RGD1311899                                  | 62.9  | 27 | 4 | 1 |  |       | 2E+08 | 2E+08 | 2E+08 | 1.8E+09 |         |       |         |
| Q9CT10 | Ran-binding protein 3  | 62.82 | 11 | 4 | 1 |  | 8E+07 |       |       | 3E+07 | 5.2E+07 |         |       |         |
| Q5RKG9 | Eukaryotic translation initiation factor 4B                      | 62.42 | 10 | 4 | 1 |  |       | 2E+08 | 2E+08 | 1E+09 | 6E+06   | 1.8E+09 | 2E+07 | 3.5E+07 |
| P35831 | Tyrosine-protein phosphatase non-receptor type 12                | 62.07 | 7  | 4 | 1 |  | 2E+07 | 1E+09 | 5E+07 |       | 9E+07   | 2E+08   |       |         |
| Q3THK3 | General transcription factor IIF polypeptide 1                   | 61.37 | 9  | 4 | 1 |  | 9E+08 | 7E+09 |       |       |         |         |       |         |
| Q5FWX7 | Oxysterol-binding protein  | 61.33 | 10 | 4 | 1 |  |       | 4E+07 | 1E+08 |       | 9.3E+07 | 2E+08   |       |         |
| Q8VHT6 | Arsenite methyltransferase                                       | 61    | 17 | 4 | 1 |  | 2E+08 | 6E+08 | 3E+08 | 6E+07 | 6.6E+08 |         |       |         |
| Q3UHH1 | Z310021P13Rik protein  | 60.29 | 3  | 4 | 1 |  | 8E+06 | 1E+07 |       |       |         |         |       |         |
| Q3KRD1 | Hypothetical protein LOC312777                                   | 60.04 | 10 | 3 | 1 |  | 5E+08 | 6E+07 |       | 2E+08 | 2E+08   | 1.4E+08 |       |         |
| P49138 | MAP kinase-activated protein kinase 2                            | 59.72 | 17 | 4 | 1 |  | 3E+08 | 3E+08 | 1E+09 | 1E+09 | 4E+08   | 1.5E+09 |       |         |
| Q62894 | Extracellular matrix protein 1 precursor                         | 59.67 | 16 | 5 | 1 |  | 1E+08 |       |       |       |         |         | 3E+08 | 2E+09   |
| Q2LC84 | Numb isoform i/i   | 59.33 | 8  | 4 | 1 |  |       |       |       |       |         | 2E+07   | 4E+08 | 1E+09   |
| P48193 | Protein 4.1  | 59.19 | 5  | 4 | 1 |  |       |       |       |       | 5E+08   | 1E+09   | 8E+06 | 3E+08   |
| P08290 | Asialoglycoprotein receptor 2                                    | 58.88 | 18 | 4 | 1 |  |       |       |       |       | 1E+09   | 6E+09   | 1E+08 | 1E+09   |
| P01946 | Hemoglobin subunit alpha-1/2                                     | 58.86 | 37 | 3 | 1 |  |       |       |       |       |         |         |       | 8E+09   |
| Q35430 | Amyloid beta A4 precursor protein-binding family A member 1      | 58.69 | 5  | 3 | 1 |  | 5E+09 | 1E+08 | 9E+09 | 6E+09 | 5E+06   | 3E+09   | 2E+09 | 3E+09   |
| P41413 | Proprotein convertase subtilisin/kexin type 5 precursor          | 57.1  | 3  | 3 | 1 |  |       |       |       |       |         | 1E+09   | 6E+08 | 2E+08   |
| Q3UMY5 | echinoderm microtubule associated protein like 4                 | 57.07 | 5  | 4 | 1 |  |       |       | 2E+08 |       |         |         |       | 1E+09   |
| Q8BHU7 | Dyslexia-associated protein KIAA0319-like protein                | 56.42 | 5  | 4 | 1 |  |       |       |       |       |         | 2E+08   | 2E+08 | 2E+09   |
| Q3KRC5 | tRNA-dihydrouridine synthase 3-like                              | 55.88 | 10 | 3 | 1 |  | 5E+08 | 2E+08 | 2E+08 |       | 1.3E+09 |         |       |         |
| P67999 | Ribosomal protein S6 kinase beta-1                               | 55.83 | 8  | 3 | 1 |  |       | 9E+07 |       |       | 2E+08   |         |       |         |
| O88900 | Growth factor receptor-bound protein 14                          | 55.46 | 15 | 4 | 1 |  |       |       | 5E+06 |       |         |         |       | 2.6E+07 |
| P62161 | Calmodulin   | 55.07 | 29 | 4 | 1 |  | 2E+08 | 2E+08 | 1E+09 |       | 3E+08   | 2E+09   |       | 2E+09   |
| P26453 | Basigin precursor  | 54.85 | 12 | 3 | 1 |  |       |       |       |       |         | 3E+08   | 7E+06 | 4E+07   |
| Q3TA40 | hypothetical protein   | 54.59 | 16 | 4 | 1 |  | 1E+07 | 1E+07 | 4E+09 |       | 4E+08   |         |       | 1E+09   |
| Q3UMP4 | Plasminogen activator inhibitor 1 RNA-binding protein            | 53.51 | 16 | 4 | 1 |  |       |       |       |       |         | 3E+08   | 2E+08 | 5E+06   |
| P22449 | Hepatocyte nuclear factor 4-alpha                                | 53.27 | 14 | 4 | 1 |  |       | 9E+07 |       | 1E+08 | 3.3E+07 | 2E+08   | 2E+08 | 3E+07   |
| P02692 | Fatty acid-binding protein liver                                 | 52.97 | 36 | 3 | 1 |  | 4E+09 | 9E+08 | 8E+09 | 2E+07 | 5E+08   | 8E+08   |       |         |
| Q99K30 | Epidermal growth factor receptor kinase substrate 8-like protein | 52.75 | 7  | 3 | 1 |  |       |       |       | 2E+08 |         |         |       |         |
| Q6TLK4 | CIN85-associated multi-domain containing RhoGAP 1                | 52.22 | 7  | 3 | 1 |  | 5E+06 |       | 3E+08 |       |         |         |       |         |
| Q6AXQ3 | Proto-oncogene tyrosine-protein kinase Yes                       | 52.04 | 10 | 3 | 1 |  |       |       |       |       |         | 8E+06   | 1E+09 | 2E+09   |
| Q61687 | Transcriptional regulator ATRX                                   | 51.97 | 1  | 3 | 1 |  |       |       |       |       |         |         |       | 2.5E+09 |
| Q3UA37 | Glutamine-rich protein 1   | 50.93 | 7  | 3 | 1 |  |       | 6E+07 | 8E+08 |       | 1E+07   | 4.4E+08 |       |         |
| Q6AY21 | Ras-GTPase-activating protein-binding protein 2                  | 50.25 | 10 | 3 | 1 |  |       |       | 1E+08 | 6E+06 |         | 3E+08   | 3E+07 | 2E+08   |
| O35254 | Golgi reassembly-stacking protein 1                              | 50.08 | 15 | 3 | 1 |  |       |       |       |       | 1E+08   | 2E+07   | 2E+09 | 1E+09   |
| O54916 | RalBP1-associated Eps domain-containing protein 1                | 49.54 | 6  | 3 | 1 |  | 2E+08 |       | 4E+08 |       | 1E+07   |         | 3E+08 |         |
| Q3MHT9 | Niban-like protein   | 49.21 | 15 | 3 | 1 |  |       | 4E+07 |       | 3E+06 | 8.5E+08 | 7E+08   | 3E+08 | 2E+08   |
| Q7TPE5 | Solute carrier family 7 member 6 opposite strand                 | 48.93 | 13 | 3 | 1 |  |       | 2E+08 | 2E+09 |       | 1E+08   |         |       | 1.6E+07 |
| Q9JHK1 | Caspase-9 long isoform   | 47.73 | 14 | 3 | 1 |  | 8E+07 |       | 1E+09 | 8E+08 |         | 1.4E+07 |       |         |
| P59672 | Ankyrin repeat and SAM domain-containing protein 1A              | 47.46 | 2  | 3 | 1 |  | 1E+08 | 5E+07 | 4E+08 |       |         | 3.4E+07 |       |         |
| Q66H43 | Hypothetical protein LOC497934                                   | 47.39 | 23 | 3 | 1 |  |       |       |       |       |         | 2E+08   | 6E+07 |         |
| Q9CSN5 | Peptidyl-prolyl cis-trans isomerase-like 4                       | 47.03 | 13 | 3 | 1 |  |       | 2E+07 |       | 2E+08 | 5E+07   | 3.7E+07 |       |         |
| Q9JHX4 | Caspase-8  | 46.82 | 13 | 3 | 1 |  |       |       | 7E+08 |       |         |         |       |         |
| Q9QYM2 | Poly(ADP-ribose) glycohydrolase                                  | 46.82 | 5  | 3 | 1 |  |       |       |       | 3E+06 |         |         |       |         |
| Q01062 | cGMP-dependent 3'5'-cyclic phosphodiesterase                     | 46.77 | 5  | 3 | 1 |  |       |       |       |       | 4.3E+08 |         |       | 2.6E+07 |
| Q5XIN7 | Protein O-linked-mannose beta-12-N-acetylglucosaminyltransferase | 46.38 | 8  | 3 | 1 |  |       |       |       |       |         |         | 3E+08 |         |
| Q571D7 | Melanoma inhibitory activity protein 3                           | 45.95 | 10 | 3 | 1 |  |       |       |       |       |         | 2E+09   | 8E+08 | 3E+08   |
| Q8C0D4 | Rho-GTPase-activating protein 12                                 | 45.86 | 6  | 3 | 1 |  | 6E+07 |       | 7E+07 | 9E+07 |         |         |       | 4.4E+08 |
| Q63187 | Transcription elongation factor B polypeptide 3                  | 44.55 | 5  | 3 | 1 |  |       |       | 5E+08 |       |         |         |       | 5.1E+07 |





|        |  |       |    |   |   |       |       |       |             |
|--------|--|-------|----|---|---|-------|-------|-------|-------------|
| P15975 | Inactive ubiquitin carboxyl-terminal hydrolase 53      | 25.92 | 1  | 2 | 1 | 1E+08 |       |       |             |
| Q3UPB2 | Novel protein  | 25.9  | 3  | 2 | 1 |       | 2E+08 |       |             |
| Q8K4R1 | Barmotin   | 25.79 | 5  | 2 | 1 |       |       |       | 2E+08       |
| Q35738 | Krueppel-like factor 12                                | 25.4  | 2  | 2 | 1 | 1E+09 |       | 2E+09 |             |
| Q5U2Z7 | Rho GTPase activating protein 24                       | 25.38 | 10 | 2 | 1 |       |       |       |             |
| Q5DTP4 | MKIAA4082 protein                                      | 25.24 | 4  | 2 | 1 |       |       |       |             |
| P97573 | Inositol polyphosphate 5' phosphatase Ship             | 25.08 | 7  | 2 | 1 | 2E+08 | 6E+07 | 1E+07 |             |
| Q3TMC2 | Rho GTPase activating protein 6                        | 24.93 | 3  | 2 | 1 | 1E+08 |       |       |             |
| P21744 | Insulin-like growth factor-binding protein 4 precursor | 24.91 | 3  | 2 | 1 |       |       |       |             |
| Q5HZB6 | Splicing factor arginine/serine-rich 16 isoform L      | 24.7  | 11 | 2 | 1 |       |       |       | 4E+08 4E+08 |
| Q1AAU4 | ASAP1 splice variant c                                 | 24.58 | 5  | 2 | 1 |       |       |       |             |
| Q9QZK2 | Breast cancer anti-estrogen resistance protein 3       | 24.48 | 3  | 2 | 1 |       |       |       |             |
| Q640Q1 | AT rich interactive domain 1A                          | 24.35 | 3  | 2 | 1 |       |       |       |             |
| Q3ZAQ4 | Autophagy 9-like 1 protein                             | 24.22 | 2  | 2 | 1 | 7E+07 |       |       |             |
| Q5XIL4 | SH3 domain protein 4                                   | 24.08 | 3  | 2 | 1 |       |       |       |             |
| Q8BHW0 | similar to HYPOTHETICAL 139.5 kDa PROTEIN              | 23.94 | 3  | 2 | 1 |       |       |       |             |
| Q569Y6 | Ubiquitin-conjugating enzyme E2 variant 1              | 23.59 | 2  | 2 | 1 |       |       |       |             |
| Q3UMF0 | Cordon-bleu protein-like 1                             | 23.45 | 14 | 2 | 1 | 2E+07 |       |       |             |
|        |  | 21.88 | 2  | 2 | 1 |       |       |       |             |

(a) Accession numbers (Acc #) are from UniProt database.

(b) Protein score as calculated by Spectrum Mill Software



































Electronic Supplementary Material (ESI) for Molecular BioSystems

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|                                   |   |                 |        |  |         |         |         |         |         |         |   |         |         |         |         |         |
|-----------------------------------|---|-----------------|--------|--|---------|---------|---------|---------|---------|---------|---|---------|---------|---------|---------|---------|
| KEPSPGTDVFTPGSPDPCQOR             | 3 | S790s           | P26431 | Sodium/hydrogen exchanger 1                              | 1.6E+08 | 0       | 0       | 0       | 2E+08   | 1.1E+08 | 0 | 5.3E+08 | 0       | 1.2E+08 | 1.2E+08 | 2.8E+08 |
| TRSPDVISSASTALSQDPIEASEALS        | 3 | T732t           | Q3ZAV8 | Enhancer of mRNA-decapping protein 4                     | 0       | 6.8E+08 | 0       | 0       | 1.9E+08 | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| KVPEPsPVTR                        | 2 | S1241s          | Q9QXL2 | Kinesin family member 21A                                | 0       | 0       | 0       | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| RPDPsDEDEYERER                    | 3 | S155s           | Q6AY02 | RNA binding motif protein 17                             | 0       | 0       | 0       | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| NSDsNLISLDGLDNEVK                 | 2 | S275s           | Q8BJI6 | hypothetical Tetraatricopeptide repeat                   | 0       | 0       | 0       | 0       | 0       | 1.7E+09 | 0 | 0       | 0       | 0       | 0       | 0       |
| RTQSSGDQGRPQEELHAEDLQK            | 4 | T552t           | Q3MID5 | Phosphatidylinositol-4-phosphate 5-kinase, type I, gamma | 0       | 0       | 0       | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 3.7E+07 | 0       |
| TQSSGDQGRPQEELHAEDLQK             | 3 | S554s           | Q3MID5 | Phosphatidylinositol-4-phosphate 5-kinase, type I, gamma | 0       | 1.1E+08 | 0       | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| GGGGGGNNGGNGGAsGSPGGGGSGPRPtAsR   | 2 | S69s S84s       | Q3U3E2 | similar to ALS2CR13 protein                              | 0       | 0       | 0       | 0       | 0       | 0       | 0 | 7.5E+08 | 0       | 0       | 0       | 0       |
| TSPVATQGTASVTR                    | 2 | T104t           | Q3U3E2 | similar to ALS2CR13 protein                              | 0       | 0       | 2E+07   | 0       | 4.5E+07 | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| HLSTSDDEPLSSVSHAAK                | 3 | S275*           | Q5U2Z5 | Cap-specific mRNA (nucleoside-2'-O)-methyltransferase 1  | 6.3E+08 | 0       | 9.7E+08 | 0       | 9.3E+08 | 2.4E+08 | 0 | 0       | 0       | 0       | 0       | 0       |
| GRSPQPAEEDEDDFDTLVAIDTYNCDLHFK    | 3 | S195s           | Q8VDM6 | Heterogeneous nuclear ribonucleoprotein U-like protein 1 | 0       | 7.9E+07 | 4E+08   | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| sQPQPAEEDEDDFDTLVAIDTYNCDLHFK     | 3 | S195s           | Q8VDM6 | Heterogeneous nuclear ribonucleoprotein U-like protein 1 | 0       | 0       | 0       | 0       | 0       | 1.6E+08 | 0 | 0       | 0       | 0       | 0       | 0       |
| DSSESQLASTESDKPTTGR               | 2 | S67s            | Q8BH50 | Uncharacterized protein C18orf25 homolog                 | 6.2E+07 | 1.9E+08 | 4.9E+07 | 3.7E+08 | 0       | 1E+08   | 0 | 0       | 0       | 0       | 0       | 0       |
| RDSSESQLASTESDKPTTGR              | 2 | T74t            | Q8BH50 | Uncharacterized protein C18orf25 homolog                 | 0       | 2.7E+08 | 0       | 2.7E+08 | 2.3E+08 | 1.3E+08 | 0 | 0       | 0       | 0       | 0       | 0       |
| QGsFTIDKPSSNIPIELPHINK            | 3 | S789s           | Q91Y79 | KARP-1-binding protein 1                                 | 3.7E+08 | 1.6E+08 | 7.7E+07 | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| QKsEEPSVSLPFLQTLALLR              | 3 | S403s           | Q91Y79 | KARP-1-binding protein 1                                 | 0       | 1.8E+08 | 0       | 3.4E+07 | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| AKTPEPFDSETR                      | 3 | T168t           | Q91V36 | Nuclear receptor-binding protein 2                       | 0       | 0       | 6.8E+07 | 0       | 1.8E+08 | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| TVSNQHQSTESQDNDQPDYDVSAsDEDTDVETR | 3 | S397s           | Q66H91 | G protein-coupled receptor kinase-interactor 2           | 0       | 0       | 1.1E+08 | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| EGLRPDGTTFSTFCGTPNYIAPEILR        | 3 | S401s           | Q3TJJ5 | protein kinase C, iota                                   | 6.3E+07 | 0       | 8.9E+07 | 3.6E+08 | 7E+07   | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| DAQSLsEDRGEDEPSSQVTSQTYSK         | 3 | S157s           | Q5PQX1 | Torsin-1A-interacting protein 1                          | 0       | 0       | 0       | 0       | 0       | 0       | 0 | 2.8E+08 | 0       | 0       | 0       | 0       |
| SGTSTPTTPGSTAITPtGpPSYSR          | 3 | T1611t          | P15146 | Microtubule-associated protein 2                         | 0       | 0       | 0       | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| VDHGAEIItQSPSR                    | 2 | T1814t          | P15146 | Microtubule-associated protein 2                         | 0       | 1.2E+08 | 1.4E+08 | 1E+08   | 1.4E+08 | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| KLEESASFESLSPSRPDSPTR             | 4 | S2473s          | P70478 | Adenomatous polyposis coli protein                       | 0       | 0       | 6.9E+07 | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| LEESASFESLSPSRPDSPTR              | 3 | T2475t          | P70478 | Adenomatous polyposis coli protein                       | 0       | 0       | 2.6E+07 | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| FGSPQDRDPNWIGDR                   | 3 | S262s           | Q8K3X0 | cancer susceptibility candidate 3,                       | 0       | 0       | 0       | 0       | 0       | 0       | 0 | 0       | 2.1E+08 | 0       | 0       | 0       |
| GYTVGERQsGDGQESTEPVENK            | 3 | S145s           | Q8K3X0 | cancer susceptibility candidate 3,                       | 0       | 0       | 0       | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| QSNfFPFFSDGLAR                    | 2 | T293t           | Q3UFW9 | TBC1 domain family member 2A.                            | 0       | 0       | 0       | 1E+08   | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| GPENPQVEVLsEEGEEEEEEEDLSLAEK      | 3 | S247s           | Q6ZQ93 | Ubiquitin carboxyl-terminal hydrolase 34                 | 0       | 0       | 2.2E+08 | 0       | 0       | 2.3E+08 | 0 | 0       | 0       | 0       | 0       | 0       |
| RPDAPAA'sPPPAESGSAGHR             | 3 | S48s            | Q5M9G6 | Smad nuclear interacting protein 1                       | 7.6E+07 | 4.1E+08 | 1.3E+08 | 2.6E+08 | 1.7E+08 | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| KVsVSESNVLLDEEVLTDPK              | 3 | S2578s          | P97526 | Neurofibromin  | 0       | 0       | 1.9E+08 | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| sFDHLSDTK                         | 2 | S2524s          | P97526 | Neurofibromin  | 0       | 0       | 0       | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| AERNsTEALVPLTR                    | 3 | S194s           | Q4V889 | Ring finger protein 12                                   | 3.6E+07 | 6.8E+07 | 0       | 0       | 1.1E+08 | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| EALVSQPsSPGLLQSLLR                | 3 | S896s           | P41230 | Jumonji/ARID domain-containing protein 1C                | 0       | 0       | 0       | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| LLDLSDSVAsPSADETDGNLPESR          | 3 | S1105s          | P70336 | Rho-associated protein kinase 2                          | 0       | 0       | 9.1E+08 | 0       | 5.1E+08 | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| TLSVAAAFNEDDSPEEMPPPEAK           | 3 | S105s           | Q3KQH9 | PEST proteolytic signal-containing nuclear protein       | 0       | 0       | 0       | 0       | 6.5E+08 | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| AAQASLsALNDPSAVEQALQEK            | 3 | S935s           | O55147 | Rattus norvegicus utrophin                               | 0       | 0       | 0       | 0       | 1.1E+08 | 3.7E+07 | 0 | 0       | 0       | 0       | 0       | 0       |
| DLENFVWLQEAETIANVLADAsQR          | 3 | T2452t* S2460s* | O55147 | Rattus norvegicus utrophin                               | 0       | 0       | 0       | 4E+08   | 0       | 1.2E+08 | 0 | 0       | 0       | 0       | 0       | 0       |
| TGTGsPFAGNSPAR                    | 2 | S559s           | Q6PAI8 | BC057627 protein   | 0       | 0       | 0       | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| TNPPTQKPPsPPVSGR                  | 2 | S178s           | Q3TJ64 | abl-interactor 1,  | 6E+07   | 6.6E+08 | 1.7E+08 | 1.6E+08 | 4.2E+08 | 9.7E+07 | 0 | 2.1E+08 | 0       | 1E+08   | 0       | 1.9E+08 |
| LtPPPADLPLALPAHGLWSR              | 3 | T434t           | Q61127 | NGFI-A-binding protein 2                                 | 0       | 0       | 1.7E+08 | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| SPLEGEKLSPLGGPAGGAPDR             | 3 | S171s           | Q61127 | NGFI-A-binding protein 2                                 | 0       | 0       | 1.5E+08 | 9.5E+07 | 1.3E+08 | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| SCtSSPPLNLSAR                     | 2 | T680t           | Q62947 | Transcription factor 8                                   | 0       | 0       | 1.4E+08 | 0       | 9.8E+07 | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| GSSQPNLTSYSYEQYEGK                | 2 | S173s           | Q505I9 | Epsin 2, isoform b                                       | 7E+07   | 3.2E+08 | 3.3E+08 | 5.1E+08 | 3.4E+08 | 0       | 0 | 3.4E+07 | 0       | 0       | 0       | 0       |
| TTSDFEFESQSLTSASSKPSSAR           | 3 | S488s           | Q505I9 | Epsin 2, isoform b                                       | 1.1E+08 | 0       | 4.4E+07 | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| LPAYLAtsPIPTEDQFFK                | 2 | S106s           | Q3UWC4 | lipin 2  | 0       | 0       | 0       | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| sDSELEVKPSLESLLR                  | 2 | S243s           | Q3UWC4 | lipin 2  | 0       | 5.1E+08 | 5.1E+08 | 0       | 0       | 4.6E+08 | 0 | 0       | 0       | 0       | 0       | 0       |
| DNPSPEDQLDDIKR                    | 3 | S165s           | Q9D4C5 | ELL-associated factor 1                                  | 0       | 0       | 0       | 0       | 1.4E+08 | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| TSPKDNPsPEPQLDDIK                 | 3 | S165s           | Q9D4C5 | ELL-associated factor 1                                  | 0       | 0       | 0       | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| sSPPLRTPDVLSSGPAVR                | 3 | S682s           | Q3U3M8 | ribosomal protein S6 kinase, polypeptide 4               | 0       | 1.4E+08 | 0       | 5E+08   | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| sQSTSLLEGQALETR                   | 2 | S386s           | Q91Y80 | SH3 domain-binding protein 5                             | 6.4E+07 | 0       | 4.2E+08 | 0       | 0       | 0       | 0 | 6.9E+07 | 7.5E+07 | 0       | 1.5E+08 | 1.6E+08 |
| RGSTTSIPsPQSDGGDNPNQDDDR          | 3 | S376s           | Q8CS25 | Protein MB21D2   | 0       | 8.7E+07 | 1.1E+08 | 6.6E+07 | 0       | 5.4E+07 | 0 | 6.8E+07 | 8.6E+07 | 0       | 3.9E+07 | 5.5E+07 |
| LPHISsHPLLQDLAAAR                 | 3 | S829s           | Q3UH33 | AW555464 protein   | 0       | 0       | 0       | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| SQASPLDYVPFFNQDPSPSCGEGR          | 2 | T192t           | Q5XI81 | Protein TSSC4  | 0       | 3.6E+08 | 3E+08   | 0       | 0       | 4.7E+08 | 0 | 0       | 0       | 0       | 0       | 0       |
| HSQsLGCYPVELER                    | 3 | S1017s          | Q9JK71 | Scaffolding protein SLIPR                                | 0       | 0       | 0       | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| QPEDESQAfSfSQGsPR                 | 3 | S833s           | Q9JK71 | Scaffolding protein SLIPR                                | 0       | 0       | 0       | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| NWEDEDFYsDDDTFLDR                 | 2 | S204s           | O54716 | Kanadapatin  | 0       | 0       | 0       | 0       | 0       | 1.2E+08 | 0 | 0       | 0       | 0       | 0       | 0       |
| GHAGGQRPEPsPDGPAPPTR              | 3 | S295s           | Q5D202 | REM2   | 0       | 0       | 0       | 5.1E+07 | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| QAsPSGTPTEADTLLK                  | 2 | S27s            | Q5D202 | REM2   | 1.5E+09 | 1.5E+08 | 1.7E+09 | 3.2E+09 | 9.4E+08 | 1.3E+09 | 0 | 0       | 0       | 0       | 0       | 0       |
| sLSAPGNLLTK                       | 2 | S508s           | O88831 | Calcium/calmodulin-dependent protein kinase kinase 2     | 0       | 0       | 0       | 0       | 3.7E+07 | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| VGDTEKPEPERsPPNR                  | 3 | S261s           | Q3TQI7 | Protein C9orf78 homolog                                  | 0       | 0       | 0       | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| GEPNvsYICSR                       | 2 | S215s           | P18266 | Glycogen synthase kinase-3 beta                          | 4.2E+08 | 1.3E+09 | 2.1E+08 | 6.1E+08 | 0       | 3.3E+07 | 0 | 2.5E+07 | 0       | 0       | 0       | 0       |
| SSTvTEAPiAVVTSR                   | 2 | T333t           | Q148U2 | Serine/threonine-protein kinase Nek9                     | 0       | 0       | 0       | 0       | 0       | 8.2E+07 | 0 | 0       | 0       | 0       | 0       | 0       |
| GAPASS'TPAEAEELAGEGisVNTGPK       | 3 | S41s            | Q4V8L9 | Phosducin-like protein                                   | 0       | 1.2E+08 | 0       | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| STPESGESDKESVGSLSGNEGSR           | 3 | S464s           | Q8CF50 | Za20d1 protein   | 0       | 0       | 0       | 0       | 1.3E+08 | 6.5E+07 | 0 | 0       | 0       | 0       | 0       | 0       |
| DSAsPSTSSFCfLgVPVATSShVPIQK       | 3 | S96s            | Q3TU30 | cullin 4B  | 0       | 0       | 0       | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| EDFDSsSSSSTPPQPR                  | 2 | T82t            | Q3TU30 | cullin 4B  | 0       | 0       | 0       | 1.1E+08 | 9.7E+07 | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| NEDGRDEFGQLsPGVQYQQR              | 3 | S51s            | O35832 | Serine/threonine-protein kinase PCTAIRE-3                | 0       | 6.2E+08 | 0       | 0       | 8.3E+08 | 1.2E+09 | 0 | 0       | 0       | 0       | 0       | 0       |
| LDHINFVFEPS'DPDPAK                | 3 | S307s           | Q8B562 | Protein SMG8   | 0       | 0       | 0       | 2E+07   | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| ASnLEGLVfPFGESSLAPGSyK            | 3 | Y399y S381s     | Q3UYU7 | zinc finger CCCH type domain containing 5                | 0       | 0       | 0       | 0       | 0       | 4.4E+07 | 0 | 0       | 0       | 0       | 0       | 0       |
| SHREPPsPADVPEK                    | 3 | S319s           | Q3V3Q7 | Pacs2 protein  | 0       | 0       | 0       | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| SLTsSGESLYHVLGLDK                 | 2 | S10s            | P60904 | Dnajc5 protein   | 0       | 0       | 0       | 0       | 0       | 0       | 0 | 0       | 0       | 0       | 0       | 0       |
| NsFTPLSSSNTIR                     | 2 | S469s           | P70265 | 6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 2    | 0       | 0       | 0       | 4.5E+08 | 1.3E+09 | 3.8E+07 | 0 | 0       | 0       | 0       | 0       | 0       |
| RNSFPLSSSNTIR                     | 3 | T471t           | P70265 | 6-phosphofructo-2-kinase/fructose-2,6-biphosphatase 2    | 0       | 3.4E+08 | 0       | 0       | 4.7E+08 | 0       | 0 | 0       | 0       | 0       | 0       | 0       |

|                                   |   |               |        |   |         |         |         |         |         |         |         |         |         |         |         |         |
|-----------------------------------|---|---------------|--------|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| KFTTGGPTTTPCPDPPDSCPPVGFMDQH      | 1 | T110t         | Q6MFY6 | Protein phosphatase 1 regulatory subunit 11                           | 0       | 3E+08   | 4.2E+08 | 1.2E+08 | 1.7E+08 | 0       | 0       | 0       | 0       | 0       | 0       |         |
| KFQEQECPSPPEPTR                   | 3 | S186s         | P62071 | Ras-related protein R-Ras2  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 9.2E+07 | 6.7E+07 | 0       | 4.3E+07 | 6.3E+07 |
| SLHASPSSHAQVLEPYPPADVPAPDQTDSSGQK | 4 | T756t         | Q4L1J4 | Membrane associated guanylate kinase 1 b                              | 0       | 0       | 1.3E+08 | 1.9E+08 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| sVNDLLEDTTTFKPGHAR                | 3 | S132s         | Q8BM47 | Pleckstrin homology domain-containing family M member 3               | 0       | 0       | 2.9E+07 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| ANsFVGTAQVYSPPELLTEK              | 2 | S244s         | O55173 | 3-phosphoinositide-dependent protein kinase 1                         | 5.3E+08 | 7.4E+08 | 5.1E+08 | 3.1E+09 | 2.5E+09 | 1.9E+08 | 0       | 0       | 0       | 0       | 0       | 0       |
| DKFsPTQDRPESSTVLK                 | 2 | S202s         | Q80U37 | MKIAA0324 protein   | 0       | 0       | 6.1E+08 | 0       | 0       | 7.1E+07 | 0       | 0       | 0       | 0       | 0       | 0       |
| SsSPVTELTAR                       | 2 | S119s         | Q80U37 | MKIAA0324 protein   | 2.2E+08 | 4.5E+08 | 9.7E+08 | 0       | 5.5E+08 | 8.3E+08 | 0       | 0       | 0       | 0       | 0       | 0       |
| tCDSPQNPMDLSDPVPDPSFPR            | 3 | T206t         | Q3KR59 | Ubiquitin specific protease 10  | 0       | 0       | 0       | 2.3E+07 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| sPLEPENVPSSLLK                    | 2 | S176s         | Q3V3D5 | zinc finger, CCHC domain containing 11                                | 0       | 4.8E+07 | 0       | 5.7E+07 | 1.4E+08 | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| TPRsPLEPENVPSSLLK                 | 3 | S176s         | Q3V3D5 | zinc finger, CCHC domain containing 11                                | 3.6E+08 | 0       | 4E+08   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| sVDEVYVWQKDHPISR                  | 3 | S343s         | P11960 | 2-oxoisovalerate dehydrogenase subunit alpha, mitochondrial precursor | 0       | 0       | 1.5E+08 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| EGINPGYDDYADsDEDQHDAYLER          | 3 | S444s         | Q04931 | FACT complex subunit SSRP1  | 0       | 0       | 6E+08   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| TTVNNGVILPKKPSASLPSGSR            | 3 | T70t          | Q4V8C3 | Echinoderm microtubule associated protein like 1                      | 0       | 0       | 0       | 1.6E+08 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| EASRPEEPESAPsPTLPTQFK             | 3 | S363s         | Q3UK41 | Wolf-Hirschhorn syndrome candidate 2                                  | 1.8E+08 | 0       | 4.1E+08 | 6.8E+08 | 1.5E+08 | 8E+07   | 0       | 0       | 0       | 0       | 0       | 0       |
| AEKsPVSINVK                       | 3 | S358s         | Q52KE7 | Cyclin-L1   | 0       | 0       | 0       | 2.8E+08 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| GLNLDGTPALSTLGGFSASKPsSPR         | 3 | S347s         | Q52KE7 | Cyclin-L1   | 0       | 2.5E+07 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| sYEDLTELEDR                       | 2 | S56s          | Q6PDG8 | Mon1a protein   | 0       | 8.7E+08 | 0       | 0       | 6.8E+07 | 0       | 7.9E+08 | 7.8E+08 | 0       | 0       | 0       | 5.3E+08 |
| VISHDRDPPPPPPPPPPPPQPPQLK         | 3 | T150t         | Q80TD6 | Protein virilizer homolog   | 0       | 0       | 0       | 6.7E+08 | 8.8E+08 | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| LGTGGGGSsPKSPSAQELK               | 2 | S20s          | Q3TYJ0 | STIP1 homology and U-Box containing protein 1                         | 0       | 0       | 0       | 0       | 0       | 0       | 2E+08   | 0       | 0       | 0       | 0       | 0       |
| sGSIVELLAGGSSCsPVLsR              | 3 | S387s S402s   | P51111 | Huntingtin  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| AEEECECNDGvGGGLLCSyGTPDPSGNLLSFR  | 3 | S319s         | O88377 | Phosphatidylinositol-4-phosphate 5-kinase type-2 beta                 | 0       | 0       | 6.6E+08 | 6.7E+08 | 6.6E+08 | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| GDLSQHATPLPTPAVLPGDsPITPTPEQIGK   | 3 | S208s         | Q5X121 | Target of Myb protein 1   | 0       | 0       | 0       | 0       | 1.6E+08 | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| AASSANLLLR                        | 2 | S176s         | Q5U621 | BC022146 protein  | 0       | 1.6E+08 | 0       | 0       | 2.4E+07 | 1E+08   | 0       | 0       | 0       | 0       | 0       | 0       |
| GPPsPPAPVMHsPSR                   | 3 | S224s S232s   | Q9CSN1 | SNW domain-containing protein 1                                       | 0       | 4.5E+07 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| TNsDSELATEFANAIR                  | 2 | S889s         | Q3TYX4 | mutated in colorectal cancers,  | 0       | 0       | 9.3E+07 | 0       | 1.3E+08 | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| FFHHADEEEEEEEsPPER                | 3 | S38s          | Q4V8J1 | Hypothetical protein LOC501194  | 0       | 6.4E+08 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| QPIVHFSdVsDDEEDRLVIAT             | 3 | S2677s        | Q03172 | Zinc finger protein 40  | 0       | 0       | 0       | 0       | 0       | 0       | 4E+08   | 0       | 0       | 0       | 0       | 0       |
| TTAAHsLVGTPYMSPER                 | 3 | S195s         | Q9SE74 | Serine/threonine-protein kinase Nek7                                  | 0       | 3.8E+07 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| VQLsSPGQLFTALER                   | 3 | S490s         | P21139 | Alpha-mannosidase 2C1   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| ASYSGTSsHSFISGEPDR                | 3 | S361s         | Q8K1N2 | Pleckstrin homology-like domain family B member 2                     | 0       | 4.2E+07 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| RLsAGTTVADVQK                     | 2 | S465s         | Q8K1N2 | Pleckstrin homology-like domain family B member 2                     | 1.3E+08 | 1.1E+08 | 1.7E+08 | 0       | 1.2E+08 | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| FDIYDPFHPTDEAYSPPAPEQK            | 3 | S156s         | Q63624 | Splicing factor, arginine/serine-rich 15                              | 5.3E+08 | 0       | 0       | 0       | 0       | 9.6E+08 | 0       | 0       | 0       | 0       | 0       | 0       |
| SKsPASTSSVNGTPGSQSLTPR            | 3 | S307s         | Q3UGP0 | double cortin and calcium/calmodulin-dependent protein kinase-like 1  | 0       | 0       | 5.6E+07 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| FSHNVLsDSDEAK                     | 2 | S249s         | Q3B8R3 | LOC360570 protein   | 0       | 4E+08   | 4.7E+08 | 6.8E+08 | 3.7E+08 | 3.2E+08 | 0       | 0       | 0       | 0       | 0       | 0       |
| SLAPDLsDDEHDPVDSISRPR             | 3 | S228s         | Q3B8R3 | LOC360570 protein   | 0       | 0       | 7E+07   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| SPFNsPsQDSDPR                     | 2 | S339s         | O70188 | NF1-C2  | 0       | 6.3E+07 | 0       | 0       | 7.3E+07 | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| TEMdKSPFNsPsQDsPR                 | 3 | S343s         | O70188 | NF1-C2  | 6.9E+07 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| NKSTsTSVVASAEQPR                  | 3 | T20t          | P50411 | Protein phosphatase inhibitor 2                                       | 0       | 2.8E+07 | 2.9E+07 | 3.3E+07 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| DsSQEYTDSTGIDLHFLVNTLK            | 3 | S142s         | Q148X5 | R3hdm2 protein  | 7.8E+07 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| SAsTDLGTADVVLGR                   | 2 | S891s         | Q148X5 | R3hdm2 protein  | 5.4E+07 | 1.4E+08 | 1.4E+08 | 1.4E+08 | 1.2E+08 | 1.1E+08 | 0       | 0       | 0       | 0       | 0       | 0       |
| ADRsTSEATVAAAICCR                 | 3 | T666t         | P59996 | Protein convertase subtilisin/kexin type 9 precursor                  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 4.6E+07 | 0       | 0       |
| HAFSPVASVESAsGETLHSPK             | 3 | T317t S314s   | P29699 | Alpha-2-HS-glycoprotein precursor                                     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 1.2E+09 | 0       | 0       | 0       | 0       |
| VMHtQCCHSTPDSAEVDVR               | 3 | T130t S138s   | P29699 | Alpha-2-HS-glycoprotein precursor                                     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| LLHEDLDESDDDvDEK                  | 3 | S704s         | Q3UH05 | integrin beta 1 binding protein 1                                     | 0       | 0       | 0       | 0       | 0       | 4.2E+08 | 0       | 0       | 0       | 0       | 0       | 0       |
| DGVANVsIEDRVISLGEHSIIGR           | 3 | S98s          | P07632 | Superoxide dismutase [Cu-Zn]  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| MVVsIAEDLLRtAAQNSR                | 3 | T181t S173s   | Q3TP54 | HEAT repeat-containing protein 5B                                     | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| GCDsPDPDTSYVLTPTHEEK              | 3 | S98s          | Q2MJT0 | Myocyte-specific enhancer factor 2A                                   | 0       | 0       | 0       | 5.7E+08 | 5.6E+08 | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| GDFHsPVLGRPPNAEDR                 | 3 | S467s         | Q2MJT0 | Myocyte-specific enhancer factor 2A                                   | 0       | 0       | 1.3E+08 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| LFsADPFDLAQAK                     | 2 | S194s         | Q4V8J5 | DNA-damage inducible protein 2  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| TQAQLsPGER                        | 2 | S121s         | Q4V8J5 | DNA-damage inducible protein 2  | 2.8E+08 | 1.4E+08 | 4.7E+08 | 3.3E+08 | 0       | 1.2E+08 | 0       | 0       | 0       | 0       | 0       | 0       |
| AAGLVNPGsPPPTQQNQYIHISsSPQSSGR    | 3 | S213s S227s   | Q63540 | M.musculus ataxin-1   | 0       | 0       | 0       | 0       | 6.5E+07 | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| ALSAGLDYsPPSAPR                   | 2 | S87s          | Q63540 | M.musculus ataxin-1   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| SRsSPSTDHYSQEVVPEPNR              | 3 | S831s         | Q7TP36 | Shroom2   | 1.2E+08 | 0       | 0       | 0       | 0       | 6.7E+07 | 0       | 0       | 0       | 0       | 0       | 0       |
| SLsPGGAALGYR                      | 2 | S280s         | Q3THK4 | RNA binding motif protein 15 .  | 0       | 1.8E+08 | 1.3E+08 | 9.8E+07 | 2.2E+08 | 0       | 0       | 2.6E+07 | 0       | 0       | 0       | 0       |
| QAsLDGLQQLR                       | 2 | S506s         | Q8BIM6 | TBC1 domain family member 25  | 0       | 0       | 0       | 0       | 4.5E+07 | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| VLGQsSSKPPAAAtGPPPSNHCAKQKWK      | 3 | T432t S423s   | Q3UYC8 | Putative uncharacterized protein                                      | 0       | 4.5E+08 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| sVVGTPAYLAPEVLR                   | 2 | S735s         | Q5FWX6 | Protein kinase D3   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| VSAGRLPESQSKPLETSK                | 3 | T1217t        | Q62910 | Synaptojanin-1  | 0       | 1E+08   | 5.6E+07 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| sNTPESIAETPPAR                    | 2 | S515s         | P81122 | Insulin receptor substrate 2  | 0       | 6.5E+07 | 0       | 3.1E+08 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| sQSSGSATTPISVPGAR                 | 2 | S303s         | P81122 | Insulin receptor substrate 2  | 0       | 0       | 0       | 0       | 1.6E+08 | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| sSSTAPEMKQJNLSDYPIPR              | 3 | S591s         | Q80U46 | Transcription factor 20   | 0       | 0       | 0       | 0       | 0       | 5.3E+07 | 0       | 0       | 0       | 0       | 0       | 0       |
| LDDtVHVVIATPGRILDLIK              | 3 | T215t         | P54823 | DEAD  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| ATsPLVSLYPALECR                   | 2 | S460s         | Q2YDU3 | OTU domain-containing protein 5                                       | 0       | 0       | 0       | 6.2E+08 | 1.2E+09 | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| SSSEsATTsPESISGSVPSSGSSGR         | 3 | S133s         | Q5XF77 | RAD23a homolog  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| EsSPtYsPGFSdSTSGAK                | 2 | S1783s        | P15205 | Microtubule-associated protein 1B                                     | 0       | 0       | 9.2E+07 | 1.6E+08 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| LYFPesGHHSNNSLsQTEQVESIT          | 3 | S1049s S1050s | P15975 | Inactive ubiquitin carboxyl-terminal hydrolase 53                     | 0       | 0       | 0       | 0       | 1.3E+08 | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| SKGsPTGSPNNAsELsLASLSTEK          | 3 | S355s         | Q3UPB2 | Novel protein   | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 6.2E+07 | 0       | 0       | 0       |
| ASPASGHQLSDQEEADHGR               | 3 | S111s         | Q3UZ47 | tight junction protein 3  | 0       | 0       | 0       | 0       | 3.3E+07 | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| VPSRQsLEDR                        | 2 | S359s         | Q3UZ47 | tight junction protein 3  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| AIETVLGGALQqVVDTtDTAK             | 3 | T555t         | Q8K4R1 | Barmotin  | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| LGsSEsLPCTAEELSR                  | 2 | S214s         | Q3U4V4 | Protein kinase D2   | 0       | 2.7E+08 | 2.6E+08 | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| RLsSTSLASGHsSVR                   | 3 | S197s         | Q3U4V4 | Protein kinase D2   | 0       | 0       | 0       | 0       | 1.8E+08 | 0       | 0       | 0       | 0       | 0       | 0       | 0       |
| sPGNVNNTIVVPLLEDGR                | 2 | S202s         | O35738 | Kruppel-like factor 12  | 0       | 6.8E+07 | 0       | 0       | 5.3E+07 | 0       | 0       | 0       | 0       | 0       | 0       | 0       |















- (a) If phosphorylation site can not be unambiguously assigned (delta score between 1<sup>st</sup> and 2<sup>nd</sup> rank matches <3) it is shown with asterix(\*).
- (b) Phosphosites in marked in the sequence by small letters.
- (c) Acession numbers (Acc #) are from UniProt database.

**Supplementary Table 4. Phosphorylation sites changed after insulin injection**

| Sequence                           | Phosphosites    | Acc.#  | Protein Name   | Function                                 |
|------------------------------------|-----------------|--------|--|--|
| <b>Phosphorylated in cytosol</b>   |                 |        |  |  |
| AFDPKFYLEPTsPPTTDGFK               | S626s           | Q99MF8 | Glycogen synthase  | Metabolism                               |
| AFDPKFHLEPtSPPTTDGFK               | T626t           | Q99MF8 | Glycogen synthase  | Metabolism                               |
| SSSsPELQTLQDILGLDGDK               | S1390s          | P49816 | tuberous sclerosis 2                                     | Signalling                               |
| NsFTPLSSSNTIR                      | S469s           | P70265 | 6-phosphofructo-2-kinase/fructose-26-biphosphatase 2     | Metabolism                               |
| ASPASPVsPSPDCPSPR                  | S1014s          | P59808 | SAM and SH3 domain-containing protein 1                  | Signalling                               |
| QTTPASPSPQPAEDRPPsSPIYEDAAPLK      | S380s           | Q66HL2 | Cortactin isoform B                                      | Motility/structure and Protein transport |
| TGSsSPPGGLSKPGSGLDMSLGLSQSDLNK     | S287s           | Q1EG89 | Myocardial ischemic preconditioning associated protein 7 | Unknown                                  |
| tRSLPITIEMLK                       | T455t           | Q8C7U9 | Phosphatase and actin regulator 4                        | Signalling                               |
| sQSSSSCSNPISVPLR                   | S265s           | P35570 | Insulin receptor substrate 1                             | Signalling                               |
| SsPFKVsPLSFGR                      | S286s S291s     | Q66H98 | Serum deprivation-response protein                       | Protein transport                        |
| RHQDGLPYIDDS PSSSPHLSSK            | S250s           | Q6PAJ1 | Bcr protein  | Signalling                               |
| YVQVsQENFEPFMK                     | S11s*           | P02692 | Fatty acid-binding protein liver                         | Small molecules transport                |
| APVVLQPEQIVsEEETPPPLLTK            | S353s           | Q80TU6 | MKIAA0670 protein  | Unknown                                  |
| AAQASLsALNDPSAVEQALQEK             | S935s           | O55147 | Rattus norvegicus utrophin                               | Motility/structure                       |
| DLENFVKWLQEAETtANVLADAsQR          | T2452t* S2460s* | O55147 | Rattus norvegicus utrophin                               | Motility/structure                       |
| STPEsGESDKESVGSSSLGNEGSR           | S464s           | Q8CFS0 | Za20d1 protein   | Signalling/Degradation of macromolecules |
| EDFDtSSSSTPPQPR                    | T82t            | Q3TU30 | cullin 4B  | Signalling/Degradation of macromolecules |
| VISHDRDSPPPPPPPPPPPQPPtLK          | T150t           | Q80TD6 | Protein virilizer homolog                                | Gene expression                          |
| GCDsPDPDTSYVLTPTHEEK               | S98s            | Q2MJT0 | Myocyte-specific enhancer factor 2A                      | Gene expression                          |
| ATsPLVSLYPALECR                    | S460s           | Q2YDU3 | OTU domain-containing protein 5                          | Cell defence                             |
| IQPQLPDEDGNEsDKEDQPPVVVLK          | S50s            | Q5RKH3 | Hypothetical protein RGD1311745                          | Unknown                                  |
| tSDNPDFNyTSFDSFAWAFSLFR            | T327t Y335y     | Q6QIY3 | Sodium channel protein type 10 subunit alpha             | Small molecules transport                |
| NsPGLLVSPGNLNK                     | S222s           | Q3V1B5 | myocyte enhancer factor 2C                               | Gene expression                          |
| ASPSPLSSYSDDPSGHyCQLQPPVR          | Y490y           | Q9QZS8 | SH2 domain-containing protein 3C                         | Signalling                               |
| SsSLGSYDDEQEDLTPVQLTR              | S321s           | Q6P904 | Protein FAM13A1  | Unknown                                  |
| <b>Dephosphorylated in cytosol</b> |                 |        |  |  |
| IALNLEECALsPISQEPR                 | S403s           | Q3MID9 | Ogfr protein   | Unknown                                  |
| KtASFGNILDVPEIVISGNQPR             | T415t           | Q923A8 | Map3k7 protein   | Signalling                               |
| IKTEPSsPLSDPSDIIR                  | S435s           | Q3UM76 | Mammary gland RCB-0526 Jyg-MC                            | Unknown                                  |
| GQEsEYGNITYPPALR                   | Y538y           | P81718 | Tyrosine-protein phosphatase non-receptor type 6         | Signalling                               |
| QGsFTIDKPSSNIPIELIPHINK            | S789s           | Q91Y79 | KARP-1-binding protein 1                                 | Signalling                               |
| QESLGLSPSEVRVTHVGHGCGEDGVTAtr      | T203t           | Q3V3Z2 | SCAN-KRAB-zinc finger gene 1                             | Gene expression                          |
| sNSVEKPVSSLLSR                     | S327s           | O08719 | Ena/VASP-like protein                                    | Motility/Structure                       |
| VLEASPGRPSSMDtPLSPTAFIDSILR        | T323t           | P38532 | Heat shock factor protein 1                              | Gene expression                          |
| sLQSLLPSSK                         | S459s           | Q9D2V7 | Coronin-7  | Protein transport                        |
| GsASSDLELTAELATAEA VR              | S309s           | Q5HZB2 | Formyltetrahydrofolate dehydrogenase                     | Metabolism                               |
| RGsGDTSISMDEASIR                   | S88s            | Q66HF9 | Leucine-rich repeat flightless-interacting protein 1     | Gene expression                          |
| QTLINIPSLNDSsEVEDISEIESNR          | S380s*          | Q3ZB99 | Tight junction protein 2                                 | Motility/Structure                       |
| TsPADHGGSVGSSESGSAVDSVAGEHSVSGR    | S2897s          | Q2TL32 | ZUBR1  | Degradation of macromolecules            |
| RFsDFLGLYEK                        | S188s           | Q99N27 | Sorting nexin-1  | Protein transport                        |
| sQDLGVQFPGDR                       | S225s           | Q3UH79 | capicua homolog  | Gene expression                          |
| TMtTNSSDPFLNSGTYHSR                | T344t           | Q2EJA0 | Yes-associated protein                                   | Gene expression                          |
| AAAsLNyLNQPNAAPLQTSR               | S590s           | Q5PQM2 | Kinesin-like 8   | Motility/Structure                       |

|                                    |        |        |   |                               |
|------------------------------------|--------|--------|---|-------------------------------|
| SPBWKELVLDNCR                      | S17s   | P49911 | Acidic leucine-rich nuclear phosphoprotein 32 family member A | Signalling                    |
| SLSNVGDPEIHK                       | S93s   | P47245 | Nardilysin precursor  | Degradation of macromolecules |
| KPVLPALTINPTIAEGPsPTSEGASEAHLVDLQK | S23s   | P36506 | Dual specificity mitogen-activated protein kinase kinase 2    | Signalling                    |
| KLEEALsTEGAEEGNsSDK                | S524s  | Q8K3W9 | Protein phosphatase PP2C gamma                                | Signalling                    |
| NEEENiYsVPHDSTQGK                  | Y1105y | P81128 | Glucocorticoid receptor DNA-binding factor 1                  | Gene expression               |
| NLNLVsSTASIKDLADVDLR               | S769s  | P81128 | Glucocorticoid receptor DNA-binding factor 1                  | Gene expression               |
| LAWVGDVFTTPTDPRPLTsPLR             | S809s  | Q6MG48 | Protein PRRC2A  | Gene expression               |
| AESSSsISSASLSAANTPTVGVSr           | S510s  | Q3UQN2 | Fcho2 protein   | Motility/Structure            |
| AAKPEQVLEPSTVPSTLLRPPesPDAVPEIPR   | S568s  | Q8VIP2 | Carbohydrate responsive element binding protein               | Signalling                    |
| CSPVPGLSsPSGSPLHGK                 | S267s  | Q5SWI0 | Breast carcinoma amplified sequence 3                         | Unknown                       |
| LENSGDENMSDVTFDsLSPsPSSATPHSQK     | S395s  | O08796 | Elongation factor 2 kinase                                    | Signalling                    |
| sANQSPQsVGSsGIDSGVESTSDSLR         | S468s  | Q5XIM8 | Lipin 1   | Signalling and Metabolism     |
| VQsSPNLLAAGR                       | S27s   | O35413 | Sorbin and SH3 domain-containing protein 2                    | Signalling                    |
| RMStEGGEELPVsVLDEVTIK              | T189t  | Q9JHX4 | Caspase-8   | Degradation of macromolecules |
| RTsLDTITGPYLtGQWPR                 | S163s  | Q8K3I9 | Testhymin   | Signalling                    |
| SQNSAFDLGDENEIQLsK                 | S360s  | Q62717 | Calcium-dependent secretion activator 1                       | Protein transport             |
| KEsAPQVLLPEEEK                     | S560s  | O55043 | Rho guanine nucleotide exchange factor 7                      | Signalling                    |
| SAsDASISSGTHGQYSILQTAk             | S1139s | O55207 | Synaptojanin-2  | Protein transport             |
| TTsPDLFESQSLTsASSKPSSAR            | S488s  | Q505I9 | Epsin 2 isoform b   | Protein transport             |
| VSAGRLtPESQSKPLETSK                | T1217t | Q62910 | Synaptojanin-1  | Protein transport             |
| LGSSesLPCTAEELSR                   | S214s  | Q3U4V4 | Protein kinase D2   | Signalling                    |
| HLPsPPTLDSIITEYLr                  | S999s  | Q6P1E2 | Vpr-binding protein   | Gene expression               |
| LLQEGSPsDITTLsVEPEKK               | S704s  | P70365 | Nuclear receptor coactivator 1                                | Gene expression               |
| TDVSNFDEEFTGEAPTLsPPR              | S920s  | P70268 | Serine/threonine-protein kinase N1                            | Signalling                    |
| GQVtPPEQIFHLVPSPEELANSLR           | T304t  | P50745 | Lymphocyte-specific adapter protein Lnk                       | Signalling                    |
| SVsEAALAQPEGLLTDSLKK               | S865s  | P15304 | Hormone-sensitive lipase                                      | Metabolism                    |
| TDEIYIAGsPLTPR                     | S636s  | O55081 | Retinoblastoma-like protein 2                                 | Signalling                    |
| AMEGIPTQDSQPEDRsPELSR              | S116s  | Q99MM4 | TRAF-interacting zinc finger protein FLN29                    | Signalling, Cell defence      |
| SSsTSDILEPFTVER                    | S796s  | Q6GYP7 | GTPase-activating RapGAP domain-like 1                        | Signalling                    |
| SFsLDPLMER                         | S120s  | Q3UGR8 | Tenc1 protein   | Signalling                    |
| GsSISDLADSVAYQSR                   | S103s  | Q30A01 | GABA-B receptor-interacting scaffolding protein               | Signalling                    |

### Phosphorylated in endosomes

|                             |             |        |  |                               |
|-----------------------------|-------------|--------|--|-------------------------------|
| TVLsLFDEDEDKVEDDSNTCAPQGGLK | S795s       | Q80X08 | WASH complex subunit FAM21                                 | Protein transport             |
| KASALFsSDEEDQWSVADSQTK      | S611s       | Q80X08 | WASH complex subunit FAM21                                 | Protein transport             |
| ELEKPIQSKPQsPVIQATAGsPK     | S218s S227s | Q7TSU1 | Brefeldin A-inhibited guanine nucleotide-exchange factor 2 | Protein transport             |
| HYEDGYPGGSDNYGsLSR          | S230s       | Q80XQ4 | Catenin delta-1  | Motility/Structure            |
| KYsSCSTIFLDDSTVsQPnLK       | S99s        | Q8BGU5 | Cyclin-Y   | Signalling                    |
| sSYLDEDQVIEYr               | S1817s      | P41413 | Proprotein convertase subtilisin/kexin type 5 precursor    | Degradation of macromolecules |

### Dephosphorylated in endosomes

|                                |             |        |   |                    |
|--------------------------------|-------------|--------|---|--------------------|
| LLKPGEEPSEYtDEEDTK             | T205t       | P70580 | Membrane-associated progesterone receptor component 1 | Signalling         |
| KQtPPASPsPQPAEDRPPSSPIYEDAAPLK | T364t S370s | Q66HL2 | Cortactin isoform B                                   | Protein transport  |
| NLsPGAVESDVR                   | S173s       | Q8BTF0 | COATOMER ALPHA SUBUNIT                                | Protein transport  |
| STLPVDEGsPLEKLEQK              | S618s       | Q5M7W5 | Microtubule-associated protein 4                      | Motility/Structure |
| sNSLPHSAVSNAGSK                | S82s        | Q3ULP2 | 2310040A13Rik protein                                 | Unknown            |
| WVEENVSSVTDVALPALLDsDEER       | S543s       | Q8BU98 | Tmem87a protein                                       | Unknown            |
| VHAYFAPVtPPPSVGGsR             | T417t S425s | Q3UMN2 | F-box/LRR-repeat protein 20                           | Signalling         |

ALAPPEQRDSDITSLK

S18s

Q4V8C7 Interferon-inducible double stranded RNA-dependent protein kinase activator Signalling

RNsLTGEEGELAK

S101s

Q99P55 Sphingosine-1-phosphate phosphatase 1 Metabolism

- (a) If phosphorylation site can not be unambiguously assigned (delta score between 1<sup>st</sup> and 2<sup>nd</sup> rank matches <3) it is shown with asterix(\*).
- (b) Phosphosites in marked in the sequence by small letters.
- (c) Acession numbers (Acc #) are from UniProt database.