

=====

GO term enrichment of up-regulated genes

=====

BP GO:0007059 chromosome segregation

Annotate: 339

Significant: 82

Expected: 11.97

topGO p-value: < 1e-30

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000012048 (BRCA1); ENSG00000013810 (TACC3); ENSG00000058804 (NDC1);
ENSG00000071539 (TRIP13); ENSG00000076382 (SPAG5); ENSG00000079616 (KIF22);
ENSG00000080986 (NDC80); ENSG00000089685 (BIRC5); ENSG00000090889 (KIF4A);
ENSG00000094804 (CDC6); ENSG00000100162 (CENPM); ENSG00000101447 (FAM83D);
ENSG00000102384 (CENPI); ENSG00000104147 (OIP5); ENSG00000109805 (NCAPG);
ENSG00000112742 (TTK); ENSG00000113810 (SMC4); ENSG00000115163 (CENPA);
ENSG00000117399 (CDC20); ENSG00000117650 (NEK2); ENSG00000117724 (CENPF);
ENSG00000118193 (KIF14); ENSG00000120129 (DUSP1); ENSG00000121152 (NCAPH);
ENSG00000121621 (KIF18A); ENSG00000122952 (ZWINT); ENSG00000123219 (CENPK);
ENSG00000123485 (HJURP); ENSG00000126787 (DLGAP5); ENSG00000128944 (KNSTRN);
ENSG00000129810 (SGOL1); ENSG00000131747 (TOP2A); ENSG00000134057 (CCNB1);
ENSG00000134222 (PSRC1); ENSG00000134690 (CDCA8); ENSG00000135476 (ESPL1);
ENSG00000136492 (BRIP1); ENSG00000137804 (NUSAP1); ENSG00000137807 (KIF23);
ENSG00000137812 (CASC5); ENSG00000138092 (CENPO); ENSG00000138160 (KIF11);
ENSG00000138180 (CEP55); ENSG00000138778 (CENPE); ENSG00000142945 (KIF2C);
ENSG00000143228 (NUF2); ENSG00000144554 (FANCD2); ENSG00000146670 (CDCA5);
ENSG00000148773 (MKI67); ENSG00000149503 (INCENP); ENSG00000151503 (NCAPD3);
ENSG00000151725 (CENPU); ENSG00000153044 (CENPH); ENSG00000154839 (SKA1);
ENSG00000154920 (EME1); ENSG00000156970 (BUB1B); ENSG00000159055 (MIS18A);
ENSG00000161800 (RACGAP1); ENSG00000161888 (SPC24); ENSG00000163491 (NEK10);
ENSG00000163535 (SGOL2); ENSG00000164109 (MAD2L1); ENSG00000164611 (PTTG1);
ENSG00000164949 (GEM); ENSG00000165480 (SKA3); ENSG00000166851 (PLK1);
ENSG00000168496 (FEN1); ENSG00000169220 (RGS14); ENSG00000169679 (BUB1);
ENSG00000171320 (ESCO2); ENSG00000175063 (UBE2C); ENSG00000175305 (CCNE2);
ENSG00000177602 (GSG2); ENSG00000178999 (AURKB); ENSG00000184661 (CDCA2);
ENSG00000186185 (KIF18B); ENSG00000186871 (ERCC6L); ENSG00000198901 (PRC1);
ENSG00000203760 (CENPW); ENSG00000204197 (KIFC1); ENSG00000262634 (SKA1);
ENSG00000277909 (SPC25)

Differentially expressed genes in this GO term (IDs and product descriptions):

ENSG00000012048 (breast cancer 1); ENSG00000013810 (transforming; acidic coiled-coil containing protein 3); ENSG00000058804 (NDC1 transmembrane nucleoporin);
ENSG00000071539 (thyroid hormone receptor interactor 13); ENSG00000076382 (sperm associated antigen 5); ENSG00000079616 (kinesin family member 22);
ENSG00000080986 (NDC80 kinetochore complex component); ENSG00000089685 (baculoviral IAP repeat containing 5); ENSG00000090889 (kinesin family member 4A); ENSG00000094804 (cell division cycle 6); ENSG00000100162 (centromere protein M); ENSG00000101447 (family with sequence similarity 83 member D); ENSG00000102384 (centromere protein I); ENSG00000104147 (Opa interacting protein 5); ENSG00000109805 (non-SMC condensin I complex subunit G); ENSG00000112742 (TTK protein kinase); ENSG00000113810 (structural maintenance of chromosomes 4); ENSG00000115163 (centromere protein A); ENSG00000117399 (cell division cycle 20); ENSG00000117650 (NIMA-related kinase 2); ENSG00000117724 (centromere protein F); ENSG00000118193 (kinesin family member 14); ENSG00000120129 (dual specificity phosphatase 1); ENSG00000121152 (non-SMC condensin I complex subunit H); ENSG00000121621 (kinesin family member 18A); ENSG00000122952 (ZW10

interacting kinetochore protein); ENSG00000123219 (centromere protein K); ENSG00000123485 (Holliday junction recognition protein); ENSG00000126787 (discs; large (Drosophila) homolog-associated protein 5); ENSG00000128944 (kinetochore-localized astrin/SPAG5 binding protein); ENSG00000129810 (shugoshin-like 1 (S. pombe)); ENSG00000131747 (topoisomerase (DNA) II alpha); ENSG00000134057 (cyclin B1); ENSG00000134222 (proline/serine-rich coiled-coil 1); ENSG00000134690 (cell division cycle associated 8); ENSG00000135476 (extra spindle pole bodies like 1; separase); ENSG00000136492 (BRCA1 interacting protein C-terminal helicase 1); ENSG00000137804 (nucleolar and spindle associated protein 1); ENSG00000137807 (kinesin family member 23); ENSG00000137812 (cancer susceptibility candidate 5); ENSG00000138092 (centromere protein O); ENSG00000138160 (kinesin family member 11); ENSG00000138180 (centrosomal protein 55kDa); ENSG00000138778 (centromere protein E); ENSG00000142945 (kinesin family member 2C); ENSG00000143228 (NUF2; NDC80 kinetochore complex component); ENSG00000144554 (Fanconi anemia complementation group D2); ENSG00000146670 (cell division cycle associated 5); ENSG00000148773 (marker of proliferation Ki-67); ENSG00000149503 (inner centromere protein); ENSG00000151503 (non-SMC condensin II complex subunit D3); ENSG00000151725 (centromere protein U); ENSG00000153044 (centromere protein H); ENSG00000154839 (spindle and kinetochore associated complex subunit 1); ENSG00000154920 (essential meiotic structure-specific endonuclease 1); ENSG00000156970 (BUB1B; mitotic checkpoint serine/threonine kinase); ENSG00000159055 (MIS18 kinetochore protein A); ENSG00000161800 (Rac GTPase activating protein 1); ENSG00000161888 (SPC24; NDC80 kinetochore complex component); ENSG00000163491 (NIMA-related kinase 10); ENSG00000163535 (shugoshin-like 2 (S. pombe)); ENSG00000164109 (MAD2 mitotic arrest deficient-like 1 (yeast)); ENSG00000164611 (pituitary tumor-transforming 1); ENSG00000164949 (GTP binding protein overexpressed in skeletal muscle); ENSG00000165480 (spindle and kinetochore associated complex subunit 3); ENSG00000166851 (polo-like kinase 1); ENSG00000168496 (flap structure-specific endonuclease 1); ENSG00000169220 (regulator of G-protein signaling 14); ENSG00000169679 (BUB1; mitotic checkpoint serine/threonine kinase); ENSG00000171320 (establishment of sister chromatid cohesion N-acetyltransferase 2); ENSG00000175063 (ubiquitin conjugating enzyme E2C); ENSG00000175305 (cyclin E2); ENSG00000177602 (germ cell associated 2 (haspin)); ENSG00000178999 (aurora kinase B); ENSG00000184661 (cell division cycle associated 2); ENSG00000186185 (kinesin family member 18B); ENSG00000186871 (excision repair cross-complementation group 6 like); ENSG00000198901 (protein regulator of cytokinesis 1); ENSG00000203760 (centromere protein W); ENSG00000204197 (kinesin family member C1); ENSG00000262634 (spindle and kinetochore associated complex subunit 1); ENSG00000277909 (SPC25; NDC80 kinetochore complex component)

BP GO:0007067 mitotic nuclear division

Annotate: 439

Significant: 87

Expected: 15.5

topGO p-value: < 1e-30

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000011426 (ANLN); ENSG00000013810 (TACC3); ENSG00000066279 (ASPM); ENSG00000076382 (SPAG5); ENSG00000079616 (KIF22); ENSG00000080986 (NDC80); ENSG00000087586 (AURKA); ENSG00000088325 (TPX2); ENSG00000089685 (BIRC5); ENSG00000090889 (KIF4A); ENSG00000094804 (CDC6); ENSG00000101057 (MYBL2); ENSG00000101447 (FAM83D); ENSG00000104147 (OIP5); ENSG00000108106 (UBE2S); ENSG00000109805 (NCAPG); ENSG00000111665 (CDCA3); ENSG00000112029 (FBXO5); ENSG00000112742 (TTK); ENSG00000113810 (SMC4); ENSG00000115163 (CENPA); ENSG00000117399 (CDC20); ENSG00000117650 (NEK2); ENSG00000117724 (CENPF); ENSG00000118193 (KIF14); ENSG00000120129 (DUSP1); ENSG00000121152 (NCAPH);

ENSG00000121621 (KIF18A); ENSG00000122952 (ZWINT); ENSG00000122966 (CIT);
ENSG00000126787 (DLGAP5); ENSG00000127564 (PKMYT1); ENSG00000128944 (KNSTRN);
ENSG00000129195 (FAM64A); ENSG00000129810 (SGOL1); ENSG00000133101 (CCNA1);
ENSG00000134057 (CCNB1); ENSG00000134222 (PSRC1); ENSG00000134690 (CDCA8);
ENSG00000135476 (ESPL1); ENSG00000137804 (NUSAP1); ENSG00000137807 (KIF23);
ENSG00000137812 (CASC5); ENSG00000138160 (KIF11); ENSG00000138180 (CEP55);
ENSG00000138182 (KIF20B); ENSG00000138778 (CENPE); ENSG00000142945 (KIF2C);
ENSG00000143228 (NUF2); ENSG00000145386 (CCNA2); ENSG00000146670 (CDCA5);
ENSG00000146918 (NCAPG2); ENSG00000148773 (MKI67); ENSG00000149503 (INCENP);
ENSG00000149948 (HMGA2); ENSG00000151503 (NCAPD3); ENSG00000154839 (SKA1);
ENSG00000156970 (BUB1B); ENSG00000157456 (CCNB2); ENSG00000158402 (CDC25C);
ENSG00000159055 (MIS18A); ENSG00000161800 (RACGAP1); ENSG00000161888 (SPC24);
ENSG00000162063 (CCNF); ENSG00000163808 (KIF15); ENSG00000164045 (CDC25A);
ENSG00000164109 (MAD2L1); ENSG00000164611 (PTTG1); ENSG00000164949 (GEM);
ENSG00000165480 (SKA3); ENSG00000166851 (PLK1); ENSG00000168078 (PBK);
ENSG00000169220 (RGS14); ENSG00000169679 (BUB1); ENSG00000170312 (CDK1);
ENSG00000175063 (UBE2C); ENSG00000177602 (GSG2); ENSG00000178999 (AURKB);
ENSG00000184661 (CDCA2); ENSG00000186185 (KIF18B); ENSG00000186871 (ERCC6L);
ENSG00000198901 (PRC1); ENSG00000203760 (CENPW); ENSG00000204197 (KIFC1);
ENSG00000262634 (SKA1); ENSG00000277909 (SPC25); ENSG00000280610 (KIF15)

Differentially expressed genes in this GO term (IDs and product descriptions):
ENSG00000011426 (anillin actin binding protein); ENSG00000013810 (transforming;
acidic coiled-coil containing protein 3); ENSG00000066279 (abnormal spindle
microtubule assembly); ENSG00000076382 (sperm associated antigen 5);
ENSG00000079616 (kinesin family member 22); ENSG00000080986 (NDC80 kinetochore
complex component); ENSG00000087586 (aurora kinase A); ENSG00000088325 (TPX2;
microtubule-associated); ENSG00000089685 (baculoviral IAP repeat containing 5);
ENSG00000090889 (kinesin family member 4A); ENSG00000094804 (cell division cycle
6); ENSG00000101057 (v-myb avian myeloblastosis viral oncogene homolog-like 2);
ENSG00000101447 (family with sequence similarity 83 member D); ENSG00000104147
(Opa interacting protein 5); ENSG00000108106 (ubiquitin conjugating enzyme E2S);
ENSG00000109805 (non-SMC condensin I complex subunit G); ENSG00000111665 (cell
division cycle associated 3); ENSG00000112029 (F-box protein 5); ENSG00000112742
(TTK protein kinase); ENSG00000113810 (structural maintenance of chromosomes 4);
ENSG00000115163 (centromere protein A); ENSG00000117399 (cell division cycle
20); ENSG00000117650 (NIMA-related kinase 2); ENSG00000117724 (centromere
protein F); ENSG00000118193 (kinesin family member 14); ENSG00000120129 (dual
specificity phosphatase 1); ENSG00000121152 (non-SMC condensin I complex subunit
H); ENSG00000121621 (kinesin family member 18A); ENSG00000122952 (ZW10
interacting kinetochore protein); ENSG00000122966 (citron rho-interacting
serine/threonine kinase); ENSG00000126787 (discs; large (Drosophila) homolog-
associated protein 5); ENSG00000127564 (protein kinase; membrane associated
tyrosine/threonine 1); ENSG00000128944 (kinetochore-localized astrin/SPAG5
binding protein); ENSG00000129195 (family with sequence similarity 64 member A);
ENSG00000129810 (shugoshin-like 1 (S. pombe)); ENSG00000133101 (cyclin A1);
ENSG00000134057 (cyclin B1); ENSG00000134222 (proline/serine-rich coiled-coil
1); ENSG00000134690 (cell division cycle associated 8); ENSG00000135476 (extra
spindle pole bodies like 1; separase); ENSG00000137804 (nucleolar and spindle
associated protein 1); ENSG00000137807 (kinesin family member 23);
ENSG00000137812 (cancer susceptibility candidate 5); ENSG00000138160 (kinesin
family member 11); ENSG00000138180 (centrosomal protein 55kDa); ENSG00000138182
(kinesin family member 20B); ENSG00000138778 (centromere protein E);
ENSG00000142945 (kinesin family member 2C); ENSG00000143228 (NUF2; NDC80
kinetochore complex component); ENSG00000145386 (cyclin A2); ENSG00000146670
(cell division cycle associated 5); ENSG00000146918 (non-SMC condensin II
complex subunit G2); ENSG00000148773 (marker of proliferation Ki-67);
ENSG00000149503 (inner centromere protein); ENSG00000149948 (high mobility group

AT-hook 2); ENSG00000151503 (non-SMC condensin II complex subunit D3);
ENSG00000154839 (spindle and kinetochore associated complex subunit 1);
ENSG00000156970 (BUB1B; mitotic checkpoint serine/threonine kinase);
ENSG00000157456 (cyclin B2); ENSG00000158402 (cell division cycle 25C);
ENSG00000159055 (MIS18 kinetochore protein A); ENSG00000161800 (Rac GTPase
activating protein 1); ENSG00000161888 (SPC24; NDC80 kinetochore complex
component); ENSG00000162063 (cyclin F); ENSG00000163808 (kinesin family member
15); ENSG00000164045 (cell division cycle 25A); ENSG00000164109 (MAD2 mitotic
arrest deficient-like 1 (yeast)); ENSG00000164611 (pituitary tumor-transforming
1); ENSG00000164949 (GTP binding protein overexpressed in skeletal muscle);
ENSG00000165480 (spindle and kinetochore associated complex subunit 3);
ENSG00000166851 (polo-like kinase 1); ENSG00000168078 (PDZ binding kinase);
ENSG00000169220 (regulator of G-protein signaling 14); ENSG00000169679 (BUB1;
mitotic checkpoint serine/threonine kinase); ENSG00000170312 (cyclin-dependent
kinase 1); ENSG00000175063 (ubiquitin conjugating enzyme E2C); ENSG00000177602
(germ cell associated 2 (haspin)); ENSG00000178999 (aurora kinase B);
ENSG00000184661 (cell division cycle associated 2); ENSG00000186185 (kinesin
family member 18B); ENSG00000186871 (excision repair cross-complementation group
6 like); ENSG00000198901 (protein regulator of cytokinesis 1); ENSG00000203760
(centromere protein W); ENSG00000204197 (kinesin family member C1);
ENSG000002262634 (spindle and kinetochore associated complex subunit 1);
ENSG00000277909 (SPC25; NDC80 kinetochore complex component); ENSG00000280610
(kinesin family member 15)

BP GO:0051276 chromosome organization

Annotate: 624

Significant: 95

Expected: 22.03

topGO p-value: < 1e-30

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000012048 (BRCA1); ENSG00000013810 (TACC3); ENSG00000051180 (RAD51);
ENSG00000058804 (NDC1); ENSG00000071539 (TRIP13); ENSG00000073111 (MCM2);
ENSG00000076382 (SPAG5); ENSG00000079616 (KIF22); ENSG00000080986 (NDC80);
ENSG00000085999 (RAD54L); ENSG00000089685 (BIRC5); ENSG00000090889 (KIF4A);
ENSG00000093009 (CDC45); ENSG00000094804 (CDC6); ENSG00000100162 (CENPM);
ENSG00000100297 (MCM5); ENSG00000100479 (POLE2); ENSG00000101003 (GINS1);
ENSG00000101868 (POLA1); ENSG00000102384 (CENPI); ENSG00000104147 (OIP5);
ENSG00000104738 (MCM4); ENSG00000105011 (ASF1B); ENSG00000109805 (NCAPG);
ENSG00000112118 (MCM3); ENSG00000112742 (TTK); ENSG00000113810 (SMC4);
ENSG00000115163 (CENPA); ENSG00000117399 (CDC20); ENSG00000117650 (NEK2);
ENSG00000117724 (CENPF); ENSG00000118193 (KIF14); ENSG00000118655 (DCLRE1B);
ENSG00000120129 (DUSP1); ENSG00000121152 (NCAPH); ENSG00000121621 (KIF18A);
ENSG00000122952 (ZWINT); ENSG00000123219 (CENPK); ENSG00000123485 (HJURP);
ENSG00000126787 (DLGAP5); ENSG00000128944 (KNSTRN); ENSG00000129810 (SGOL1);
ENSG00000131153 (GINS2); ENSG00000131747 (TOP2A); ENSG00000133119 (RFC3);
ENSG00000134057 (CCNB1); ENSG00000134222 (PSRC1); ENSG00000134690 (CDCA8);
ENSG00000135476 (ESPL1); ENSG00000136492 (BRIP1); ENSG00000137309 (HMGA1);
ENSG00000137804 (NUSAP1); ENSG00000137807 (KIF23); ENSG00000137812 (CASC5);
ENSG00000138092 (CENPO); ENSG00000138180 (CEP55); ENSG00000138778 (CENPE);
ENSG00000142945 (KIF2C); ENSG00000143228 (NUF2); ENSG00000144554 (FANCD2);
ENSG00000146670 (CDCA5); ENSG00000146918 (NCAPG2); ENSG00000147536 (GINS4);
ENSG00000149503 (INCENP); ENSG00000149948 (HMGA2); ENSG00000151503 (NCAPD3);
ENSG00000151725 (CENPU); ENSG00000153044 (CENPH); ENSG00000154839 (SKA1);
ENSG00000156970 (BUB1B); ENSG00000159055 (MIS18A); ENSG00000161800 (RACGAP1);
ENSG00000161888 (SPC24); ENSG00000163535 (SGOL2); ENSG00000164109 (MAD2L1);
ENSG00000164611 (PTTG1); ENSG00000164949 (GEM); ENSG00000166851 (PLK1);
ENSG00000167670 (CHAF1A); ENSG00000168496 (FEN1); ENSG00000169679 (BUB1);

ENSG00000170312 (CDK1); ENSG00000175063 (UBE2C); ENSG00000175305 (CCNE2);
ENSG00000177602 (GSG2); ENSG00000178999 (AURKB); ENSG00000186185 (KIF18B);
ENSG00000186871 (ERCC6L); ENSG00000188486 (H2AFX); ENSG00000197299 (BLM);
ENSG00000198901 (PRC1); ENSG00000203760 (CENPW); ENSG00000204197 (KIFC1);
ENSG00000262634 (SKA1); ENSG00000277909 (SPC25)

Differentially expressed genes in this GO term (IDs and product descriptions):
ENSG00000012048 (breast cancer 1); ENSG00000013810 (transforming; acidic coiled-coil containing protein 3); ENSG00000051180 (RAD51 recombinase); ENSG00000058804 (NDC1 transmembrane nucleoporin); ENSG00000071539 (thyroid hormone receptor interactor 13); ENSG00000073111 (minichromosome maintenance complex component 2); ENSG00000076382 (sperm associated antigen 5); ENSG00000079616 (kinesin family member 22); ENSG00000080986 (NDC80 kinetochore complex component); ENSG00000085999 (RAD54-like (S. cerevisiae)); ENSG00000089685 (baculoviral IAP repeat containing 5); ENSG00000090889 (kinesin family member 4A); ENSG00000093009 (cell division cycle 45); ENSG00000094804 (cell division cycle 6); ENSG00000100162 (centromere protein M); ENSG00000100297 (minichromosome maintenance complex component 5); ENSG00000100479 (polymerase (DNA directed); epsilon 2; accessory subunit); ENSG00000101003 (GINS complex subunit 1 (Psf1 homolog)); ENSG00000101868 (polymerase (DNA directed); alpha 1; catalytic subunit); ENSG00000102384 (centromere protein I); ENSG00000104147 (Opa interacting protein 5); ENSG00000104738 (minichromosome maintenance complex component 4); ENSG00000105011 (anti-silencing function 1B histone chaperone); ENSG00000109805 (non-SMC condensin I complex subunit G); ENSG00000112118 (minichromosome maintenance complex component 3); ENSG00000112742 (TTK protein kinase); ENSG00000113810 (structural maintenance of chromosomes 4); ENSG00000115163 (centromere protein A); ENSG00000117399 (cell division cycle 20); ENSG00000117650 (NIMA-related kinase 2); ENSG00000117724 (centromere protein F); ENSG00000118193 (kinesin family member 14); ENSG00000118655 (DNA cross-link repair 1B); ENSG00000120129 (dual specificity phosphatase 1); ENSG00000121152 (non-SMC condensin I complex subunit H); ENSG00000121621 (kinesin family member 18A); ENSG00000122952 (ZW10 interacting kinetochore protein); ENSG00000123219 (centromere protein K); ENSG00000123485 (Holliday junction recognition protein); ENSG00000126787 (discs; large (Drosophila) homolog-associated protein 5); ENSG00000128944 (kinetochore-localized astrin/SPAG5 binding protein); ENSG00000129810 (shugoshin-like 1 (S. pombe)); ENSG00000131153 (GINS complex subunit 2 (Psf2 homolog)); ENSG00000131747 (topoisomerase (DNA) II alpha); ENSG00000133119 (replication factor C subunit 3); ENSG00000134057 (cyclin B1); ENSG00000134222 (proline/serine-rich coiled-coil 1); ENSG00000134690 (cell division cycle associated 8); ENSG00000135476 (extra spindle pole bodies like 1; separase); ENSG00000136492 (BRCA1 interacting protein C-terminal helicase 1); ENSG00000137309 (high mobility group AT-hook 1); ENSG00000137804 (nucleolar and spindle associated protein 1); ENSG00000137807 (kinesin family member 23); ENSG00000137812 (cancer susceptibility candidate 5); ENSG00000138092 (centromere protein O); ENSG00000138180 (centrosomal protein 55kDa); ENSG00000138778 (centromere protein E); ENSG00000142945 (kinesin family member 2C); ENSG00000143228 (NUF2; NDC80 kinetochore complex component); ENSG00000144554 (Fanconi anemia complementation group D2); ENSG00000146670 (cell division cycle associated 5); ENSG00000146918 (non-SMC condensin II complex subunit G2); ENSG00000147536 (GINS complex subunit 4 (Sld5 homolog)); ENSG00000149503 (inner centromere protein); ENSG00000149948 (high mobility group AT-hook 2); ENSG00000151503 (non-SMC condensin II complex subunit D3); ENSG00000151725 (centromere protein U); ENSG00000153044 (centromere protein H); ENSG00000154839 (spindle and kinetochore associated complex subunit 1); ENSG00000156970 (BUB1B; mitotic checkpoint serine/threonine kinase); ENSG00000159055 (MIS18 kinetochore protein A); ENSG00000161800 (Rac GTPase activating protein 1); ENSG00000161888 (SPC24; NDC80 kinetochore complex component); ENSG00000163535 (shugoshin-like 2 (S. pombe)); ENSG00000164109

(MAD2 mitotic arrest deficient-like 1 (yeast)); ENSG00000164611 (pituitary tumor-transforming 1); ENSG00000164949 (GTP binding protein overexpressed in skeletal muscle); ENSG00000166851 (polo-like kinase 1); ENSG00000167670 (chromatin assembly factor 1 subunit A); ENSG00000168496 (flap structure-specific endonuclease 1); ENSG00000169679 (BUB1; mitotic checkpoint serine/threonine kinase); ENSG00000170312 (cyclin-dependent kinase 1); ENSG00000175063 (ubiquitin conjugating enzyme E2C); ENSG00000175305 (cyclin E2); ENSG00000177602 (germ cell associated 2 (haspin)); ENSG00000178999 (aurora kinase B); ENSG00000186185 (kinesin family member 18B); ENSG00000186871 (excision repair cross-complementation group 6 like); ENSG00000188486 (H2A histone family member X); ENSG00000197299 (Bloom syndrome; RecQ helicase-like); ENSG00000198901 (protein regulator of cytokinesis 1); ENSG00000203760 (centromere protein W); ENSG00000204197 (kinesin family member C1); ENSG00000262634 (spindle and kinetochore associated complex subunit 1); ENSG00000277909 (SPC25; NDC80 kinetochore complex component)

BP GO:0051301 cell division

Annotate: 557

Significant: 89

Expected: 19.67

topGO p-value: < 1e-30

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000011426 (ANLN); ENSG00000066279 (ASPM); ENSG00000076382 (SPAG5); ENSG00000080986 (NDC80); ENSG00000087586 (AURKA); ENSG00000088325 (TPX2); ENSG00000089685 (BIRC5); ENSG00000090889 (KIF4A); ENSG00000094804 (CDC6); ENSG00000100297 (MCM5); ENSG00000101447 (FAM83D); ENSG00000104147 (OIP5); ENSG00000108106 (UBE2S); ENSG00000109805 (NCAPG); ENSG00000110092 (CCND1); ENSG00000111665 (CDCA3); ENSG00000112029 (FBXO5); ENSG00000112984 (KIF20A); ENSG00000113578 (FGF1); ENSG00000113810 (SMC4); ENSG00000115163 (CENPA); ENSG00000117399 (CDC20); ENSG00000117650 (NEK2); ENSG00000117724 (CENPF); ENSG00000118193 (KIF14); ENSG00000119630 (PGF); ENSG00000121152 (NCAPH); ENSG00000122952 (ZWINT); ENSG00000122966 (CIT); ENSG00000128944 (KNSTRN); ENSG00000129195 (FAM64A); ENSG00000129810 (SGOL1); ENSG00000131747 (TOP2A); ENSG00000133101 (CCNA1); ENSG00000134057 (CCNB1); ENSG00000134222 (PSRC1); ENSG00000134690 (CDCA8); ENSG00000135476 (ESPL1); ENSG00000136492 (BRIP1); ENSG00000137804 (NUSAP1); ENSG00000137807 (KIF23); ENSG00000137812 (CASC5); ENSG00000138160 (KIF11); ENSG00000138180 (CEP55); ENSG00000138182 (KIF20B); ENSG00000138778 (CENPE); ENSG00000142945 (KIF2C); ENSG00000143228 (NUF2); ENSG00000144118 (RALB); ENSG00000145386 (CCNA2); ENSG00000146670 (CDCA5); ENSG00000146918 (NCAPG2); ENSG00000149503 (INCENP); ENSG00000149948 (HMGA2); ENSG00000151503 (NCAPD3); ENSG00000154839 (SKA1); ENSG00000156970 (BUB1B); ENSG00000157456 (CCNB2); ENSG00000158402 (CDC25C); ENSG00000159055 (MIS18A); ENSG00000161800 (RACGAP1); ENSG00000161888 (SPC24); ENSG00000162063 (CCNF); ENSG00000163535 (SGOL2); ENSG00000164045 (CDC25A); ENSG00000164109 (MAD2L1); ENSG00000164611 (PTTG1); ENSG00000165480 (SKA3); ENSG00000165891 (E2F7); ENSG00000166851 (PLK1); ENSG00000167553 (TUBA1C); ENSG00000169220 (RGS14); ENSG00000169679 (BUB1); ENSG00000170312 (CDK1); ENSG00000170779 (CDCA4); ENSG00000173207 (CKS1B); ENSG00000175063 (UBE2C); ENSG00000175305 (CCNE2); ENSG00000178999 (AURKB); ENSG00000184661 (CDCA2); ENSG00000186185 (KIF18B); ENSG00000186871 (ERCC6L); ENSG00000197299 (BLM); ENSG00000198901 (PRC1); ENSG00000203760 (CENPW); ENSG00000204197 (KIFC1); ENSG00000244405 (ETV5); ENSG00000262634 (SKA1); ENSG00000277909 (SPC25)

Differentially expressed genes in this GO term (IDs and product descriptions):

ENSG00000011426 (anillin actin binding protein); ENSG00000066279 (abnormal spindle microtubule assembly); ENSG00000076382 (sperm associated antigen 5); ENSG00000080986 (NDC80 kinetochore complex component); ENSG00000087586 (aurora

kinase A); ENSG00000088325 (TPX2; microtubule-associated); ENSG00000089685 (baculoviral IAP repeat containing 5); ENSG00000090889 (kinesin family member 4A); ENSG00000094804 (cell division cycle 6); ENSG00000100297 (minichromosome maintenance complex component 5); ENSG00000101447 (family with sequence similarity 83 member D); ENSG00000104147 (Opa interacting protein 5); ENSG00000108106 (ubiquitin conjugating enzyme E2S); ENSG00000109805 (non-SMC condensin I complex subunit G); ENSG00000110092 (cyclin D1); ENSG00000111665 (cell division cycle associated 3); ENSG00000112029 (F-box protein 5); ENSG00000112984 (kinesin family member 20A); ENSG00000113578 (fibroblast growth factor 1 (acidic)); ENSG00000113810 (structural maintenance of chromosomes 4); ENSG00000115163 (centromere protein A); ENSG00000117399 (cell division cycle 20); ENSG00000117650 (NIMA-related kinase 2); ENSG00000117724 (centromere protein F); ENSG00000118193 (kinesin family member 14); ENSG00000119630 (placental growth factor); ENSG00000121152 (non-SMC condensin I complex subunit H); ENSG00000122952 (ZW10 interacting kinetochore protein); ENSG00000122966 (citron rho-interacting serine/threonine kinase); ENSG00000128944 (kinetochore-localized astrin/SPAG5 binding protein); ENSG00000129195 (family with sequence similarity 64 member A); ENSG00000129810 (shugoshin-like 1 (S. pombe)); ENSG00000131747 (topoisomerase (DNA) II alpha); ENSG00000133101 (cyclin A1); ENSG00000134057 (cyclin B1); ENSG00000134222 (proline/serine-rich coiled-coil 1); ENSG00000134690 (cell division cycle associated 8); ENSG00000135476 (extra spindle pole bodies like 1; separase); ENSG00000136492 (BRCA1 interacting protein C-terminal helicase 1); ENSG00000137804 (nucleolar and spindle associated protein 1); ENSG00000137807 (kinesin family member 23); ENSG00000137812 (cancer susceptibility candidate 5); ENSG00000138160 (kinesin family member 11); ENSG00000138180 (centrosomal protein 55kDa); ENSG00000138182 (kinesin family member 20B); ENSG00000138778 (centromere protein E); ENSG00000142945 (kinesin family member 2C); ENSG00000143228 (NUF2; NDC80 kinetochore complex component); ENSG00000144118 (v-ral simian leukemia viral oncogene homolog B); ENSG00000145386 (cyclin A2); ENSG00000146670 (cell division cycle associated 5); ENSG00000146918 (non-SMC condensin II complex subunit G2); ENSG00000149503 (inner centromere protein); ENSG00000149948 (high mobility group AT-hook 2); ENSG00000151503 (non-SMC condensin II complex subunit D3); ENSG00000154839 (spindle and kinetochore associated complex subunit 1); ENSG00000156970 (BUB1B; mitotic checkpoint serine/threonine kinase); ENSG00000157456 (cyclin B2); ENSG00000158402 (cell division cycle 25C); ENSG00000159055 (MIS18 kinetochore protein A); ENSG00000161800 (Rac GTPase activating protein 1); ENSG00000161888 (SPC24; NDC80 kinetochore complex component); ENSG00000162063 (cyclin F); ENSG00000163535 (shugoshin-like 2 (S. pombe)); ENSG00000164045 (cell division cycle 25A); ENSG00000164109 (MAD2 mitotic arrest deficient-like 1 (yeast)); ENSG00000164611 (pituitary tumor-transforming 1); ENSG00000165480 (spindle and kinetochore associated complex subunit 3); ENSG00000165891 (E2F transcription factor 7); ENSG00000166851 (polo-like kinase 1); ENSG00000167553 (tubulin alpha 1c); ENSG00000169220 (regulator of G-protein signaling 14); ENSG00000169679 (BUB1; mitotic checkpoint serine/threonine kinase); ENSG00000170312 (cyclin-dependent kinase 1); ENSG00000170779 (cell division cycle associated 4); ENSG00000173207 (CDC28 protein kinase regulatory subunit 1B); ENSG00000175063 (ubiquitin conjugating enzyme E2C); ENSG00000175305 (cyclin E2); ENSG00000178999 (aurora kinase B); ENSG00000184661 (cell division cycle associated 2); ENSG00000186185 (kinesin family member 18B); ENSG00000186871 (excision repair cross-complementation group 6 like); ENSG00000197299 (Bloom syndrome; RecQ helicase-like); ENSG00000198901 (protein regulator of cytokinesis 1); ENSG00000203760 (centromere protein W); ENSG00000204197 (kinesin family member C1); ENSG00000244405 (ets variant 5); ENSG00000262634 (spindle and kinetochore associated complex subunit 1); ENSG00000277909 (SPC25; NDC80 kinetochore complex component)

BP GO:0048646 anatomical structure formation involved in morphogenesis
Annotate: 1136
Significant: 63
Expected: 40.11
topGO p-value: 0.0002

Differentially expressed genes in this GO term (IDs and gene names):
ENSG00000012048 (BRCA1); ENSG00000027869 (SH2D2A); ENSG00000054282 (SDCCAG8);
ENSG00000063660 (GPC1); ENSG00000081189 (MEF2C); ENSG00000091879 (ANGPT2);
ENSG00000095383 (TBC1D2); ENSG00000101096 (NFATC2); ENSG00000101384 (JAG1);
ENSG00000105538 (RASIP1); ENSG00000105851 (PIK3CG); ENSG00000107957 (SH3PXD2A);
ENSG00000113578 (FGF1); ENSG00000117525 (F3); ENSG00000119630 (PGF);
ENSG00000120129 (DUSP1); ENSG00000120875 (DUSP4); ENSG00000123358 (NR4A1);
ENSG00000123473 (STIL); ENSG00000125878 (TCF15); ENSG00000125968 (ID1);
ENSG00000128805 (ARHGAP22); ENSG00000128917 (DLL4); ENSG00000130702 (LAMA5);
ENSG00000133121 (STARD13); ENSG00000134215 (VAV3); ENSG00000134954 (ETS1);
ENSG00000135111 (TBX3); ENSG00000135547 (HEY2); ENSG00000136999 (NOV);
ENSG00000137812 (CASC5); ENSG00000138166 (DUSP5); ENSG00000138182 (KIF20B);
ENSG00000138347 (MYPN); ENSG00000138639 (ARHGAP24); ENSG00000139318 (DUSP6);
ENSG00000143119 (CD53); ENSG00000149256 (TENM4); ENSG00000149948 (HMGA2);
ENSG00000154734 (ADAMTS1); ENSG00000157557 (ETS2); ENSG00000160796 (NBEAL2);
ENSG00000162909 (CAPN2); ENSG00000164171 (ITGA2); ENSG00000164532 (TBX20);
ENSG00000164683 (HEY1); ENSG00000164867 (NOS3); ENSG00000165891 (E2F7);
ENSG00000166825 (ANPEP); ENSG00000169429 (CXCL8); ENSG00000171345 (KRT19);
ENSG00000171476 (HOPX); ENSG00000171587 (DSCAM); ENSG00000173083 (HPSE);
ENSG00000176170 (SPHK1); ENSG00000177464 (GPR4); ENSG00000179111 (HES7);
ENSG00000186638 (KIF24); ENSG00000196468 (FGF16); ENSG00000196878 (LAMB3);
ENSG00000204301 (NOTCH4); ENSG00000259207 (ITGB3); ENSG00000276886 (GREM1)

Differentially expressed genes in this GO term (IDs and product descriptions):
ENSG00000012048 (breast cancer 1); ENSG00000027869 (SH2 domain containing 2A);
ENSG00000054282 (serologically defined colon cancer antigen 8); ENSG00000063660
(glypican 1); ENSG00000081189 (myocyte enhancer factor 2C); ENSG00000091879
(angiopoietin 2); ENSG00000095383 (TBC1 domain family member 2); ENSG00000101096
(nuclear factor of activated T-cells; cytoplasmic; calcineurin-dependent 2);
ENSG00000101384 (jagged 1); ENSG00000105538 (Ras interacting protein 1);
ENSG00000105851 (phosphatidylinositol-4;5-bisphosphate 3-kinase catalytic
subunit gamma); ENSG00000107957 (SH3 and PX domains 2A); ENSG00000113578
(fibroblast growth factor 1 (acidic)); ENSG00000117525 (coagulation factor III
(thromboplastin; tissue factor)); ENSG00000119630 (placental growth factor);
ENSG00000120129 (dual specificity phosphatase 1); ENSG00000120875 (dual
specificity phosphatase 4); ENSG00000123358 (nuclear receptor subfamily 4 group
A member 1); ENSG00000123473 (SCL/TAL1 interrupting locus); ENSG00000125878
(transcription factor 15 (basic helix-loop-helix)); ENSG00000125968 (inhibitor
of DNA binding 1; dominant negative helix-loop-helix protein); ENSG00000128805
(Rho GTPase activating protein 22); ENSG00000128917 (delta-like 4
(Drosophila)); ENSG00000130702 (laminin subunit alpha 5); ENSG00000133121 (StAR
related lipid transfer domain containing 13); ENSG00000134215 (vav guanine
nucleotide exchange factor 3); ENSG00000134954 (v-ets avian erythroblastosis
virus E26 oncogene homolog 1); ENSG00000135111 (T-box 3); ENSG00000135547 (hes-
related family bHLH transcription factor with YRPW motif 2); ENSG00000136999
(nephroblastoma overexpressed); ENSG00000137812 (cancer susceptibility candidate
5); ENSG00000138166 (dual specificity phosphatase 5); ENSG00000138182 (kinesin
family member 20B); ENSG00000138347 (myopalladin); ENSG00000138639 (Rho GTPase
activating protein 24); ENSG00000139318 (dual specificity phosphatase 6);
ENSG00000143119 (CD53 molecule); ENSG00000149256 (teneurin transmembrane protein
4); ENSG00000149948 (high mobility group AT-hook 2); ENSG00000154734 (ADAM
metallopeptidase with thrombospondin type 1 motif 1); ENSG00000157557 (v-ets
avian erythroblastosis virus E26 oncogene homolog 2); ENSG00000160796

(neurobeachin like 2); ENSG00000162909 (calpain 2; (m/II) large subunit); ENSG00000164171 (integrin subunit alpha 2); ENSG00000164532 (T-box 20); ENSG00000164683 (hes-related family bHLH transcription factor with YRPW motif 1); ENSG00000164867 (nitric oxide synthase 3); ENSG00000165891 (E2F transcription factor 7); ENSG00000166825 (alanyl (membrane) aminopeptidase); ENSG00000169429 (chemokine (C-X-C motif) ligand 8); ENSG00000171345 (keratin 19; type I); ENSG00000171476 (HOP homeobox); ENSG00000171587 (Down syndrome cell adhesion molecule); ENSG00000173083 (heparanase); ENSG00000176170 (sphingosine kinase 1); ENSG00000177464 (G protein-coupled receptor 4); ENSG00000179111 (hes family bHLH transcription factor 7); ENSG00000186638 (kinesin family member 24); ENSG00000196468 (fibroblast growth factor 16); ENSG00000196878 (laminin subunit beta 3); ENSG00000204301 (notch 4); ENSG00000259207 (integrin subunit beta 3); ENSG00000276886 (gremlin 1; DAN family BMP antagonist)

BP GO:0048856 anatomical structure development

Annotate: 5012

Significant: 232

Expected: 176.97

topGO p-value: 0.0008

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000001617 (SEMA3F); ENSG00000006468 (ETV1); ENSG00000011426 (ANLN); ENSG00000012048 (BRCA1); ENSG00000012223 (LTF); ENSG00000013810 (TACC3); ENSG00000026508 (CD44); ENSG00000027869 (SH2D2A); ENSG00000038295 (TLL1); ENSG00000041982 (TNC); ENSG00000051341 (POLQ); ENSG00000054282 (SDCCAG8); ENSG00000057657 (PRDM1); ENSG00000058085 (LAMC2); ENSG00000060656 (PTPRU); ENSG00000063660 (GPC1); ENSG00000065618 (COL17A1); ENSG00000066248 (NGEF); ENSG00000066279 (ASPM); ENSG00000066735 (KIF26A); ENSG00000069482 (GAL); ENSG00000070614 (NDST1); ENSG00000071054 (MAP4K4); ENSG00000071539 (TRIP13); ENSG00000075702 (WDR62); ENSG00000081189 (MEF2C); ENSG00000085662 (AKR1B1); ENSG00000085999 (RAD54L); ENSG00000087494 (PTHLH); ENSG00000087586 (AURKA); ENSG00000090776 (EFNB1); ENSG00000091879 (ANGPT2); ENSG00000095383 (TBC1D2); ENSG00000095752 (IL11); ENSG00000100095 (SEZ6L); ENSG00000101003 (GINS1); ENSG00000101096 (NFATC2); ENSG00000101265 (RASSF2); ENSG00000101384 (JAG1); ENSG00000101412 (E2F1); ENSG00000101447 (FAM83D); ENSG00000102174 (PHEX); ENSG00000102385 (DRP2); ENSG00000102387 (TAF7L); ENSG00000102575 (ACP5); ENSG00000102879 (CORO1A); ENSG00000103196 (CRISPLD2); ENSG00000103257 (SLC7A5); ENSG00000104419 (NDRG1); ENSG00000105011 (ASF1B); ENSG00000105538 (RASIP1); ENSG00000105835 (NAMPT); ENSG00000105851 (PIK3CG); ENSG00000106852 (LHX6); ENSG00000107796 (ACTA2); ENSG00000107957 (SH3PXD2A); ENSG00000108342 (CSF3); ENSG00000110092 (CCND1); ENSG00000111252 (SH2B3); ENSG00000112029 (FBXO5); ENSG00000112139 (MDGA1); ENSG00000113555 (PCDH12); ENSG00000113578 (FGF1); ENSG00000115461 (IGFBP5); ENSG00000115758 (ODC1); ENSG00000115884 (SDC1); ENSG00000116132 (PRRX1); ENSG00000116133 (DHCR24); ENSG00000116285 (ERRFI1); ENSG00000117399 (CDC20); ENSG00000117525 (F3); ENSG00000117650 (NEK2); ENSG00000117724 (CENPF); ENSG00000118193 (KIF14); ENSG00000119630 (PGF); ENSG00000120068 (HOXB8); ENSG00000120129 (DUSP1); ENSG00000120738 (EGR1); ENSG00000120875 (DUSP4); ENSG00000121621 (KIF18A); ENSG00000121966 (CXCR4); ENSG00000122966 (CIT); ENSG00000123080 (CDKN2C); ENSG00000123358 (NR4A1); ENSG00000123473 (STIL); ENSG00000123977 (DAW1); ENSG00000124785 (NRN1); ENSG00000125848 (FLRT3); ENSG00000125878 (TCF15); ENSG00000125968 (ID1); ENSG00000127528 (KLF2); ENSG00000128578 (STRIP2); ENSG00000128805 (ARHGAP22); ENSG00000128917 (DLL4); ENSG00000130222 (GADD45G); ENSG00000130702 (LAMA5); ENSG00000130816 (DNMT1); ENSG00000131747 (TOP2A); ENSG00000133121 (STARD13); ENSG00000133800 (LYVE1); ENSG00000134057 (CCNB1); ENSG00000134215 (VAV3); ENSG00000134242 (PTPN22); ENSG00000134333 (LDHA); ENSG00000134470 (IL15RA); ENSG00000134762 (DSC3); ENSG00000134954 (ETS1); ENSG00000135111 (TBX3); ENSG00000135333 (EPHA7); ENSG00000135547 (HEY2); ENSG00000136167 (LCP1);

ENSG00000136237 (RAPGEF5); ENSG00000136492 (BRIP1); ENSG00000136630 (HLX);
ENSG00000136999 (NOV); ENSG00000137812 (CASC5); ENSG00000137936 (BCAR3);
ENSG00000138166 (DUSP5); ENSG00000138182 (KIF20B); ENSG00000138347 (MYPN);
ENSG00000138639 (ARHGAP24); ENSG00000138778 (CENPE); ENSG00000139318 (DUSP6);
ENSG00000140379 (BCL2A1); ENSG00000142731 (PLK4); ENSG00000143119 (CD53);
ENSG00000143499 (SMYD2); ENSG00000144554 (FANCD2); ENSG00000145386 (CCNA2);
ENSG00000146918 (NCAPG2); ENSG00000147408 (CSGALNACT1); ENSG00000147536 (GINS4);
ENSG00000148082 (SHC3); ENSG00000148773 (MKI67); ENSG00000149256 (TENM4);
ENSG00000149781 (FERMT3); ENSG00000149798 (CDC42EP2); ENSG00000149948 (HMGA2);
ENSG00000151388 (ADAMTS12); ENSG00000151615 (POU4F2); ENSG00000151725 (CENPU);
ENSG00000154146 (NRGN); ENSG00000154639 (CXADR); ENSG00000154734 (ADAMTS1);
ENSG00000154736 (ADAMTS5); ENSG00000155966 (AFF2); ENSG00000157456 (CCNB2);
ENSG00000157557 (ETS2); ENSG00000158859 (ADAMTS4); ENSG00000159167 (STC1);
ENSG00000159228 (CBR1); ENSG00000159399 (HK2); ENSG00000160796 (NBEAL2);
ENSG00000160888 (IER2); ENSG00000161681 (SHANK1); ENSG00000161800 (RACGAP1);
ENSG00000162063 (CCNF); ENSG00000162407 (PLPP3); ENSG00000162909 (CAPN2);
ENSG00000163092 (XIRP2); ENSG00000163171 (CDC42EP3); ENSG00000163638 (ADAMTS9);
ENSG00000163739 (CXCL1); ENSG00000164087 (POC1A); ENSG00000164171 (ITGA2);
ENSG00000164509 (IL31RA); ENSG00000164532 (TBX20); ENSG00000164683 (HEY1);
ENSG00000164867 (NOS3); ENSG00000165304 (MELK); ENSG00000165891 (E2F7);
ENSG00000166250 (CLMP); ENSG00000166825 (ANPEP); ENSG00000166924 (NYAP1);
ENSG00000168389 (MFSD2A); ENSG00000168685 (IL7R); ENSG00000169220 (RGS14);
ENSG00000169247 (SH3TC2); ENSG00000169429 (CXCL8); ENSG00000169744 (LDB2);
ENSG00000170312 (CDK1); ENSG00000170345 (FOS); ENSG00000170891 (CYTL1);
ENSG00000171246 (NPTX1); ENSG00000171320 (ESCO2); ENSG00000171345 (KRT19);
ENSG00000171346 (KRT15); ENSG00000171476 (HOPX); ENSG00000171522 (PTGER4);
ENSG00000171587 (DSCAM); ENSG00000173083 (HPSE); ENSG00000173334 (TRIB1);
ENSG00000174371 (EXO1); ENSG00000175592 (FOSL1); ENSG00000175745 (NR2F1);
ENSG00000175832 (ETV4); ENSG00000176170 (SPHK1); ENSG00000176225 (RTTN);
ENSG00000176597 (B3GNT5); ENSG00000176890 (TYMS); ENSG00000177464 (GPR4);
ENSG00000178999 (AURKB); ENSG00000179111 (HES7); ENSG00000180730 (SHISA2);
ENSG00000182667 (NTM); ENSG00000183856 (IQGAP3); ENSG00000183963 (SMTN);
ENSG00000184113 (CLDN5); ENSG00000184557 (SOCS3); ENSG00000186638 (KIF24);
ENSG00000186642 (PDE2A); ENSG00000187678 (SPRY4); ENSG00000187741 (FANCA);
ENSG00000187840 (EIF4EBP1); ENSG00000188486 (H2AFX); ENSG00000188487 (INSC);
ENSG00000189120 (SP6); ENSG00000196468 (FGF16); ENSG00000196549 (MME);
ENSG00000196878 (LAMB3); ENSG00000197467 (COL13A1); ENSG00000198797 (BRINP2);
ENSG00000198805 (PNP); ENSG00000204301 (NOTCH4); ENSG00000228716 (DHFR);
ENSG00000233608 (TWIST2); ENSG00000244405 (ETV5); ENSG00000253368 (TRNP1);
ENSG00000259207 (ITGB3); ENSG00000261594 (TPBGL); ENSG00000276886 (GREM1);
ENSG00000277586 (NEFL)

Differentially expressed genes in this GO term (IDs and product descriptions):
ENSG00000001617 (sema domain; immunoglobulin domain (Ig); short basic domain;
secreted; (semaphorin) 3F); ENSG00000006468 (ets variant 1); ENSG00000011426
(anillin actin binding protein); ENSG00000012048 (breast cancer 1);
ENSG00000012223 (lactotransferrin); ENSG00000013810 (transforming; acidic
coiled-coil containing protein 3); ENSG00000026508 (CD44 molecule (Indian blood
group)); ENSG00000027869 (SH2 domain containing 2A); ENSG00000038295 (tollid
like 1); ENSG00000041982 (tenascin C); ENSG00000051341 (polymerase (DNA
directed); theta); ENSG00000054282 (serologically defined colon cancer antigen
8); ENSG00000057657 (PR domain containing 1; with ZNF domain); ENSG00000058085
(laminin subunit gamma 2); ENSG00000060656 (protein tyrosine phosphatase;
receptor type; U); ENSG00000063660 (glypican 1); ENSG00000065618 (collagen; type
XVII; alpha 1); ENSG00000066248 (neuronal guanine nucleotide exchange factor);
ENSG00000066279 (abnormal spindle microtubule assembly); ENSG00000066735
(kinesin family member 26A); ENSG00000069482 (galanin/GMAP prepropeptide);
ENSG00000070614 (N-deacetylase/N-sulfotransferase (heparan glucosaminyl) 1);

ENSG00000071054 (mitogen-activated protein kinase kinase kinase 4);
ENSG00000071539 (thyroid hormone receptor interactor 13); ENSG00000075702 (WD repeat domain 62); ENSG00000081189 (myocyte enhancer factor 2C); ENSG00000085662 (aldo-keto reductase family 1; member B1 (aldose reductase)); ENSG00000085999 (RAD54-like (S. cerevisiae)); ENSG00000087494 (parathyroid hormone-like hormone); ENSG00000087586 (aurora kinase A); ENSG00000090776 (ephrin-B1); ENSG00000091879 (angiopoietin 2); ENSG00000095383 (TBC1 domain family member 2); ENSG00000095752 (interleukin 11); ENSG00000100095 (seizure related 6 homolog (mouse)-like); ENSG00000101003 (GINS complex subunit 1 (Psf1 homolog)); ENSG00000101096 (nuclear factor of activated T-cells; cytoplasmic; calcineurin-dependent 2); ENSG00000101265 (Ras association (RalGDS/AF-6) domain family member 2); ENSG00000101384 (jagged 1); ENSG00000101412 (E2F transcription factor 1); ENSG00000101447 (family with sequence similarity 83 member D); ENSG00000102174 (phosphate regulating endopeptidase homolog; X-linked); ENSG00000102385 (dystrophin related protein 2); ENSG00000102387 (TATA-box binding protein associated factor 7 like); ENSG00000102575 (acid phosphatase 5; tartrate resistant); ENSG00000102879 (coronin; actin binding protein; 1A); ENSG00000103196 (cysteine-rich secretory protein LCCL domain containing 2); ENSG00000103257 (solute carrier family 7 (amino acid transporter light chain; L system); member 5); ENSG00000104419 (N-myc downstream regulated 1); ENSG00000105011 (anti-silencing function 1B histone chaperone); ENSG00000105538 (Ras interacting protein 1); ENSG00000105835 (nicotinamide phosphoribosyltransferase); ENSG00000105851 (phosphatidylinositol-4;5-bisphosphate 3-kinase catalytic subunit gamma); ENSG00000106852 (LIM homeobox 6); ENSG00000107796 (actin; alpha 2; smooth muscle; aorta); ENSG00000107957 (SH3 and PX domains 2A); ENSG00000108342 (colony stimulating factor 3); ENSG00000110092 (cyclin D1); ENSG00000111252 (SH2B adaptor protein 3); ENSG00000112029 (F-box protein 5); ENSG00000112139 (MAM domain containing glycosylphosphatidylinositol anchor 1); ENSG00000113555 (protocadherin 12); ENSG00000113578 (fibroblast growth factor 1 (acidic)); ENSG00000115461 (insulin like growth factor binding protein 5); ENSG00000115758 (ornithine decarboxylase 1); ENSG00000115884 (syndecan 1); ENSG00000116132 (paired related homeobox 1); ENSG00000116133 (24-dehydrocholesterol reductase); ENSG00000116285 (ERBB receptor feedback inhibitor 1); ENSG00000117399 (cell division cycle 20); ENSG00000117525 (coagulation factor III (thromboplastin; tissue factor)); ENSG00000117650 (NIMA-related kinase 2); ENSG00000117724 (centromere protein F); ENSG00000118193 (kinesin family member 14); ENSG00000119630 (placental growth factor); ENSG00000120068 (homeobox B8); ENSG00000120129 (dual specificity phosphatase 1); ENSG00000120738 (early growth response 1); ENSG00000120875 (dual specificity phosphatase 4); ENSG00000121621 (kinesin family member 18A); ENSG00000121966 (chemokine (C-X-C motif) receptor 4); ENSG00000122966 (citron rho-interacting serine/threonine kinase); ENSG00000123080 (cyclin-dependent kinase inhibitor 2C (p18; inhibits CDK4)); ENSG00000123358 (nuclear receptor subfamily 4 group A member 1); ENSG00000123473 (SCL/TAL1 interrupting locus); ENSG00000123977 (dynein assembly factor with WDR repeat domains 1); ENSG00000124785 (neuritin 1); ENSG00000125848 (fibronectin leucine rich transmembrane protein 3); ENSG00000125878 (transcription factor 15 (basic helix-loop-helix)); ENSG00000125968 (inhibitor of DNA binding 1; dominant negative helix-loop-helix protein); ENSG00000127528 (Kruppel-like factor 2); ENSG00000128578 (striatin interacting protein 2); ENSG00000128805 (Rho GTPase activating protein 22); ENSG00000128917 (delta-like 4 (Drosophila)); ENSG00000130222 (growth arrest and DNA damage inducible gamma); ENSG00000130702 (laminin subunit alpha 5); ENSG00000130816 (DNA (cytosine-5-)-methyltransferase 1); ENSG00000131747 (topoisomerase (DNA) II alpha); ENSG00000133121 (STAR related lipid transfer domain containing 13); ENSG00000133800 (lymphatic vessel endothelial hyaluronan receptor 1); ENSG00000134057 (cyclin B1); ENSG00000134215 (vav guanine nucleotide exchange factor 3); ENSG00000134242 (protein tyrosine phosphatase; non-receptor type 22 (lymphoid)); ENSG00000134333 (lactate

dehydrogenase A); ENSG00000134470 (interleukin 15 receptor subunit alpha); ENSG00000134762 (desmocollin 3); ENSG00000134954 (v-ets avian erythroblastosis virus E26 oncogene homolog 1); ENSG00000135111 (T-box 3); ENSG00000135333 (EPH receptor A7); ENSG00000135547 (hes-related family bHLH transcription factor with YRPW motif 2); ENSG00000136167 (lymphocyte cytosolic protein 1 (L-plastin)); ENSG00000136237 (Rap guanine nucleotide exchange factor 5); ENSG00000136492 (BRCA1 interacting protein C-terminal helicase 1); ENSG00000136630 (H2.0-like homeobox); ENSG00000136999 (nephroblastoma overexpressed); ENSG00000137812 (cancer susceptibility candidate 5); ENSG00000137936 (breast cancer anti-estrogen resistance 3); ENSG00000138166 (dual specificity phosphatase 5); ENSG00000138182 (kinesin family member 20B); ENSG00000138347 (myopalladin); ENSG00000138639 (Rho GTPase activating protein 24); ENSG00000138778 (centromere protein E); ENSG00000139318 (dual specificity phosphatase 6); ENSG00000140379 (BCL2-related protein A1); ENSG00000142731 (polo-like kinase 4); ENSG00000143119 (CD53 molecule); ENSG00000143499 (SET and MYND domain containing 2); ENSG00000144554 (Fanconi anemia complementation group D2); ENSG00000145386 (cyclin A2); ENSG00000146918 (non-SMC condensin II complex subunit G2); ENSG00000147408 (chondroitin sulfate N-acetylgalactosaminyltransferase 1); ENSG00000147536 (GINS complex subunit 4 (Sld5 homolog)); ENSG00000148082 (SHC (Src homology 2 domain containing) transforming protein 3); ENSG00000148773 (marker of proliferation Ki-67); ENSG00000149256 (teneurin transmembrane protein 4); ENSG00000149781 (fermitin family member 3); ENSG00000149798 (CDC42 effector protein (Rho GTPase binding) 2); ENSG00000149948 (high mobility group AT-hook 2); ENSG00000151388 (ADAM metalloproteinase with thrombospondin type 1 motif 12); ENSG00000151615 (POU class 4 homeobox 2); ENSG00000151725 (centromere protein U); ENSG00000154146 (neurogranin); ENSG00000154639 (coxsackie virus and adenovirus receptor); ENSG00000154734 (ADAM metalloproteinase with thrombospondin type 1 motif 1); ENSG00000154736 (ADAM metalloproteinase with thrombospondin type 1 motif 5); ENSG00000155966 (AF4/FMR2 family member 2); ENSG00000157456 (cyclin B2); ENSG00000157557 (v-ets avian erythroblastosis virus E26 oncogene homolog 2); ENSG00000158859 (ADAM metalloproteinase with thrombospondin type 1 motif 4); ENSG00000159167 (stanniocalcin 1); ENSG00000159228 (carbonyl reductase 1); ENSG00000159399 (hexokinase 2); ENSG00000160796 (neurobeachin like 2); ENSG00000160888 (immediate early response 2); ENSG00000161681 (SH3 and multiple ankyrin repeat domains 1); ENSG00000161800 (Rac GTPase activating protein 1); ENSG00000162063 (cyclin F); ENSG00000162407 (phospholipid phosphatase 3); ENSG00000162909 (calpain 2; (m/II) large subunit); ENSG00000163092 (xin actin binding repeat containing 2); ENSG00000163171 (CDC42 effector protein (Rho GTPase binding) 3); ENSG00000163638 (ADAM metalloproteinase with thrombospondin type 1 motif 9); ENSG00000163739 (chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity; alpha)); ENSG00000164087 (POC1 centriolar protein A); ENSG00000164171 (integrin subunit alpha 2); ENSG00000164509 (interleukin 31 receptor A); ENSG00000164532 (T-box 20); ENSG00000164683 (hes-related family bHLH transcription factor with YRPW motif 1); ENSG00000164867 (nitric oxide synthase 3); ENSG00000165304 (maternal embryonic leucine zipper kinase); ENSG00000165891 (E2F transcription factor 7); ENSG00000166250 (CXADR-like membrane protein); ENSG00000166825 (alanyl (membrane) aminopeptidase); ENSG00000166924 (neuronal tyrosine-phosphorylated phosphoinositide-3-kinase adaptor 1); ENSG00000168389 (major facilitator superfamily domain containing 2A); ENSG00000168685 (interleukin 7 receptor); ENSG00000169220 (regulator of G-protein signaling 14); ENSG00000169247 (SH3 domain and tetratricopeptide repeats 2); ENSG00000169429 (chemokine (C-X-C motif) ligand 8); ENSG00000169744 (LIM domain binding 2); ENSG00000170312 (cyclin-dependent kinase 1); ENSG00000170345 (FBJ murine osteosarcoma viral oncogene homolog); ENSG00000170891 (cytokine like 1); ENSG00000171246 (neuronal pentraxin I); ENSG00000171320 (establishment of sister chromatid cohesion N-acetyltransferase 2); ENSG00000171345 (keratin 19; type I); ENSG00000171346 (keratin 15; type I); ENSG00000171476 (HOP homeobox); ENSG00000171522 (prostaglandin E receptor 4); ENSG00000171587 (Down syndrome

cell adhesion molecule); ENSG00000173083 (heparanase); ENSG00000173334 (tribbles pseudokinase 1); ENSG00000174371 (exonuclease 1); ENSG00000175592 (FOS-like antigen 1); ENSG00000175745 (nuclear receptor subfamily 2 group F member 1); ENSG00000175832 (ets variant 4); ENSG00000176170 (sphingosine kinase 1); ENSG00000176225 (rotatin); ENSG00000176597 (UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltransferase 5); ENSG00000176890 (thymidylate synthetase); ENSG00000177464 (G protein-coupled receptor 4); ENSG00000178999 (aurora kinase B); ENSG00000179111 (hes family bHLH transcription factor 7); ENSG00000180730 (shisa family member 2); ENSG00000182667 (neurotrimin); ENSG00000183856 (IQ motif containing GTPase activating protein 3); ENSG00000183963 (smoothelin); ENSG00000184113 (claudin 5); ENSG00000184557 (suppressor of cytokine signaling 3); ENSG00000186638 (kinesin family member 24); ENSG00000186642 (phosphodiesterase 2A); ENSG00000187678 (sprouty RTK signaling antagonist 4); ENSG00000187741 (Fanconi anemia complementation group A); ENSG00000187840 (eukaryotic translation initiation factor 4E binding protein 1); ENSG00000188486 (H2A histone family member X); ENSG00000188487 (inscuteable homolog (Drosophila)); ENSG00000189120 (Sp6 transcription factor); ENSG00000196468 (fibroblast growth factor 16); ENSG00000196549 (membrane metallo-endopeptidase); ENSG00000196878 (laminin subunit beta 3); ENSG00000197467 (collagen; type XIII; alpha 1); ENSG00000198797 (bone morphogenetic protein/retinoic acid inducible neural-specific 2); ENSG00000198805 (purine nucleoside phosphorylase); ENSG00000204301 (notch 4); ENSG00000228716 (dihydrofolate reductase); ENSG00000233608 (twist family bHLH transcription factor 2); ENSG00000244405 (ets variant 5); ENSG00000253368 (TMF1-regulated nuclear protein 1); ENSG00000259207 (integrin subunit beta 3); ENSG00000261594 (trophoblast glycoprotein-like); ENSG00000276886 (gremlin 1; DAN family BMP antagonist); ENSG00000277586 (neurofilament; light polypeptide)

BP GO:0022607 cellular component assembly

Annotate: 2616

Significant: 113

Expected: 92.37

topGO p-value: 0.0026

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000011426 (ANLN); ENSG00000012048 (BRCA1); ENSG00000026559 (KCNG1); ENSG00000051180 (RAD51); ENSG00000051341 (POLQ); ENSG00000051523 (CYBA); ENSG00000058085 (LAMC2); ENSG00000058804 (NDC1); ENSG00000063660 (GPC1); ENSG00000065618 (COL17A1); ENSG00000066279 (ASPM); ENSG00000071054 (MAP4K4); ENSG00000071539 (TRIP13); ENSG00000073111 (MCM2); ENSG00000075702 (WDR62); ENSG00000081189 (MEF2C); ENSG00000087586 (AURKA); ENSG00000088325 (TPX2); ENSG00000089685 (BIRC5); ENSG00000090889 (KIF4A); ENSG00000093009 (CDC45); ENSG00000095383 (TBC1D2); ENSG00000096433 (ITPR3); ENSG00000100162 (CENPM); ENSG00000101057 (MYBL2); ENSG00000101955 (SRPX); ENSG00000102384 (CENPI); ENSG00000102387 (TAF7L); ENSG00000102879 (CORO1A); ENSG00000103490 (PYCARD); ENSG00000104147 (OIP5); ENSG00000105011 (ASF1B); ENSG00000107957 (SH3PXD2A); ENSG00000108106 (UBE2S); ENSG00000108342 (CSF3); ENSG00000110031 (LPXN); ENSG00000112029 (FBXO5); ENSG00000115163 (CENPA); ENSG00000115884 (SDC1); ENSG00000116741 (RGS2); ENSG00000117399 (CDC20); ENSG00000117650 (NEK2); ENSG00000117724 (CENPF); ENSG00000118193 (KIF14); ENSG00000123219 (CENPK); ENSG00000123473 (STIL); ENSG00000123485 (HJURP); ENSG00000123892 (RAB38); ENSG00000125848 (FLRT3); ENSG00000125968 (ID1); ENSG00000128340 (RAC2); ENSG00000130702 (LAMA5); ENSG00000130755 (GMFG); ENSG00000134057 (CCNB1); ENSG00000134215 (VAV3); ENSG00000134222 (PSRC1); ENSG00000135333 (EPHA7); ENSG00000135547 (HEY2); ENSG00000136167 (LCPI); ENSG00000136492 (BRIP1); ENSG00000137309 (HMGA1); ENSG00000137807 (KIF23); ENSG00000137812 (CASC5); ENSG00000138092 (CENPO); ENSG00000138160 (KIF11); ENSG00000138347 (MYPN); ENSG00000138778 (CENPE); ENSG00000140534 (TICRR); ENSG00000142731 (PLK4);

ENSG00000144118 (RALB); ENSG00000149256 (TENM4); ENSG00000149781 (FERMT3);
ENSG00000149798 (CDC42EP2); ENSG00000149948 (HMG2); ENSG00000151725 (CENPU);
ENSG00000153044 (CENPH); ENSG00000159055 (MIS18A); ENSG00000161681 (SHANK1);
ENSG00000161800 (RACGAP1); ENSG00000163171 (CDC42EP3); ENSG00000164171 (ITGA2);
ENSG00000164532 (TBX20); ENSG00000166851 (PLK1); ENSG00000167670 (CHAF1A);
ENSG00000167900 (TK1); ENSG00000168404 (MLKL); ENSG00000170312 (CDK1);
ENSG00000171345 (KRT19); ENSG00000171522 (PTGER4); ENSG00000171587 (DSCAM);
ENSG00000171848 (RRM2); ENSG00000173599 (PC); ENSG00000175063 (UBE2C);
ENSG00000175592 (FOSL1); ENSG00000176974 (SHMT1); ENSG00000178999 (AURKB);
ENSG00000181652 (ATG9B); ENSG00000181885 (CLDN7); ENSG00000184113 (CLDN5);
ENSG00000184363 (PKP3); ENSG00000186638 (KIF24); ENSG00000187017 (ESPN);
ENSG00000187741 (FANCA); ENSG00000187840 (EIF4EBP1); ENSG00000188486 (H2AFX);
ENSG00000196611 (MMP1); ENSG00000196878 (LAMB3); ENSG00000197299 (BLM);
ENSG00000203760 (CENPW); ENSG00000204197 (KIFC1); ENSG00000259207 (ITGB3);
ENSG00000276886 (GREM1); ENSG00000277586 (NEFL)

Differentially expressed genes in this GO term (IDs and product descriptions):
ENSG00000011426 (anillin actin binding protein); ENSG00000012048 (breast cancer
1); ENSG00000026559 (potassium channel; voltage gated modifier subfamily G;
member 1); ENSG00000051180 (RAD51 recombinase); ENSG00000051341 (polymerase
(DNA directed); theta); ENSG00000051523 (cytochrome b-245; alpha polypeptide);
ENSG00000058085 (laminin subunit gamma 2); ENSG00000058804 (NDC1 transmembrane
nucleoporin); ENSG00000063660 (glypican 1); ENSG00000065618 (collagen; type
XVII; alpha 1); ENSG00000066279 (abnormal spindle microtubule assembly);
ENSG00000071054 (mitogen-activated protein kinase kinase kinase 4);
ENSG00000071539 (thyroid hormone receptor interactor 13); ENSG00000073111
(minichromosome maintenance complex component 2); ENSG00000075702 (WD repeat
domain 62); ENSG00000081189 (myocyte enhancer factor 2C); ENSG00000087586
(aurora kinase A); ENSG00000088325 (TPX2; microtubule-associated);
ENSG00000089685 (baculoviral IAP repeat containing 5); ENSG00000090889 (kinesin
family member 4A); ENSG00000093009 (cell division cycle 45); ENSG00000095383
(TBC1 domain family member 2); ENSG00000096433 (inositol 1;4;5-trisphosphate
receptor; type 3); ENSG00000100162 (centromere protein M); ENSG00000101057 (v-
myb avian myeloblastosis viral oncogene homolog-like 2); ENSG00000101955 (sushi-
repeat containing protein; X-linked); ENSG00000102384 (centromere protein I);
ENSG00000102387 (TATA-box binding protein associated factor 7 like);
ENSG00000102879 (coronin; actin binding protein; 1A); ENSG00000103490 (PYD and
CARD domain containing); ENSG00000104147 (Opa interacting protein 5);
ENSG00000105011 (anti-silencing function 1B histone chaperone); ENSG00000107957
(SH3 and PX domains 2A); ENSG00000108106 (ubiquitin conjugating enzyme E2S);
ENSG00000108342 (colony stimulating factor 3); ENSG00000110031 (leupaxin);
ENSG00000112029 (F-box protein 5); ENSG00000115163 (centromere protein A);
ENSG00000115884 (syndecan 1); ENSG00000116741 (regulator of G-protein signaling
2); ENSG00000117399 (cell division cycle 20); ENSG00000117650 (NIMA-related
kinase 2); ENSG00000117724 (centromere protein F); ENSG00000118193 (kinesin
family member 14); ENSG00000123219 (centromere protein K); ENSG00000123473
(SCL/TAL1 interrupting locus); ENSG00000123485 (Holliday junction recognition
protein); ENSG00000123892 (RAB38; member RAS oncogene family); ENSG00000125848
(fibronectin leucine rich transmembrane protein 3); ENSG00000125968 (inhibitor
of DNA binding 1; dominant negative helix-loop-helix protein); ENSG00000128340
(ras-related C3 botulinum toxin substrate 2 (rho family; small GTP binding
protein Rac2)); ENSG00000130702 (laminin subunit alpha 5); ENSG00000130755 (glia
maturation factor; gamma); ENSG00000134057 (cyclin B1); ENSG00000134215 (vav
guanine nucleotide exchange factor 3); ENSG00000134222 (proline/serine-rich
coiled-coil 1); ENSG00000135333 (EPH receptor A7); ENSG00000135547 (hes-related
family bHLH transcription factor with YRPW motif 2); ENSG00000136167 (lymphocyte
cytosolic protein 1 (L-plastin)); ENSG00000136492 (BRCA1 interacting protein C-
terminal helicase 1); ENSG00000137309 (high mobility group AT-hook 1);

ENSG00000137807 (kinesin family member 23); ENSG00000137812 (cancer susceptibility candidate 5); ENSG00000138092 (centromere protein O); ENSG00000138160 (kinesin family member 11); ENSG00000138347 (myopalladin); ENSG00000138778 (centromere protein E); ENSG00000140534 (TOPBP1-interacting checkpoint and replication regulator); ENSG00000142731 (polo-like kinase 4); ENSG00000144118 (v-ral simian leukemia viral oncogene homolog B); ENSG00000149256 (teneurin transmembrane protein 4); ENSG00000149781 (fermitin family member 3); ENSG00000149798 (CDC42 effector protein (Rho GTPase binding) 2); ENSG00000149948 (high mobility group AT-hook 2); ENSG00000151725 (centromere protein U); ENSG00000153044 (centromere protein H); ENSG00000159055 (MIS18 kinetochore protein A); ENSG00000161681 (SH3 and multiple ankyrin repeat domains 1); ENSG00000161800 (Rac GTPase activating protein 1); ENSG00000163171 (CDC42 effector protein (Rho GTPase binding) 3); ENSG00000164171 (integrin subunit alpha 2); ENSG00000164532 (T-box 20); ENSG00000166851 (polo-like kinase 1); ENSG00000167670 (chromatin assembly factor 1 subunit A); ENSG00000167900 (thymidine kinase 1; soluble); ENSG00000168404 (mixed lineage kinase domain-like); ENSG00000170312 (cyclin-dependent kinase 1); ENSG00000171345 (keratin 19; type I); ENSG00000171522 (prostaglandin E receptor 4); ENSG00000171587 (Down syndrome cell adhesion molecule); ENSG00000171848 (ribonucleotide reductase M2); ENSG00000173599 (pyruvate carboxylase); ENSG00000175063 (ubiquitin conjugating enzyme E2C); ENSG00000175592 (FOS-like antigen 1); ENSG00000176974 (serine hydroxymethyltransferase 1 (soluble)); ENSG00000178999 (aurora kinase B); ENSG00000181652 (autophagy related 9B); ENSG00000181885 (claudin 7); ENSG00000184113 (claudin 5); ENSG00000184363 (plakophilin 3); ENSG00000186638 (kinesin family member 24); ENSG00000187017 (espin); ENSG00000187741 (Fanconi anemia complementation group A); ENSG00000187840 (eukaryotic translation initiation factor 4E binding protein 1); ENSG00000188486 (H2A histone family member X); ENSG00000196611 (matrix metalloproteinase 1); ENSG00000196878 (laminin subunit beta 3); ENSG00000197299 (Bloom syndrome; RecQ helicase-like); ENSG00000203760 (centromere protein W); ENSG00000204197 (kinesin family member C1); ENSG00000259207 (integrin subunit beta 3); ENSG00000276886 (gremlin 1; DAN family BMP antagonist); ENSG00000277586 (neurofilament; light polypeptide)

BP GO:0065003 macromolecular complex assembly

Annotate: 1709

Significant: 65

Expected: 60.34

topGO p-value: 0.0037

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000011426 (ANLN); ENSG00000026559 (KCNG1); ENSG00000051180 (RAD51); ENSG00000051341 (POLQ); ENSG00000051523 (CYBA); ENSG00000058804 (NDC1); ENSG00000073111 (MCM2); ENSG00000093009 (CDC45); ENSG00000096433 (ITPR3); ENSG00000100162 (CENPM); ENSG00000102384 (CENPI); ENSG00000102387 (TAF7L); ENSG00000102879 (CORO1A); ENSG00000103490 (PYCARD); ENSG00000104147 (OIP5); ENSG00000105011 (ASF1B); ENSG00000107957 (SH3PXD2A); ENSG00000108106 (UBE2S); ENSG00000108342 (CSF3); ENSG00000110031 (LPXN); ENSG00000112029 (FBXO5); ENSG00000115163 (CENPA); ENSG00000116741 (RGS2); ENSG00000117724 (CENPF); ENSG00000118193 (KIF14); ENSG00000123219 (CENPK); ENSG00000123485 (HJURP); ENSG00000130755 (GMFG); ENSG00000134057 (CCNB1); ENSG00000134222 (PSRC1); ENSG00000135547 (HEY2); ENSG00000136167 (LCP1); ENSG00000137309 (HMGA1); ENSG00000137812 (CASC5); ENSG00000138092 (CENPO); ENSG00000138778 (CENPE); ENSG00000140534 (TICRR); ENSG00000144118 (RALB); ENSG00000149781 (FERMT3); ENSG00000149798 (CDC42EP2); ENSG00000149948 (HMGA2); ENSG00000151725 (CENPU); ENSG00000153044 (CENPH); ENSG00000159055 (MIS18A); ENSG00000161681 (SHANK1); ENSG00000163171 (CDC42EP3); ENSG00000164532 (TBX20); ENSG00000167670 (CHAF1A); ENSG00000167900 (TK1); ENSG00000168404 (MLKL); ENSG00000170312 (CDK1); ENSG00000171522 (PTGER4); ENSG00000171848 (RRM2); ENSG00000175063 (UBE2C);

ENSG00000175592 (FOSL1); ENSG00000176974 (SHMT1); ENSG00000181885 (CLDN7);
ENSG00000187741 (FANCA); ENSG00000187840 (EIF4EBP1); ENSG00000188486 (H2AFX);
ENSG00000196611 (MMP1); ENSG00000197299 (BLM); ENSG00000203760 (CENPW);
ENSG00000276886 (GREM1); ENSG00000277586 (NEFL)

Differentially expressed genes in this GO term (IDs and product descriptions):
ENSG00000011426 (anillin actin binding protein); ENSG00000026559 (potassium
channel; voltage gated modifier subfamily G; member 1); ENSG00000051180 (RAD51
recombinase); ENSG00000051341 (polymerase (DNA directed); theta);
ENSG00000051523 (cytochrome b-245; alpha polypeptide); ENSG00000058804 (NDC1
transmembrane nucleoporin); ENSG00000073111 (minichromosome maintenance complex
component 2); ENSG00000093009 (cell division cycle 45); ENSG00000096433
(inositol 1;4;5-trisphosphate receptor; type 3); ENSG00000100162 (centromere
protein M); ENSG00000102384 (centromere protein I); ENSG00000102387 (TATA-box
binding protein associated factor 7 like); ENSG00000102879 (coronin; actin
binding protein; 1A); ENSG00000103490 (PYD and CARD domain containing);
ENSG00000104147 (Opa interacting protein 5); ENSG00000105011 (anti-silencing
function 1B histone chaperone); ENSG00000107957 (SH3 and PX domains 2A);
ENSG00000108106 (ubiquitin conjugating enzyme E2S); ENSG00000108342 (colony
stimulating factor 3); ENSG00000110031 (leupaxin); ENSG00000112029 (F-box
protein 5); ENSG00000115163 (centromere protein A); ENSG00000116741 (regulator
of G-protein signaling 2); ENSG00000117724 (centromere protein F);
ENSG00000118193 (kinesin family member 14); ENSG00000123219 (centromere protein
K); ENSG00000123485 (Holliday junction recognition protein); ENSG00000130755
(glia maturation factor; gamma); ENSG00000134057 (cyclin B1); ENSG00000134222
(proline/serine-rich coiled-coil 1); ENSG00000135547 (hes-related family bHLH
transcription factor with YRPW motif 2); ENSG00000136167 (lymphocyte cytosolic
protein 1 (L-plastin)); ENSG00000137309 (high mobility group AT-hook 1);
ENSG00000137812 (cancer susceptibility candidate 5); ENSG00000138092 (centromere
protein O); ENSG00000138778 (centromere protein E); ENSG00000140534 (TOPBP1-
interacting checkpoint and replication regulator); ENSG00000144118 (v-ral simian
leukemia viral oncogene homolog B); ENSG00000149781 (fermitin family member 3);
ENSG00000149798 (CDC42 effector protein (Rho GTPase binding) 2);
ENSG00000149948 (high mobility group AT-hook 2); ENSG00000151725 (centromere
protein U); ENSG00000153044 (centromere protein H); ENSG00000159055 (MIS18
kinetochore protein A); ENSG00000161681 (SH3 and multiple ankyrin repeat domains
1); ENSG00000163171 (CDC42 effector protein (Rho GTPase binding) 3);
ENSG00000164532 (T-box 20); ENSG00000167670 (chromatin assembly factor 1 subunit
A); ENSG00000167900 (thymidine kinase 1; soluble); ENSG00000168404 (mixed
lineage kinase domain-like); ENSG00000170312 (cyclin-dependent kinase 1);
ENSG00000171522 (prostaglandin E receptor 4); ENSG00000171848 (ribonucleotide
reductase M2); ENSG00000175063 (ubiquitin conjugating enzyme E2C);
ENSG00000175592 (FOS-like antigen 1); ENSG00000176974 (serine
hydroxymethyltransferase 1 (soluble)); ENSG00000181885 (claudin 7);
ENSG00000187741 (Fanconi anemia complementation group A); ENSG00000187840
(eukaryotic translation initiation factor 4E binding protein 1); ENSG00000188486
(H2A histone family member X); ENSG00000196611 (matrix metalloproteinase 1);
ENSG00000197299 (Bloom syndrome; RecQ helicase-like); ENSG00000203760
(centromere protein W); ENSG00000276886 (gremlin 1; DAN family BMP antagonist);
ENSG00000277586 (neurofilament; light polypeptide)

BP GO:0040011 locomotion
Annotate: 1438
Significant: 92
Expected: 50.78
topGO p-value: 0.0038

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000001617 (SEMA3F); ENSG00000006468 (ETV1); ENSG00000010438 (PRSS3);
ENSG00000011422 (PLAUR); ENSG00000011426 (ANLN); ENSG00000026508 (CD44);
ENSG00000035499 (DEPDC1B); ENSG00000054282 (SDCCAG8); ENSG00000058085 (LAMC2);
ENSG00000060656 (PTPRU); ENSG00000063660 (GPC1); ENSG00000066279 (ASPM);
ENSG00000066735 (KIF26A); ENSG00000075218 (GTSE1); ENSG00000081189 (MEF2C);
ENSG00000088053 (GP6); ENSG00000090776 (EFNB1); ENSG00000091879 (ANGPT2);
ENSG00000095203 (EPB41L4B); ENSG00000099937 (SERPIND1); ENSG00000101000 (PROCR);
ENSG00000101096 (NFATC2); ENSG00000101384 (JAG1); ENSG00000101447 (FAM83D);
ENSG00000102007 (PLP2); ENSG00000102879 (CORO1A); ENSG00000103257 (SLC7A5);
ENSG00000103490 (PYCARD); ENSG00000104368 (PLAT); ENSG00000105851 (PIK3CG);
ENSG00000106852 (LHX6); ENSG00000108798 (ABI3); ENSG00000112139 (MDGA1);
ENSG00000113578 (FGF1); ENSG00000115290 (GRB14); ENSG00000115461 (IGFBP5);
ENSG00000115884 (SDC1); ENSG00000117525 (F3); ENSG00000118193 (KIF14);
ENSG00000119630 (PGF); ENSG00000121797 (CCRL2); ENSG00000121966 (CXCR4);
ENSG00000123358 (NR4A1); ENSG00000125848 (FLRT3); ENSG00000125968 (ID1);
ENSG00000128340 (RAC2); ENSG00000128578 (STRIP2); ENSG00000128917 (DLL4);
ENSG00000130300 (PLVAP); ENSG00000130702 (LAMA5); ENSG00000133121 (STARD13);
ENSG00000134215 (VAV3); ENSG00000134242 (PTPN22); ENSG00000134954 (ETS1);
ENSG00000135333 (EPHA7); ENSG00000136167 (LCP1); ENSG00000136999 (NOV);
ENSG00000138182 (KIF20B); ENSG00000149781 (FERMT3); ENSG00000151388 (ADAMTS12);
ENSG00000151615 (POU4F2); ENSG00000154639 (CXADR); ENSG00000159167 (STC1);
ENSG00000160888 (IER2); ENSG00000162407 (PLPP3); ENSG00000163739 (CXCL1);
ENSG00000164171 (ITGA2); ENSG00000164532 (TBX20); ENSG00000164867 (NOS3);
ENSG00000169429 (CXCL8); ENSG00000169744 (LDB2); ENSG00000170312 (CDK1);
ENSG00000171522 (PTGER4); ENSG00000171587 (DSCAM); ENSG00000173334 (TRIB1);
ENSG00000173599 (PC); ENSG00000175592 (FOSL1); ENSG00000175832 (ETV4);
ENSG00000176170 (SPHK1); ENSG00000178726 (THBD); ENSG00000181885 (CLDN7);
ENSG00000196104 (SPOCK3); ENSG00000196468 (FGF16); ENSG00000196611 (MMP1);
ENSG00000196754 (S100A2); ENSG00000259207 (ITGB3); ENSG00000261594 (TPBGL);
ENSG00000276409 (CCL14); ENSG00000276886 (GREM1); ENSG00000277236 (CCL14);
ENSG00000277439 (GP6); ENSG00000277586 (NEFL)

Differentially expressed genes in this GO term (IDs and product descriptions):

ENSG00000001617 (sema domain; immunoglobulin domain (Ig); short basic domain;
secreted; (semaphorin) 3F); ENSG00000006468 (ets variant 1); ENSG00000010438
(protease; serine 3); ENSG00000011422 (plasminogen activator; urokinase
receptor); ENSG00000011426 (anillin actin binding protein); ENSG00000026508
(CD44 molecule (Indian blood group)); ENSG00000035499 (DEP domain containing
1B); ENSG00000054282 (serologically defined colon cancer antigen 8);
ENSG00000058085 (laminin subunit gamma 2); ENSG00000060656 (protein tyrosine
phosphatase; receptor type; U); ENSG00000063660 (glypican 1); ENSG00000066279
(abnormal spindle microtubule assembly); ENSG00000066735 (kinesin family member
26A); ENSG00000075218 (G2 and S-phase expressed 1); ENSG00000081189 (myocyte
enhancer factor 2C); ENSG00000088053 (glycoprotein VI (platelet));
ENSG00000090776 (ephrin-B1); ENSG00000091879 (angiopoietin 2); ENSG00000095203
(erythrocyte membrane protein band 4.1 like 4B); ENSG00000099937 (serpin
peptidase inhibitor; clade D (heparin cofactor); member 1); ENSG00000101000
(protein C receptor); ENSG00000101096 (nuclear factor of activated T-cells;
cytoplasmic; calcineurin-dependent 2); ENSG00000101384 (jagged 1);
ENSG00000101447 (family with sequence similarity 83 member D); ENSG00000102007
(proteolipid protein 2 (colonic epithelium-enriched)); ENSG00000102879
(coronin; actin binding protein; 1A); ENSG00000103257 (solute carrier family 7
(amino acid transporter light chain; L system); member 5); ENSG00000103490 (PYD
and CARD domain containing); ENSG00000104368 (plasminogen activator; tissue);
ENSG00000105851 (phosphatidylinositol-4;5-bisphosphate 3-kinase catalytic
subunit gamma); ENSG00000106852 (LIM homeobox 6); ENSG00000108798 (ABI family
member 3); ENSG00000112139 (MAM domain containing glycosylphosphatidylinositol

anchor 1); ENSG00000113578 (fibroblast growth factor 1 (acidic));
ENSG00000115290 (growth factor receptor bound protein 14); ENSG00000115461
(insulin like growth factor binding protein 5); ENSG00000115884 (syndecan 1);
ENSG00000117525 (coagulation factor III (thromboplastin; tissue factor));
ENSG00000118193 (kinesin family member 14); ENSG00000119630 (placental growth
factor); ENSG00000121797 (chemokine (C-C motif) receptor-like 2);
ENSG00000121966 (chemokine (C-X-C motif) receptor 4); ENSG00000123358 (nuclear
receptor subfamily 4 group A member 1); ENSG00000125848 (fibronectin leucine
rich transmembrane protein 3); ENSG00000125968 (inhibitor of DNA binding 1;
dominant negative helix-loop-helix protein); ENSG00000128340 (ras-related C3
botulinum toxin substrate 2 (rho family; small GTP binding protein Rac2));
ENSG00000128578 (striatin interacting protein 2); ENSG00000128917 (delta-like 4
(Drosophila)); ENSG00000130300 (plasmalemma vesicle associated protein);
ENSG00000130702 (laminin subunit alpha 5); ENSG00000133121 (StAR related lipid
transfer domain containing 13); ENSG00000134215 (vav guanine nucleotide exchange
factor 3); ENSG00000134242 (protein tyrosine phosphatase; non-receptor type 22
(lymphoid)); ENSG00000134954 (v-ets avian erythroblastosis virus E26 oncogene
homolog 1); ENSG00000135333 (EPH receptor A7); ENSG00000136167 (lymphocyte
cytosolic protein 1 (L-plastin)); ENSG00000136999 (nephroblastoma
overexpressed); ENSG00000138182 (kinesin family member 20B); ENSG00000149781
(fermitin family member 3); ENSG00000151388 (ADAM metalloproteinase with
thrombospondin type 1 motif 12); ENSG00000151615 (POU class 4 homeobox 2);
ENSG00000154639 (coxsackie virus and adenovirus receptor); ENSG00000159167
(stanniocalcin 1); ENSG00000160888 (immediate early response 2); ENSG00000162407
(phospholipid phosphatase 3); ENSG00000163739 (chemokine (C-X-C motif) ligand 1
(melanoma growth stimulating activity; alpha)); ENSG00000164171 (integrin
subunit alpha 2); ENSG00000164532 (T-box 20); ENSG00000164867 (nitric oxide
synthase 3); ENSG00000169429 (chemokine (C-X-C motif) ligand 8);
ENSG00000169744 (LIM domain binding 2); ENSG00000170312 (cyclin-dependent kinase
1); ENSG00000171522 (prostaglandin E receptor 4); ENSG00000171587 (Down syndrome
cell adhesion molecule); ENSG00000173334 (tribbles pseudokinase 1);
ENSG00000173599 (pyruvate carboxylase); ENSG00000175592 (FOS-like antigen 1);
ENSG00000175832 (ets variant 4); ENSG00000176170 (sphingosine kinase 1);
ENSG00000178726 (thrombomodulin); ENSG00000181885 (claudin 7); ENSG00000196104
(sparc/osteonectin; cwcv and kazal-like domains proteoglycan (testican) 3);
ENSG00000196468 (fibroblast growth factor 16); ENSG00000196611 (matrix
metalloproteinase 1); ENSG00000196754 (S100 calcium binding protein A2);
ENSG00000259207 (integrin subunit beta 3); ENSG00000261594 (trophoblast
glycoprotein-like); ENSG00000276409 (chemokine (C-C motif) ligand 14);
ENSG00000276886 (gremlin 1; DAN family BMP antagonist); ENSG00000277236
(chemokine (C-C motif) ligand 14); ENSG00000277439 (glycoprotein VI
(platelet)); ENSG00000277586 (neurofilament; light polypeptide)

BP GO:0030198 extracellular matrix organization

Annotate: 328

Significant: 21

Expected: 11.58

topGO p-value: 0.0065

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000026508 (CD44); ENSG00000038295 (TLL1); ENSG00000041982 (TNC);
ENSG00000058085 (LAMC2); ENSG00000103196 (CRISPLD2); ENSG00000125878 (TCF15);
ENSG00000130702 (LAMA5); ENSG00000134954 (ETS1); ENSG00000136167 (LCP1);
ENSG00000147408 (CSGALNACT1); ENSG00000154736 (ADAMTS5); ENSG00000158859
(ADAMTS4); ENSG00000162909 (CAPN2); ENSG00000164171 (ITGA2); ENSG00000173083
(HPSE); ENSG00000196611 (MMP1); ENSG00000196878 (LAMB3); ENSG00000197467
(COL13A1); ENSG00000197565 (COL4A6); ENSG00000259207 (ITGB3); ENSG00000276886
(GREM1)

Differentially expressed genes in this GO term (IDs and product descriptions):
ENSG00000026508 (CD44 molecule (Indian blood group)); ENSG00000038295 (tolloid like 1); ENSG00000041982 (tenascin C); ENSG00000058085 (laminin subunit gamma 2); ENSG00000103196 (cysteine-rich secretory protein LCCL domain containing 2); ENSG00000125878 (transcription factor 15 (basic helix-loop-helix)); ENSG00000130702 (laminin subunit alpha 5); ENSG00000134954 (v-ets avian erythroblastosis virus E26 oncogene homolog 1); ENSG00000136167 (lymphocyte cytosolic protein 1 (L-plastin)); ENSG00000147408 (chondroitin sulfate N-acetylgalactosaminyltransferase 1); ENSG00000154736 (ADAM metalloproteinase with thrombospondin type 1 motif 5); ENSG00000158859 (ADAM metalloproteinase with thrombospondin type 1 motif 4); ENSG00000162909 (calpain 2; (m/II) large subunit); ENSG00000164171 (integrin subunit alpha 2); ENSG00000173083 (heparanase); ENSG00000196611 (matrix metalloproteinase 1); ENSG00000196878 (laminin subunit beta 3); ENSG00000197467 (collagen; type XIII; alpha 1); ENSG00000197565 (collagen; type IV; alpha 6); ENSG00000259207 (integrin subunit beta 3); ENSG00000276886 (gremlin 1; DAN family BMP antagonist)

BP GO:0021700 developmental maturation

Annotate: 224

Significant: 15

Expected: 7.91

topGO p-value: 0.0135

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000012223 (LTF); ENSG00000069482 (GAL); ENSG00000071539 (TRIP13); ENSG00000087586 (AURKA); ENSG00000100095 (SEZ6L); ENSG00000106852 (LHX6); ENSG00000112029 (FBXO5); ENSG00000117399 (CDC20); ENSG00000118193 (KIF14); ENSG00000123892 (RAB38); ENSG00000127528 (KLF2); ENSG00000134057 (CCNB1); ENSG00000161681 (SHANK1); ENSG00000176890 (TYMS); ENSG00000276886 (GREM1)

Differentially expressed genes in this GO term (IDs and product descriptions):

ENSG00000012223 (lactotransferrin); ENSG00000069482 (galanin/GMAP prepropeptide); ENSG00000071539 (thyroid hormone receptor interactor 13); ENSG00000087586 (aurora kinase A); ENSG00000100095 (seizure related 6 homolog (mouse)-like); ENSG00000106852 (LIM homeobox 6); ENSG00000112029 (F-box protein 5); ENSG00000117399 (cell division cycle 20); ENSG00000118193 (kinesin family member 14); ENSG00000123892 (RAB38; member RAS oncogene family); ENSG00000127528 (Kruppel-like factor 2); ENSG00000134057 (cyclin B1); ENSG00000161681 (SH3 and multiple ankyrin repeat domains 1); ENSG00000176890 (thymidylate synthetase); ENSG00000276886 (gremlin 1; DAN family BMP antagonist)

BP GO:0040007 growth

Annotate: 911

Significant: 45

Expected: 32.17

topGO p-value: 0.0142

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000001617 (SEMA3F); ENSG00000041982 (TNC); ENSG00000051523 (CYBA); ENSG00000066279 (ASPM); ENSG00000066735 (KIF26A); ENSG00000069482 (GAL); ENSG00000081189 (MEF2C); ENSG00000087586 (AURKA); ENSG00000101003 (GINS1); ENSG00000113578 (FGF1); ENSG00000115461 (IGFBP5); ENSG00000118193 (KIF14); ENSG00000123080 (CDKN2C); ENSG00000123473 (STIL); ENSG00000124785 (NRN1); ENSG00000125848 (FLRT3); ENSG00000127528 (KLF2); ENSG00000134057 (CCNB1); ENSG00000134222 (PSRC1); ENSG00000135333 (EPHA7); ENSG00000135547 (HEY2); ENSG00000136630 (HLX); ENSG00000136999 (NOV); ENSG00000139318 (DUSP6); ENSG00000146918 (NCAPG2); ENSG00000147536 (GINS4); ENSG00000149256 (TENM4);

ENSG00000149948 (HMGA2); ENSG00000151615 (POU4F2); ENSG00000157456 (CCNB2);
ENSG00000159167 (STC1); ENSG00000164087 (POC1A); ENSG00000164532 (TBX20);
ENSG00000167779 (IGFBP6); ENSG00000168685 (IL7R); ENSG00000169715 (MT1E);
ENSG00000170312 (CDK1); ENSG00000171476 (HOPX); ENSG00000171587 (DSCAM);
ENSG00000176170 (SPHK1); ENSG00000176890 (TYMS); ENSG00000184557 (SOCS3);
ENSG00000185338 (SOCS1); ENSG00000259207 (ITGB3); ENSG00000261594 (TPBGL)

Differentially expressed genes in this GO term (IDs and product descriptions):
ENSG00000001617 (sema domain; immunoglobulin domain (Ig); short basic domain;
secreted; (semaphorin) 3F); ENSG00000041982 (tenascin C); ENSG00000051523
(cytochrome b-245; alpha polypeptide); ENSG00000066279 (abnormal spindle
microtubule assembly); ENSG00000066735 (kinesin family member 26A);
ENSG00000069482 (galanin/GMAP prepropeptide); ENSG00000081189 (myocyte enhancer
factor 2C); ENSG00000087586 (aurora kinase A); ENSG00000101003 (GINS complex
subunit 1 (Psf1 homolog)); ENSG00000113578 (fibroblast growth factor 1
(acidic)); ENSG00000115461 (insulin like growth factor binding protein 5);
ENSG00000118193 (kinesin family member 14); ENSG00000123080 (cyclin-dependent
kinase inhibitor 2C (p18; inhibits CDK4)); ENSG00000123473 (SCL/TAL1
interrupting locus); ENSG00000124785 (neuritin 1); ENSG00000125848 (fibronectin
leucine rich transmembrane protein 3); ENSG00000127528 (Kruppel-like factor 2);
ENSG00000134057 (cyclin B1); ENSG00000134222 (proline/serine-rich coiled-coil
1); ENSG00000135333 (EPH receptor A7); ENSG00000135547 (hes-related family bHLH
transcription factor with YRPW motif 2); ENSG00000136630 (H2.0-like homeobox);
ENSG00000136999 (nephroblastoma overexpressed); ENSG00000139318 (dual
specificity phosphatase 6); ENSG00000146918 (non-SMC condensin II complex
subunit G2); ENSG00000147536 (GINS complex subunit 4 (Sld5 homolog));
ENSG00000149256 (teneurin transmembrane protein 4); ENSG00000149948 (high
mobility group AT-hook 2); ENSG00000151615 (POU class 4 homeobox 2);
ENSG00000157456 (cyclin B2); ENSG00000159167 (stanniocalcin 1); ENSG00000164087
(POC1 centriolar protein A); ENSG00000164532 (T-box 20); ENSG00000167779
(insulin like growth factor binding protein 6); ENSG00000168685 (interleukin 7
receptor); ENSG00000169715 (metallothionein 1E); ENSG00000170312 (cyclin-
dependent kinase 1); ENSG00000171476 (HOP homeobox); ENSG00000171587 (Down
syndrome cell adhesion molecule); ENSG00000176170 (sphingosine kinase 1);
ENSG00000176890 (thymidylate synthetase); ENSG00000184557 (suppressor of
cytokine signaling 3); ENSG00000185338 (suppressor of cytokine signaling 1);
ENSG00000259207 (integrin subunit beta 3); ENSG00000261594 (trophoblast
glycoprotein-like)

BP GO:0002376 immune system process

Annotate: 2257

Significant: 97

Expected: 79.69

topGO p-value: 0.0211

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000011426 (ANLN); ENSG00000012223 (LTF); ENSG00000026508 (CD44);
ENSG00000051341 (POLQ); ENSG00000051523 (CYBA); ENSG00000054219 (LY75);
ENSG00000057657 (PRDM1); ENSG00000065618 (COL17A1); ENSG00000066735 (KIF26A);
ENSG00000069482 (GAL); ENSG00000079616 (KIF22); ENSG00000081189 (MEF2C);
ENSG00000088053 (GP6); ENSG00000090776 (EFNB1); ENSG00000090889 (KIF4A);
ENSG00000091879 (ANGPT2); ENSG00000095752 (IL11); ENSG00000101000 (PROCR);
ENSG00000101096 (NFATC2); ENSG00000101265 (RASSF2); ENSG00000101384 (JAG1);
ENSG00000102879 (CORO1A); ENSG00000103257 (SLC7A5); ENSG00000103490 (PYCARD);
ENSG00000103855 (CD276); ENSG00000104419 (NDRG1); ENSG00000104783 (KCNN4);
ENSG00000105851 (PIK3CG); ENSG00000107957 (SH3PXD2A); ENSG00000108342 (CSF3);
ENSG00000110031 (LPXN); ENSG00000111252 (SH2B3); ENSG00000114738 (MAPKAPK3);
ENSG00000115290 (GRB14); ENSG00000115602 (IL1RL1); ENSG00000116701 (NCF2);

ENSG00000119630 (PGF); ENSG00000120068 (HOXB8); ENSG00000120738 (EGR1);
ENSG00000121621 (KIF18A); ENSG00000121966 (CXCR4); ENSG00000127528 (KLF2);
ENSG00000128340 (RAC2); ENSG00000128917 (DLL4); ENSG00000130300 (PLVAP);
ENSG00000131747 (TOP2A); ENSG00000134215 (VAV3); ENSG00000134242 (PTPN22);
ENSG00000134470 (IL15RA); ENSG00000134954 (ETS1); ENSG00000136167 (LCP1);
ENSG00000136630 (HLX); ENSG00000136999 (NOV); ENSG00000137807 (KIF23);
ENSG00000138160 (KIF11); ENSG00000138778 (CENPE); ENSG00000142945 (KIF2C);
ENSG00000144554 (FANCD2); ENSG00000154639 (CXADR); ENSG00000157456 (CCNB2);
ENSG00000160796 (NBEAL2); ENSG00000161800 (RACGAP1); ENSG00000162746 (FCRLB);
ENSG00000163739 (CXCL1); ENSG00000163808 (KIF15); ENSG00000164171 (ITGA2);
ENSG00000164509 (IL31RA); ENSG00000164949 (GEM); ENSG00000165304 (MELK);
ENSG00000168685 (IL7R); ENSG00000169429 (CXCL8); ENSG00000170345 (FOS);
ENSG00000170425 (ADORA2B); ENSG00000171320 (ESCO2); ENSG00000171522 (PTGER4);
ENSG00000172183 (ISG20); ENSG00000173334 (TRIB1); ENSG00000174371 (EXO1);
ENSG00000178726 (THBD); ENSG00000179750 (APOBEC3B); ENSG00000181634 (TNFSF15);
ENSG00000184557 (SOCS3); ENSG00000185338 (SOCS1); ENSG00000187741 (FANCA);
ENSG00000188229 (TUBB4B); ENSG00000196352 (CD55); ENSG00000196611 (MMP1);
ENSG00000198805 (PNP); ENSG00000204301 (NOTCH4); ENSG00000243414 (TICAM2);
ENSG00000244509 (APOBEC3C); ENSG00000259207 (ITGB3); ENSG00000276409 (CCL14);
ENSG00000276886 (GREM1); ENSG00000277236 (CCL14); ENSG00000277439 (GP6);
ENSG00000280610 (KIF15)

Differentially expressed genes in this GO term (IDs and product descriptions):
ENSG00000011426 (anillin actin binding protein); ENSG00000012223
(lactotransferrin); ENSG00000026508 (CD44 molecule (Indian blood group));
ENSG00000051341 (polymerase (DNA directed); theta); ENSG00000051523 (cytochrome
b-245; alpha polypeptide); ENSG00000054219 (lymphocyte antigen 75);
ENSG00000057657 (PR domain containing 1; with ZNF domain); ENSG00000065618
(collagen; type XVII; alpha 1); ENSG00000066735 (kinesin family member 26A);
ENSG00000069482 (galanin/GMAP prepropeptide); ENSG00000079616 (kinesin family
member 22); ENSG00000081189 (myocyte enhancer factor 2C); ENSG00000088053
(glycoprotein VI (platelet)); ENSG00000090776 (ephrin-B1); ENSG00000090889
(kinesin family member 4A); ENSG00000091879 (angiopoietin 2); ENSG00000095752
(interleukin 11); ENSG00000101000 (protein C receptor); ENSG00000101096 (nuclear
factor of activated T-cells; cytoplasmic; calcineurin-dependent 2);
ENSG00000101265 (Ras association (RalGDS/AF-6) domain family member 2);
ENSG00000101384 (jagged 1); ENSG00000102879 (coronin; actin binding protein;
1A); ENSG00000103257 (solute carrier family 7 (amino acid transporter light
chain; L system); member 5); ENSG00000103490 (PYD and CARD domain containing);
ENSG00000103855 (CD276 molecule); ENSG00000104419 (N-myc downstream regulated
1); ENSG00000104783 (potassium channel; calcium activated intermediate/small
conductance subfamily N alpha; member 4); ENSG00000105851 (phosphatidylinositol-
4;5-bisphosphate 3-kinase catalytic subunit gamma); ENSG00000107957 (SH3 and PX
domains 2A); ENSG00000108342 (colony stimulating factor 3); ENSG00000110031
(leupaxin); ENSG00000111252 (SH2B adaptor protein 3); ENSG00000114738 (mitogen-
activated protein kinase-activated protein kinase 3); ENSG00000115290 (growth
factor receptor bound protein 14); ENSG00000115602 (interleukin 1 receptor-like
1); ENSG00000116701 (neutrophil cytosolic factor 2); ENSG00000119630 (placental
growth factor); ENSG00000120068 (homeobox B8); ENSG00000120738 (early growth
response 1); ENSG00000121621 (kinesin family member 18A); ENSG00000121966
(chemokine (C-X-C motif) receptor 4); ENSG00000127528 (Kruppel-like factor 2);
ENSG00000128340 (ras-related C3 botulinum toxin substrate 2 (rho family; small
GTP binding protein Rac2)); ENSG00000128917 (delta-like 4 (Drosophila));
ENSG00000130300 (plasmalemma vesicle associated protein); ENSG00000131747
(topoisomerase (DNA) II alpha); ENSG00000134215 (vav guanine nucleotide
exchange factor 3); ENSG00000134242 (protein tyrosine phosphatase; non-receptor
type 22 (lymphoid)); ENSG00000134470 (interleukin 15 receptor subunit alpha);
ENSG00000134954 (v-ets avian erythroblastosis virus E26 oncogene homolog 1);

ENSG00000136167 (lymphocyte cytosolic protein 1 (L-plastin)); ENSG00000136630 (H2.0-like homeobox); ENSG00000136999 (nephroblastoma overexpressed); ENSG00000137807 (kinesin family member 23); ENSG00000138160 (kinesin family member 11); ENSG00000138778 (centromere protein E); ENSG00000142945 (kinesin family member 2C); ENSG00000144554 (Fanconi anemia complementation group D2); ENSG00000154639 (coxsackie virus and adenovirus receptor); ENSG00000157456 (cyclin B2); ENSG00000160796 (neurobeachin like 2); ENSG00000161800 (Rac GTPase activating protein 1); ENSG00000162746 (Fc receptor-like B); ENSG00000163739 (chemokine (C-X-C motif) ligand 1 (melanoma growth stimulating activity; alpha)); ENSG00000163808 (kinesin family member 15); ENSG00000164171 (integrin subunit alpha 2); ENSG00000164509 (interleukin 31 receptor A); ENSG00000164949 (GTP binding protein overexpressed in skeletal muscle); ENSG00000165304 (maternal embryonic leucine zipper kinase); ENSG00000168685 (interleukin 7 receptor); ENSG00000169429 (chemokine (C-X-C motif) ligand 8); ENSG00000170345 (FBJ murine osteosarcoma viral oncogene homolog); ENSG00000170425 (adenosine A2b receptor); ENSG00000171320 (establishment of sister chromatid cohesion N-acetyltransferase 2); ENSG00000171522 (prostaglandin E receptor 4); ENSG00000172183 (interferon stimulated exonuclease gene 20kDa); ENSG00000173334 (tribbles pseudokinase 1); ENSG00000174371 (exonuclease 1); ENSG00000178726 (thrombomodulin); ENSG00000179750 (apolipoprotein B mRNA editing enzyme; catalytic polypeptide-like 3B); ENSG00000181634 (tumor necrosis factor superfamily member 15); ENSG00000184557 (suppressor of cytokine signaling 3); ENSG00000185338 (suppressor of cytokine signaling 1); ENSG00000187741 (Fanconi anemia complementation group A); ENSG00000188229 (tubulin beta 4B class IVb); ENSG00000196352 (CD55 molecule; decay accelerating factor for complement (Cromer blood group)); ENSG00000196611 (matrix metalloproteinase 1); ENSG00000198805 (purine nucleoside phosphorylase); ENSG00000204301 (notch 4); ENSG00000243414 (toll-like receptor adaptor molecule 2); ENSG00000244509 (apolipoprotein B mRNA editing enzyme; catalytic polypeptide-like 3C); ENSG00000259207 (integrin subunit beta 3); ENSG00000276409 (chemokine (C-C motif) ligand 14); ENSG00000276886 (gremlin 1; DAN family BMP antagonist); ENSG00000277236 (chemokine (C-C motif) ligand 14); ENSG00000277439 (glycoprotein VI (platelet)); ENSG00000280610 (kinesin family member 15)

BP GO:0008219 cell death

Annotate: 1859

Significant: 79

Expected: 65.64

topGO p-value: 0.0452

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000007968 (E2F2); ENSG00000011422 (PLAUR); ENSG00000012048 (BRCA1); ENSG00000012223 (LTF); ENSG00000026508 (CD44); ENSG00000066248 (NGEF); ENSG00000069482 (GAL); ENSG00000071054 (MAP4K4); ENSG00000081189 (MEF2C); ENSG00000087586 (AURKA); ENSG00000088325 (TPX2); ENSG00000089685 (BIRC5); ENSG00000092853 (CLSPN); ENSG00000095752 (IL11); ENSG00000101057 (MYBL2); ENSG00000101188 (NTSR1); ENSG00000101255 (TRIB3); ENSG00000101265 (RASSF2); ENSG00000101412 (E2F1); ENSG00000101955 (SRPX); ENSG00000102879 (CORO1A); ENSG00000103490 (PYCARD); ENSG00000104419 (NDRG1); ENSG00000105483 (CARD8); ENSG00000105851 (PIK3CG); ENSG00000108342 (CSF3); ENSG00000110063 (DCPS); ENSG00000112977 (DAP); ENSG00000115107 (STEAP3); ENSG00000116133 (DHCR24); ENSG00000116679 (IVNS1ABP); ENSG00000117525 (F3); ENSG00000118193 (KIF14); ENSG00000120129 (DUSP1); ENSG00000120738 (EGR1); ENSG00000121966 (CXCR4); ENSG00000123358 (NR4A1); ENSG00000123473 (STIL); ENSG00000123689 (GOS2); ENSG00000125968 (ID1); ENSG00000130222 (GADD45G); ENSG00000131747 (TOP2A); ENSG00000134215 (VAV3); ENSG00000134333 (LDHA); ENSG00000135111 (TBX3); ENSG00000135333 (EPHA7); ENSG00000135476 (ESPL1); ENSG00000135547 (HEY2); ENSG00000136999 (NOV); ENSG00000139318 (DUSP6); ENSG00000140379 (BCL2A1);

ENSG00000144118 (RALB); ENSG00000144354 (CDCA7); ENSG00000149948 (HMGA2);
ENSG00000153179 (RASSF3); ENSG00000156113 (KCNMA1); ENSG00000156970 (BUB1B);
ENSG00000159399 (HK2); ENSG00000164109 (MAD2L1); ENSG00000164509 (IL31RA);
ENSG00000164867 (NOS3); ENSG00000165304 (MELK); ENSG00000166851 (PLK1);
ENSG00000168404 (MLKL); ENSG00000169679 (BUB1); ENSG00000170312 (CDK1);
ENSG00000175592 (FOSL1); ENSG00000176170 (SPHK1); ENSG00000178999 (AURKB);
ENSG00000181634 (TNFSF15); ENSG00000181885 (CLDN7); ENSG00000183763 (TRAIP);
ENSG00000184557 (SOCS3); ENSG00000197632 (SERPINB2); ENSG00000233608 (TWIST2);
ENSG00000243414 (TICAM2); ENSG00000274538 (PHLDA2); ENSG00000276886 (GREM1);
ENSG00000277586 (NEFL)

Differentially expressed genes in this GO term (IDs and product descriptions):
ENSG00000007968 (E2F transcription factor 2); ENSG00000011422 (plasminogen
activator; urokinase receptor); ENSG00000012048 (breast cancer 1);
ENSG00000012223 (lactotransferrin); ENSG00000026508 (CD44 molecule (Indian
blood group)); ENSG00000066248 (neuronal guanine nucleotide exchange factor);
ENSG00000069482 (galanin/GMAP prepropeptide); ENSG00000071054 (mitogen-activated
protein kinase kinase kinase kinase 4); ENSG00000081189 (myocyte enhancer factor
2C); ENSG00000087586 (aurora kinase A); ENSG00000088325 (TPX2; microtubule-
associated); ENSG00000089685 (baculoviral IAP repeat containing 5);
ENSG00000092853 (claspin); ENSG00000095752 (interleukin 11); ENSG00000101057 (v-
myb avian myeloblastosis viral oncogene homolog-like 2); ENSG00000101188
(neurotensin receptor 1 (high affinity)); ENSG00000101255 (tribbles
pseudokinase 3); ENSG00000101265 (Ras association (RalGDS/AF-6) domain family
member 2); ENSG00000101412 (E2F transcription factor 1); ENSG00000101955 (sushi-
repeat containing protein; X-linked); ENSG00000102879 (coronin; actin binding
protein; 1A); ENSG00000103490 (PYD and CARD domain containing); ENSG00000104419
(N-myc downstream regulated 1); ENSG00000105483 (caspase recruitment domain
family member 8); ENSG00000105851 (phosphatidylinositol-4;5-bisphosphate 3-
kinase catalytic subunit gamma); ENSG00000108342 (colony stimulating factor 3);
ENSG00000110063 (decapping enzyme; scavenger); ENSG00000112977 (death-associated
protein); ENSG00000115107 (STEAP3 metalloredutase); ENSG00000116133 (24-
dehydrocholesterol reductase); ENSG00000116679 (influenza virus NS1A binding
protein); ENSG00000117525 (coagulation factor III (thromboplastin; tissue
factor)); ENSG00000118193 (kinesin family member 14); ENSG00000120129 (dual
specificity phosphatase 1); ENSG00000120738 (early growth response 1);
ENSG00000121966 (chemokine (C-X-C motif) receptor 4); ENSG00000123358 (nuclear
receptor subfamily 4 group A member 1); ENSG00000123473 (SCL/TAL1 interrupting
locus); ENSG00000123689 (G0/G1 switch 2); ENSG00000125968 (inhibitor of DNA
binding 1; dominant negative helix-loop-helix protein); ENSG00000130222 (growth
arrest and DNA damage inducible gamma); ENSG00000131747 (topoisomerase (DNA) II
alpha); ENSG00000134215 (vav guanine nucleotide exchange factor 3);
ENSG00000134333 (lactate dehydrogenase A); ENSG00000135111 (T-box 3);
ENSG00000135333 (EPH receptor A7); ENSG00000135476 (extra spindle pole bodies
like 1; separase); ENSG00000135547 (hes-related family bHLH transcription factor
with YRPW motif 2); ENSG00000136999 (nephroblastoma overexpressed);
ENSG00000139318 (dual specificity phosphatase 6); ENSG00000140379 (BCL2-related
protein A1); ENSG00000144118 (v-ral simian leukemia viral oncogene homolog B);
ENSG00000144354 (cell division cycle associated 7); ENSG00000149948 (high
mobility group AT-hook 2); ENSG00000153179 (Ras association (RalGDS/AF-6)
domain family member 3); ENSG00000156113 (potassium channel; calcium activated
large conductance subfamily M alpha; member 1); ENSG00000156970 (BUB1B; mitotic
checkpoint serine/threonine kinase); ENSG00000159399 (hexokinase 2);
ENSG00000164109 (MAD2 mitotic arrest deficient-like 1 (yeast)); ENSG00000164509
(interleukin 31 receptor A); ENSG00000164867 (nitric oxide synthase 3);
ENSG00000165304 (maternal embryonic leucine zipper kinase); ENSG00000166851
(polo-like kinase 1); ENSG00000168404 (mixed lineage kinase domain-like);
ENSG00000169679 (BUB1; mitotic checkpoint serine/threonine kinase);

ENSG00000170312 (cyclin-dependent kinase 1); ENSG00000175592 (FOS-like antigen 1); ENSG00000176170 (sphingosine kinase 1); ENSG00000178999 (aurora kinase B); ENSG00000181634 (tumor necrosis factor superfamily member 15); ENSG00000181885 (claudin 7); ENSG00000183763 (TRAF interacting protein); ENSG00000184557 (suppressor of cytokine signaling 3); ENSG00000197632 (serpin peptidase inhibitor; clade B (ovalbumin); member 2); ENSG00000233608 (twist family bHLH transcription factor 2); ENSG00000243414 (toll-like receptor adaptor molecule 2); ENSG00000274538 (pleckstrin homology-like domain; family A; member 2); ENSG00000276886 (gremlin 1; DAN family BMP antagonist); ENSG00000277586 (neurofilament; light polypeptide)

=====

GO term enrichment of down-regulated genes

=====

BP GO:0008283 cell proliferation

Annotate: 1790

Significant: 67

Expected: 43.28

topGO p-value: 0.0002

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000010671 (BTK); ENSG00000017427 (IGF1); ENSG00000049540 (ELN); ENSG00000071242 (RPS6KA2); ENSG00000073282 (TP63); ENSG00000073756 (PTGS2); ENSG00000074590 (NUAK1); ENSG00000078401 (EDN1); ENSG00000085563 (ABCB1); ENSG00000087245 (MMP2); ENSG00000090530 (P3H2); ENSG00000091831 (ESR1); ENSG00000092969 (TGFB2); ENSG00000095303 (PTGS1); ENSG00000100311 (PDGFB); ENSG00000100625 (SIX4); ENSG00000103034 (NDRG4); ENSG00000105639 (JAK3); ENSG00000109906 (ZBTB16); ENSG00000111424 (VDR); ENSG00000112902 (SEMA5A); ENSG00000115414 (FN1); ENSG00000117595 (IRF6); ENSG00000118523 (CTGF); ENSG00000120337 (TNFSF18); ENSG00000120885 (CLU); ENSG00000122641 (INHBA); ENSG00000124145 (SDC4); ENSG00000125378 (BMP4); ENSG00000128602 (SMO); ENSG00000129757 (CDKN1C); ENSG00000130147 (SH3BP4); ENSG00000133026 (MYH10); ENSG00000134058 (CDK7); ENSG00000135312 (HTR1B); ENSG00000135914 (HTR2B); ENSG00000135919 (SERPINE2); ENSG00000137193 (PIM1); ENSG00000137573 (SULF1); ENSG00000137801 (THBS1); ENSG00000138061 (CYP1B1); ENSG00000138448 (ITGAV); ENSG00000140105 (WARS); ENSG00000141655 (TNFRSF11A); ENSG00000142871 (CYR61); ENSG00000144810 (COL8A1); ENSG00000162692 (VCAM1); ENSG00000162772 (ATF3); ENSG00000163453 (IGFBP7); ENSG00000164056 (SPRY1); ENSG00000164161 (HHIP); ENSG00000169083 (AR); ENSG00000170962 (PDGFD); ENSG00000174059 (CD34); ENSG00000176046 (NUPR1); ENSG00000178690 (DYNAP); ENSG00000181104 (F2R); ENSG00000181852 (RNF41); ENSG00000183087 (GAS6); ENSG00000184292 (TACSTD2); ENSG00000184371 (CSF1); ENSG00000184916 (JAG2); ENSG00000185885 (IFITM1); ENSG00000196159 (FAT4); ENSG00000196562 (SULF2); ENSG00000197381 (ADARB1); ENSG00000276644 (DACH1)

Differentially expressed genes in this GO term (IDs and product descriptions):

ENSG00000010671 (Bruton tyrosine kinase); ENSG00000017427 (insulin like growth factor 1); ENSG00000049540 (elastin); ENSG00000071242 (ribosomal protein S6 kinase; 90kDa; polypeptide 2); ENSG00000073282 (tumor protein p63); ENSG00000073756 (prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)); ENSG00000074590 (NUAK family; SNF1-like kinase; 1); ENSG00000078401 (endothelin 1); ENSG00000085563 (ATP binding cassette subfamily B member 1); ENSG00000087245 (matrix metalloproteinase 2);

ENSG00000090530 (prolyl 3-hydroxylase 2); ENSG00000091831 (estrogen receptor 1); ENSG00000092969 (transforming growth factor beta 2); ENSG00000095303 (prostaglandin-endoperoxide synthase 1 (prostaglandin G/H synthase and cyclooxygenase)); ENSG00000100311 (platelet-derived growth factor beta polypeptide); ENSG00000100625 (SIX homeobox 4); ENSG00000103034 (NDRG family member 4); ENSG00000105639 (Janus kinase 3); ENSG00000109906 (zinc finger and BTB domain containing 16); ENSG00000111424 (vitamin D (1;25- dihydroxyvitamin D3) receptor); ENSG00000112902 (sema domain; seven thrombospondin repeats (type 1 and type 1-like); transmembrane domain (TM) and short cytoplasmic domain; (semaphorin) 5A); ENSG00000115414 (fibronectin 1); ENSG00000117595 (interferon regulatory factor 6); ENSG00000118523 (connective tissue growth factor); ENSG00000120337 (tumor necrosis factor superfamily member 18); ENSG00000120885 (clusterin); ENSG00000122641 (inhibin beta A); ENSG00000124145 (syndecan 4); ENSG00000125378 (bone morphogenetic protein 4); ENSG00000128602 (smoothed; frizzled class receptor); ENSG00000129757 (cyclin-dependent kinase inhibitor 1C (p57; Kip2)); ENSG00000130147 (SH3-domain binding protein 4); ENSG00000133026 (myosin; heavy chain 10; non-muscle); ENSG00000134058 (cyclin-dependent kinase 7); ENSG00000135312 (5-hydroxytryptamine (serotonin) receptor 1B; G protein-coupled); ENSG00000135914 (5-hydroxytryptamine (serotonin) receptor 2B; G protein-coupled); ENSG00000135919 (serpin peptidase inhibitor; clade E (nexin; plasminogen activator inhibitor type 1); member 2); ENSG00000137193 (Pim-1 proto-oncogene; serine/threonine kinase); ENSG00000137573 (sulfatase 1); ENSG00000137801 (thrombospondin 1); ENSG00000138061 (cytochrome P450 family 1 subfamily B member 1); ENSG00000138448 (integrin subunit alpha V); ENSG00000140105 (tryptophanyl-tRNA synthetase); ENSG00000141655 (tumor necrosis factor receptor superfamily member 11a); ENSG00000142871 (cysteine-rich; angiogenic inducer; 61); ENSG00000144810 (collagen; type VIII; alpha 1); ENSG00000162692 (vascular cell adhesion molecule 1); ENSG00000162772 (activating transcription factor 3); ENSG00000163453 (insulin like growth factor binding protein 7); ENSG00000164056 (sprouty RTK signaling antagonist 1); ENSG00000164161 (hedgehog interacting protein); ENSG00000169083 (androgen receptor); ENSG00000170962 (platelet derived growth factor D); ENSG00000174059 (CD34 molecule); ENSG00000176046 (nuclear protein 1; transcriptional regulator); ENSG00000178690 (dynactin associated protein); ENSG00000181104 (coagulation factor II (thrombin) receptor); ENSG00000181852 (ring finger protein 41; E3 ubiquitin protein ligase); ENSG00000183087 (growth arrest specific 6); ENSG00000184292 (tumor-associated calcium signal transducer 2); ENSG00000184371 (colony stimulating factor 1 (macrophage)); ENSG00000184916 (jagged 2); ENSG00000185885 (interferon induced transmembrane protein 1); ENSG00000196159 (FAT atypical cadherin 4); ENSG00000196562 (sulfatase 2); ENSG00000197381 (adenosine deaminase; RNA-specific; B1); ENSG00000276644 (dachshund family transcription factor 1)

BP GO:0002376 immune system process

Annotate: 2257

Significant: 79

Expected: 54.57

topGO p-value: 0.0004

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000000971 (CFH); ENSG00000003989 (SLC7A2); ENSG00000007908 (SELE); ENSG00000008517 (IL32); ENSG00000010671 (BTK); ENSG00000017427 (IGF1); ENSG00000023445 (BIRC3); ENSG00000048052 (HDAC9); ENSG00000069424 (KCNAB2); ENSG00000078401 (EDN1); ENSG00000085563 (ABCB1); ENSG00000087245 (MMP2); ENSG00000090339 (ICAM1); ENSG00000091831 (ESR1); ENSG00000092969 (TGFB2); ENSG00000100311 (PDGFB); ENSG00000100342 (APOL1); ENSG00000100625 (SIX4); ENSG00000104856 (RELB); ENSG00000105639 (JAK3); ENSG00000108691 (CCL2); ENSG00000108771 (DHX58); ENSG00000109906 (ZBTB16); ENSG00000113448 (PDE4D);

ENSG00000115232 (ITGA4); ENSG00000115267 (IFIH1); ENSG00000115414 (FN1);
ENSG00000117228 (GBP1); ENSG00000117595 (IRF6); ENSG00000120337 (TNFSF18);
ENSG00000120885 (CLU); ENSG00000121858 (TNFSF10); ENSG00000122641 (INHBA);
ENSG00000124145 (SDC4); ENSG00000125378 (BMP4); ENSG00000126709 (IFI6);
ENSG00000129048 (ACKR4); ENSG00000129757 (CDKN1C); ENSG00000130707 (ASS1);
ENSG00000132530 (XAF1); ENSG00000133710 (SPINK5); ENSG00000137403 (HLA-F);
ENSG00000137801 (THBS1); ENSG00000137959 (IFI44L); ENSG00000138448 (ITGAV);
ENSG00000141655 (TNFRSF11A); ENSG00000152495 (CAMK4); ENSG00000152932 (RAB3C);
ENSG00000153208 (MERTK); ENSG00000157601 (MX1); ENSG00000160323 (ADAMTS13);
ENSG00000162692 (VCAM1); ENSG00000162944 (RFTN2); ENSG00000163347 (CLDN1);
ENSG00000163694 (RBM47); ENSG00000164342 (TLR3); ENSG00000164692 (COL1A2);
ENSG00000166147 (FBN1); ENSG00000166741 (NNMT); ENSG00000167191 (GPCR5B);
ENSG00000168542 (COL3A1); ENSG00000170017 (ALCAM); ENSG00000170458 (CD14);
ENSG00000170962 (PDGFD); ENSG00000174059 (CD34); ENSG00000174600 (CMKLR1);
ENSG00000176907 (C8orf4); ENSG00000179954 (SSC5D); ENSG00000181852 (RNF41);
ENSG00000183049 (CAMK1D); ENSG00000183087 (GAS6); ENSG00000184371 (CSF1);
ENSG00000184916 (JAG2); ENSG00000185745 (IFIT1); ENSG00000185885 (IFITM1);
ENSG00000188313 (PLSCR1); ENSG00000197381 (ADARB1); ENSG00000231925 (TAPBP);
ENSG00000249437 (NAIP)

Differentially expressed genes in this GO term (IDs and product descriptions):
ENSG00000000971 (complement factor H); ENSG00000003989 (solute carrier family 7
(cationic amino acid transporter; y+ system); member 2); ENSG00000007908
(selectin E); ENSG00000008517 (interleukin 32); ENSG00000010671 (Bruton tyrosine
kinase); ENSG00000017427 (insulin like growth factor 1); ENSG00000023445
(baculoviral IAP repeat containing 3); ENSG00000048052 (histone deacetylase 9);
ENSG00000069424 (potassium channel; voltage gated subfamily A regulatory beta
subunit 2); ENSG00000078401 (endothelin 1); ENSG00000085563 (ATP binding
cassette subfamily B member 1); ENSG00000087245 (matrix metalloproteinase 2);
ENSG00000090339 (intercellular adhesion molecule 1); ENSG00000091831 (estrogen
receptor 1); ENSG00000092969 (transforming growth factor beta 2);
ENSG00000100311 (platelet-derived growth factor beta polypeptide);
ENSG00000100342 (apolipoprotein L1); ENSG00000100625 (SIX homeobox 4);
ENSG00000104856 (v-rel avian reticuloendotheliosis viral oncogene homolog B);
ENSG00000105639 (Janus kinase 3); ENSG00000108691 (chemokine (C-C motif) ligand
2); ENSG00000108771 (DEXH (Asp-Glu-X-His) box polypeptide 58); ENSG00000109906
(zinc finger and BTB domain containing 16); ENSG00000113448 (phosphodiesterase
4D); ENSG00000115232 (integrin subunit alpha 4); ENSG00000115267 (interferon
induced; with helicase C domain 1); ENSG00000115414 (fibronectin 1);
ENSG00000117228 (guanylate binding protein 1; interferon-inducible);
ENSG00000117595 (interferon regulatory factor 6); ENSG00000120337 (tumor
necrosis factor superfamily member 18); ENSG00000120885 (clusterin);
ENSG00000121858 (tumor necrosis factor superfamily member 10); ENSG00000122641
(inhibin beta A); ENSG00000124145 (syndecan 4); ENSG00000125378 (bone
morphogenetic protein 4); ENSG00000126709 (interferon; alpha-inducible protein
6); ENSG00000129048 (atypical chemokine receptor 4); ENSG00000129757 (cyclin-
dependent kinase inhibitor 1C (p57; Kip2)); ENSG00000130707 (argininosuccinate
synthase 1); ENSG00000132530 (XIAP associated factor 1); ENSG00000133710 (serine
peptidase inhibitor; Kazal type 5); ENSG00000137403 (major histocompatibility
complex; class I; F); ENSG00000137801 (thrombospondin 1); ENSG00000137959
(interferon induced protein 44 like); ENSG00000138448 (integrin subunit alpha
V); ENSG00000141655 (tumor necrosis factor receptor superfamily member 11a);
ENSG00000152495 (calcium/calmodulin-dependent protein kinase IV);
ENSG00000152932 (RAB3C; member RAS oncogene family); ENSG00000153208 (MER proto-
oncogene; tyrosine kinase); ENSG00000157601 (MX dynamin-like GTPase 1);
ENSG00000160323 (ADAM metalloproteinase with thrombospondin type 1 motif 13);
ENSG00000162692 (vascular cell adhesion molecule 1); ENSG00000162944 (raftlin
family member 2); ENSG00000163347 (claudin 1); ENSG00000163694 (RNA binding

motif protein 47); ENSG00000164342 (toll-like receptor 3); ENSG00000164692 (collagen; type I; alpha 2); ENSG00000166147 (fibrillin 1); ENSG00000166741 (nicotinamide N-methyltransferase); ENSG00000167191 (G protein-coupled receptor; class C; group 5; member B); ENSG00000168542 (collagen; type III; alpha 1); ENSG00000170017 (activated leukocyte cell adhesion molecule); ENSG00000170458 (CD14 molecule); ENSG00000170962 (platelet derived growth factor D); ENSG00000174059 (CD34 molecule); ENSG00000174600 (chemerin chemokine-like receptor 1); ENSG00000176907 (chromosome 8 open reading frame 4); ENSG00000179954 (scavenger receptor cysteine rich family; 5 domains); ENSG00000181852 (ring finger protein 41; E3 ubiquitin protein ligase); ENSG00000183049 (calcium/calmodulin dependent protein kinase ID); ENSG00000183087 (growth arrest specific 6); ENSG00000184371 (colony stimulating factor 1 (macrophage)); ENSG00000184916 (jagged 2); ENSG00000185745 (interferon induced protein with tetratricopeptide repeats 1); ENSG00000185885 (interferon induced transmembrane protein 1); ENSG00000188313 (phospholipid scramblase 1); ENSG00000197381 (adenosine deaminase; RNA-specific; B1); ENSG00000231925 (TAP binding protein (tapasin)); ENSG00000249437 (NLR family; apoptosis inhibitory protein)

BP GO:0000902 cell morphogenesis

Annotate: 1112

Significant: 44

Expected: 26.89

topGO p-value: 0.0008

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000010319 (SEMA3G); ENSG00000049759 (NEDD4L); ENSG00000074527 (NTN4); ENSG00000078018 (MAP2); ENSG00000079691 (LRRC16A); ENSG00000084112 (SSH1); ENSG00000087903 (RFX2); ENSG00000090339 (ICAM1); ENSG00000092969 (TGFB2); ENSG00000099204 (ABLIM1); ENSG00000099864 (PALM); ENSG00000108691 (CCL2); ENSG00000111424 (VDR); ENSG00000112902 (SEMA5A); ENSG00000114841 (DNAH1); ENSG00000115232 (ITGA4); ENSG00000115414 (FN1); ENSG00000117228 (GBP1); ENSG00000120885 (CLU); ENSG00000124772 (CPNE5); ENSG00000132561 (MATN2); ENSG00000133026 (MYH10); ENSG00000137872 (SEMA6D); ENSG00000137877 (SPTBN5); ENSG00000138448 (ITGAV); ENSG00000143434 (SEMA6C); ENSG00000143869 (GDF7); ENSG00000145075 (CCDC39); ENSG00000153208 (MERTK); ENSG00000153993 (SEMA3D); ENSG00000169083 (AR); ENSG00000169242 (EFNA1); ENSG00000169439 (SDC2); ENSG00000170017 (ALCAM); ENSG00000173706 (HEG1); ENSG00000176697 (BDNF); ENSG00000178404 (CEP295NL); ENSG00000184292 (TACSTD2); ENSG00000185070 (FLRT2); ENSG00000188517 (COL25A1); ENSG00000197959 (DNM3); ENSG00000198947 (DMD); ENSG00000214021 (TTLL3); ENSG00000221866 (PLXNA4)

Differentially expressed genes in this GO term (IDs and product descriptions):

ENSG00000010319 (sema domain; immunoglobulin domain (Ig); short basic domain; secreted; (semaphorin) 3G); ENSG00000049759 (neural precursor cell expressed; developmentally down-regulated 4-like; E3 ubiquitin protein ligase); ENSG00000074527 (netrin 4); ENSG00000078018 (microtubule associated protein 2); ENSG00000079691 (leucine rich repeat containing 16A); ENSG00000084112 (slingshot protein phosphatase 1); ENSG00000087903 (regulatory factor X2); ENSG00000090339 (intercellular adhesion molecule 1); ENSG00000092969 (transforming growth factor beta 2); ENSG00000099204 (actin binding LIM protein 1); ENSG00000099864 (paralemmin); ENSG00000108691 (chemokine (C-C motif) ligand 2); ENSG00000111424 (vitamin D (1;25- dihydroxyvitamin D3) receptor); ENSG00000112902 (sema domain; seven thrombospondin repeats (type 1 and type 1-like); transmembrane domain (TM) and short cytoplasmic domain; (semaphorin) 5A); ENSG00000114841 (dynein; axonemal; heavy chain 1); ENSG00000115232 (integrin subunit alpha 4); ENSG00000115414 (fibronectin 1); ENSG00000117228 (guanylate binding protein 1; interferon-inducible); ENSG00000120885 (clusterin); ENSG00000124772 (copine V);

ENSG00000132561 (matrilin 2); ENSG00000133026 (myosin; heavy chain 10; non-muscle); ENSG00000137872 (sema domain; transmembrane domain (TM); and cytoplasmic domain; (semaphorin) 6D); ENSG00000137877 (spectrin; beta; non-erythrocytic 5); ENSG00000138448 (integrin subunit alpha V); ENSG00000143434 (sema domain; transmembrane domain (TM); and cytoplasmic domain; (semaphorin) 6C); ENSG00000143869 (growth differentiation factor 7); ENSG00000145075 (coiled-coil domain containing 39); ENSG00000153208 (MER proto-oncogene; tyrosine kinase); ENSG00000153993 (sema domain; immunoglobulin domain (Ig); short basic domain; secreted; (semaphorin) 3D); ENSG00000169083 (androgen receptor); ENSG00000169242 (ephrin-A1); ENSG00000169439 (syndecan 2); ENSG00000170017 (activated leukocyte cell adhesion molecule); ENSG00000173706 (heart development protein with EGF-like domains 1); ENSG00000176697 (brain-derived neurotrophic factor); ENSG00000178404 (CEP295 N-terminal like); ENSG00000184292 (tumor-associated calcium signal transducer 2); ENSG00000185070 (fibronectin leucine rich transmembrane protein 2); ENSG00000188517 (collagen; type XXV; alpha 1); ENSG00000197959 (dynamin 3); ENSG00000198947 (dystrophin); ENSG00000214021 (tubulin tyrosine ligase like 3); ENSG00000221866 (plexin A4)

BP GO:0007009 plasma membrane organization

Annotate: 271

Significant: 16

Expected: 6.55

topGO p-value: 0.001

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000092969 (TGFB2); ENSG00000095637 (SORBS1); ENSG00000099864 (PALM); ENSG00000114698 (PLSCR4); ENSG00000117228 (GBP1); ENSG00000120885 (CLU); ENSG00000130635 (COL5A1); ENSG00000131477 (RAMP2); ENSG00000133026 (MYH10); ENSG00000137501 (SYTL2); ENSG00000150551 (LYPD1); ENSG00000169083 (AR); ENSG00000183087 (GAS6); ENSG00000185101 (ANO9); ENSG00000188313 (PLSCR1); ENSG00000196159 (FAT4)

Differentially expressed genes in this GO term (IDs and product descriptions):

ENSG00000092969 (transforming growth factor beta 2); ENSG00000095637 (sorbin and SH3 domain containing 1); ENSG00000099864 (paralemmin); ENSG00000114698 (phospholipid scramblase 4); ENSG00000117228 (guanylate binding protein 1; interferon-inducible); ENSG00000120885 (clusterin); ENSG00000130635 (collagen; type V; alpha 1); ENSG00000131477 (receptor (G protein-coupled) activity modifying protein 2); ENSG00000133026 (myosin; heavy chain 10; non-muscle); ENSG00000137501 (synaptotagmin like 2); ENSG00000150551 (LY6/PLAUR domain containing 1); ENSG00000169083 (androgen receptor); ENSG00000183087 (growth arrest specific 6); ENSG00000185101 (anoctamin 9); ENSG00000188313 (phospholipid scramblase 1); ENSG00000196159 (FAT atypical cadherin 4)

BP GO:0006950 response to stress

Annotate: 3481

Significant: 109

Expected: 84.17

topGO p-value: 0.0015

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000000971 (CFH); ENSG00000003989 (SLC7A2); ENSG00000007908 (SELE); ENSG00000008517 (IL32); ENSG00000010671 (BTK); ENSG00000017427 (IGF1); ENSG00000023445 (BIRC3); ENSG00000048052 (HDAC9); ENSG00000073282 (TP63); ENSG00000073756 (PTGS2); ENSG00000074590 (NUAK1); ENSG00000075275 (CELSR1); ENSG00000078401 (EDN1); ENSG00000079691 (LRRC16A); ENSG00000087245 (MMP2); ENSG00000090339 (ICAM1); ENSG00000091831 (ESR1); ENSG00000092969 (TGFB2); ENSG00000095303 (PTGS1); ENSG00000099860 (GADD45B); ENSG00000100311 (PDGFB);

ENSG00000100342 (APOL1); ENSG00000103034 (NDRG4); ENSG00000104856 (RELB);
ENSG00000105327 (BBC3); ENSG00000105499 (PLA2G4C); ENSG00000105639 (JAK3);
ENSG00000108691 (CCL2); ENSG00000108771 (DHX58); ENSG00000110799 (VWF);
ENSG00000111912 (NCOA7); ENSG00000115267 (IFIH1); ENSG00000115414 (FN1);
ENSG00000117228 (GBP1); ENSG00000117394 (SLC2A1); ENSG00000117595 (IRF6);
ENSG00000118523 (CTGF); ENSG00000120337 (TNFSF18); ENSG00000120885 (CLU);
ENSG00000122641 (INHBA); ENSG00000124145 (SDC4); ENSG00000126709 (IFI6);
ENSG00000126803 (HSPA2); ENSG00000128284 (APOL3); ENSG00000129474 (AJUBA);
ENSG00000130635 (COL5A1); ENSG00000130707 (ASS1); ENSG00000131477 (RAMP2);
ENSG00000132530 (XAF1); ENSG00000132561 (MATN2); ENSG00000133026 (MYH10);
ENSG00000133710 (SPINK5); ENSG00000134058 (CDK7); ENSG00000135124 (P2RX4);
ENSG00000135919 (SERPINE2); ENSG00000137403 (HLA-F); ENSG00000137801 (THBS1);
ENSG00000137959 (IFI44L); ENSG00000138061 (CYP1B1); ENSG00000141655 (TNFRSF11A);
ENSG00000142871 (CYR61); ENSG00000142949 (PTPRF); ENSG00000143878 (RHOB);
ENSG00000144476 (ACKR3); ENSG00000148677 (ANKRD1); ENSG00000150551 (LYPD1);
ENSG00000150593 (PDCD4); ENSG00000152495 (CAMK4); ENSG00000153208 (MERTK);
ENSG00000156466 (GDF6); ENSG00000157601 (MX1); ENSG00000160323 (ADAMTS13);
ENSG00000162616 (DNAJB4); ENSG00000162692 (VCAM1); ENSG00000162772 (ATF3);
ENSG00000163347 (CLDN1); ENSG00000163453 (IGFBP7); ENSG00000164220 (F2RL2);
ENSG00000164342 (TLR3); ENSG00000164463 (CREBRF); ENSG00000164692 (COL1A2);
ENSG00000166741 (NNMT); ENSG00000167191 (GPRC5B); ENSG00000168542 (COL3A1);
ENSG00000170323 (FABP4); ENSG00000170458 (CD14); ENSG00000170962 (PDGFD);
ENSG00000174059 (CD34); ENSG00000176046 (NUPR1); ENSG00000176907 (C8orf4);
ENSG00000179954 (SSC5D); ENSG00000181104 (F2R); ENSG00000182179 (UBA7);
ENSG00000183049 (CAMK1D); ENSG00000183087 (GAS6); ENSG00000183696 (UPP1);
ENSG00000184371 (CSF1); ENSG00000185745 (IFIT1); ENSG00000185885 (IFITM1);
ENSG00000188313 (PLSCR1); ENSG00000196562 (SULF2); ENSG00000196586 (MYO6);
ENSG00000197381 (ADARB1); ENSG00000204403 (CASP12); ENSG00000211445 (GPX3);
ENSG00000225830 (ERCC6); ENSG00000239264 (TXNDC5); ENSG00000249437 (NAIP);
ENSG00000281244 (ADAMTS13)

Differentially expressed genes in this GO term (IDs and product descriptions):
ENSG00000000971 (complement factor H); ENSG00000003989 (solute carrier family 7
(cationic amino acid transporter; y+ system); member 2); ENSG00000007908
(selectin E); ENSG00000008517 (interleukin 32); ENSG00000010671 (Bruton tyrosine
kinase); ENSG00000017427 (insulin like growth factor 1); ENSG00000023445
(baculoviral IAP repeat containing 3); ENSG00000048052 (histone deacetylase 9);
ENSG00000073282 (tumor protein p63); ENSG00000073756 (prostaglandin-endoperoxide
synthase 2 (prostaglandin G/H synthase and cyclooxygenase)); ENSG00000074590
(NUAK family; SNF1-like kinase; 1); ENSG00000075275 (cadherin; EGF LAG seven-
pass G-type receptor 1); ENSG00000078401 (endothelin 1); ENSG00000079691
(leucine rich repeat containing 16A); ENSG00000087245 (matrix metalloproteinase
2); ENSG00000090339 (intercellular adhesion molecule 1); ENSG00000091831
(estrogen receptor 1); ENSG00000092969 (transforming growth factor beta 2);
ENSG00000095303 (prostaglandin-endoperoxide synthase 1 (prostaglandin G/H
synthase and cyclooxygenase)); ENSG00000099860 (growth arrest and DNA damage
inducible beta); ENSG00000100311 (platelet-derived growth factor beta
polypeptide); ENSG00000100342 (apolipoprotein L1); ENSG00000103034 (NDRG family
member 4); ENSG00000104856 (v-rel avian reticuloendotheliosis viral oncogene
homolog B); ENSG00000105327 (BCL2 binding component 3); ENSG00000105499
(phospholipase A2 group IVC); ENSG00000105639 (Janus kinase 3); ENSG00000108691
(chemokine (C-C motif) ligand 2); ENSG00000108771 (DEXH (Asp-Glu-X-His) box
polypeptide 58); ENSG00000110799 (von Willebrand factor); ENSG00000111912
(nuclear receptor coactivator 7); ENSG00000115267 (interferon induced; with
helicase C domain 1); ENSG00000115414 (fibronectin 1); ENSG00000117228
(guanylate binding protein 1; interferon-inducible); ENSG00000117394 (solute
carrier family 2 (facilitated glucose transporter); member 1); ENSG00000117595
(interferon regulatory factor 6); ENSG00000118523 (connective tissue growth

factor); ENSG00000120337 (tumor necrosis factor superfamily member 18);
ENSG00000120885 (clusterin); ENSG00000122641 (inhibin beta A); ENSG00000124145
(syndecan 4); ENSG00000126709 (interferon; alpha-inducible protein 6);
ENSG00000126803 (heat shock protein family A (Hsp70) member 2); ENSG00000128284
(apolipoprotein L3); ENSG00000129474 (ajuba LIM protein); ENSG00000130635
(collagen; type V; alpha 1); ENSG00000130707 (argininosuccinate synthase 1);
ENSG00000131477 (receptor (G protein-coupled) activity modifying protein 2);
ENSG00000132530 (XIAP associated factor 1); ENSG00000132561 (matrilin 2);
ENSG00000133026 (myosin; heavy chain 10; non-muscle); ENSG00000133710 (serine
peptidase inhibitor; Kazal type 5); ENSG00000134058 (cyclin-dependent kinase 7);
ENSG00000135124 (purinergic receptor P2X; ligand gated ion channel; 4);
ENSG00000135919 (serpin peptidase inhibitor; clade E (nexin; plasminogen
activator inhibitor type 1); member 2); ENSG00000137403 (major
histocompatibility complex; class I; F); ENSG00000137801 (thrombospondin 1);
ENSG00000137959 (interferon induced protein 44 like); ENSG00000138061
(cytochrome P450 family 1 subfamily B member 1); ENSG00000141655 (tumor necrosis
factor receptor superfamily member 11a); ENSG00000142871 (cysteine-rich;
angiogenic inducer; 61); ENSG00000142949 (protein tyrosine phosphatase; receptor
type; F); ENSG00000143878 (ras homolog family member B); ENSG00000144476
(atypical chemokine receptor 3); ENSG00000148677 (ankyrin repeat domain 1
(cardiac muscle)); ENSG00000150551 (LY6/PLAUR domain containing 1);
ENSG00000150593 (programmed cell death 4 (neoplastic transformation
inhibitor)); ENSG00000152495 (calcium/calmodulin-dependent protein kinase IV);
ENSG00000153208 (MER proto-oncogene; tyrosine kinase); ENSG00000156466 (growth
differentiation factor 6); ENSG00000157601 (MX dynamin-like GTPase 1);
ENSG00000160323 (ADAM metallopeptidase with thrombospondin type 1 motif 13);
ENSG00000162616 (DnaJ heat shock protein family (Hsp40) member B4);
ENSG00000162692 (vascular cell adhesion molecule 1); ENSG00000162772 (activating
transcription factor 3); ENSG00000163347 (claudin 1); ENSG00000163453 (insulin
like growth factor binding protein 7); ENSG00000164220 (coagulation factor II
(thrombin) receptor-like 2); ENSG00000164342 (toll-like receptor 3);
ENSG00000164463 (CREB3 regulatory factor); ENSG00000164692 (collagen; type I;
alpha 2); ENSG00000166741 (nicotinamide N-methyltransferase); ENSG00000167191 (G
protein-coupled receptor; class C; group 5; member B); ENSG00000168542
(collagen; type III; alpha 1); ENSG00000170323 (fatty acid binding protein 4;
adipocyte); ENSG00000170458 (CD14 molecule); ENSG00000170962 (platelet derived
growth factor D); ENSG00000174059 (CD34 molecule); ENSG00000176046 (nuclear
protein 1; transcriptional regulator); ENSG00000176907 (chromosome 8 open
reading frame 4); ENSG00000179954 (scavenger receptor cysteine rich family; 5
domains); ENSG00000181104 (coagulation factor II (thrombin) receptor);
ENSG00000182179 (ubiquitin-like modifier activating enzyme 7); ENSG00000183049
(calcium/calmodulin dependent protein kinase ID); ENSG00000183087 (growth arrest
specific 6); ENSG00000183696 (uridine phosphorylase 1); ENSG00000184371 (colony
stimulating factor 1 (macrophage)); ENSG00000185745 (interferon induced protein
with tetratricopeptide repeats 1); ENSG00000185885 (interferon induced
transmembrane protein 1); ENSG00000188313 (phospholipid scramblase 1);
ENSG00000196562 (sulfatase 2); ENSG00000196586 (myosin VI); ENSG00000197381
(adenosine deaminase; RNA-specific; B1); ENSG00000204403 (caspase 12
(gene/pseudogene)); ENSG00000211445 (glutathione peroxidase 3); ENSG00000225830
(excision repair cross-complementation group 6); ENSG00000239264 (thioredoxin
domain containing 5 (endoplasmic reticulum)); ENSG00000249437 (NLR family;
apoptosis inhibitory protein); ENSG00000281244 (ADAM metallopeptidase with
thrombospondin type 1 motif 13)

BP GO:0007010 cytoskeleton organization
Annotate: 1123
Significant: 43

```
# Expected: 27.15
# topGO p-value: 0.0018
# Differentially expressed genes in this GO term (IDs and gene names):
ENSG00000023445 (BIRC3); ENSG00000049540 (ELN); ENSG00000075275 (CELSR1);
ENSG00000078018 (MAP2); ENSG00000078401 (EDN1); ENSG00000079691 (LRRC16A);
ENSG00000083857 (FAT1); ENSG00000084112 (SSH1); ENSG00000088367 (EPB41L1);
ENSG00000090339 (ICAM1); ENSG00000092969 (TGFB2); ENSG00000095637 (SORBS1);
ENSG00000099204 (ABLIM1); ENSG00000099864 (PALM); ENSG00000100625 (SIX4);
ENSG00000108691 (CCL2); ENSG00000111859 (NEDD9); ENSG00000112902 (SEMA5A);
ENSG00000114841 (DNAH1); ENSG00000117519 (CNN3); ENSG00000118523 (CTGF);
ENSG00000124145 (SDC4); ENSG00000129474 (AJUBA); ENSG00000129680 (MAP7D3);
ENSG00000133026 (MYH10); ENSG00000137877 (SPTBN5); ENSG00000145075 (CCDC39);
ENSG00000145703 (IQGAP2); ENSG00000146122 (DAAM2); ENSG00000148677 (ANKRD1);
ENSG00000154556 (SORBS2); ENSG00000164056 (SPRY1); ENSG00000169515 (CCDC8);
ENSG00000172399 (MYOZ2); ENSG00000172403 (SYNPO2); ENSG00000172602 (RND1);
ENSG00000183091 (NEB); ENSG00000184292 (TACSTD2); ENSG00000186472 (PCLO);
ENSG00000198947 (DMD); ENSG00000214021 (TTLL3); ENSG00000231257 (ATAT1);
ENSG00000235658 (ATAT1)
```

```
# Differentially expressed genes in this GO term (IDs and product descriptions):
ENSG00000023445 (baculoviral IAP repeat containing 3); ENSG00000049540
(elastin); ENSG00000075275 (cadherin; EGF LAG seven-pass G-type receptor 1);
ENSG00000078018 (microtubule associated protein 2); ENSG00000078401 (endothelin
1); ENSG00000079691 (leucine rich repeat containing 16A); ENSG00000083857 (FAT
atypical cadherin 1); ENSG00000084112 (slingshot protein phosphatase 1);
ENSG00000088367 (erythrocyte membrane protein band 4.1-like 1); ENSG00000090339
(intercellular adhesion molecule 1); ENSG00000092969 (transforming growth factor
beta 2); ENSG00000095637 (sorbin and SH3 domain containing 1); ENSG00000099204
(actin binding LIM protein 1); ENSG00000099864 (paralemmin); ENSG00000100625
(SIX homeobox 4); ENSG00000108691 (chemokine (C-C motif) ligand 2);
ENSG00000111859 (neural precursor cell expressed; developmentally down-regulated
9); ENSG00000112902 (sema domain; seven thrombospondin repeats (type 1 and type
1-like); transmembrane domain (TM) and short cytoplasmic domain; (semaphorin)
5A); ENSG00000114841 (dynein; axonemal; heavy chain 1); ENSG00000117519
(calponin 3; acidic); ENSG00000118523 (connective tissue growth factor);
ENSG00000124145 (syndecan 4); ENSG00000129474 (ajuba LIM protein);
ENSG00000129680 (MAP7 domain containing 3); ENSG00000133026 (myosin; heavy chain
10; non-muscle); ENSG00000137877 (spectrin; beta; non-erythrocytic 5);
ENSG00000145075 (coiled-coil domain containing 39); ENSG00000145703 (IQ motif
containing GTPase activating protein 2); ENSG00000146122 (dishevelled associated
activator of morphogenesis 2); ENSG00000148677 (ankyrin repeat domain 1
(cardiac muscle)); ENSG00000154556 (sorbin and SH3 domain containing 2);
ENSG00000164056 (sprouty RTK signaling antagonist 1); ENSG00000169515 (coiled-
coil domain containing 8); ENSG00000172399 (myozenin 2); ENSG00000172403
(synaptopodin 2); ENSG00000172602 (Rho family GTPase 1); ENSG00000183091
(nebulin); ENSG00000184292 (tumor-associated calcium signal transducer 2);
ENSG00000186472 (piccolo presynaptic cytomatrix protein); ENSG00000198947
(dystrophin); ENSG00000214021 (tubulin tyrosine ligase like 3); ENSG00000231257
(alpha tubulin acetyltransferase 1); ENSG00000235658 (alpha tubulin
acetyltransferase 1)
```

```
### BP      GO:0000003 reproduction
# Annotate: 1195
# Significant: 45
# Expected: 28.89
# topGO p-value: 0.002
```

```
# Differentially expressed genes in this GO term (IDs and gene names):
ENSG00000013297 (CLDN11); ENSG00000017427 (IGF1); ENSG00000023445 (BIRC3);
ENSG000000071242 (RPS6KA2); ENSG000000073146 (MOV10L1); ENSG000000073282 (TP63);
ENSG000000073756 (PTGS2); ENSG000000078401 (EDN1); ENSG000000087245 (MMP2);
ENSG000000087903 (RFX2); ENSG000000090339 (ICAM1); ENSG000000091831 (ESR1);
ENSG000000092969 (TGFB2); ENSG000000100311 (PDGFB); ENSG000000100625 (SIX4);
ENSG000000105499 (PLA2G4C); ENSG000000108387 (SEPT4); ENSG000000109906 (ZBTB16);
ENSG000000111424 (VDR); ENSG000000121858 (TNFSF10); ENSG000000122641 (INHBA);
ENSG000000125378 (BMP4); ENSG000000126803 (HSPA2); ENSG000000129757 (CDKN1C);
ENSG000000131477 (RAMP2); ENSG000000135919 (SERPINE2); ENSG000000137070 (IL11RA);
ENSG000000137573 (SULF1); ENSG000000142871 (CYR61); ENSG000000143869 (GDF7);
ENSG000000146374 (RSPO3); ENSG000000150347 (ARID5B); ENSG000000153208 (MERTK);
ENSG000000163453 (IGFBP7); ENSG000000164342 (TLR3); ENSG000000164463 (CREBRF);
ENSG000000164823 (OSGIN2); ENSG000000169083 (AR); ENSG000000176046 (NUPR1);
ENSG000000184371 (CSF1); ENSG000000184916 (JAG2); ENSG000000269964 (MEI4);
ENSG000000274829 (PARN); ENSG000000276644 (DACH1); ENSG000000278311 (GGNBP2)
```

```
# Differentially expressed genes in this GO term (IDs and product descriptions):
ENSG00000013297 (claudin 11); ENSG00000017427 (insulin like growth factor 1);
ENSG00000023445 (baculoviral IAP repeat containing 3); ENSG000000071242
(ribosomal protein S6 kinase; 90kDa; polypeptide 2); ENSG000000073146 (Mov10 RISC
complex RNA helicase like 1); ENSG000000073282 (tumor protein p63);
ENSG000000073756 (prostaglandin-endoperoxide synthase 2 (prostaglandin G/H
synthase and cyclooxygenase)); ENSG000000078401 (endothelin 1); ENSG000000087245
(matrix metalloproteinase 2); ENSG000000087903 (regulatory factor X2);
ENSG000000090339 (intercellular adhesion molecule 1); ENSG000000091831 (estrogen
receptor 1); ENSG000000092969 (transforming growth factor beta 2);
ENSG000000100311 (platelet-derived growth factor beta polypeptide);
ENSG000000100625 (SIX homeobox 4); ENSG000000105499 (phospholipase A2 group IVC);
ENSG000000108387 (septin 4); ENSG000000109906 (zinc finger and BTB domain
containing 16); ENSG000000111424 (vitamin D (1;25- dihydroxyvitamin D3)
receptor); ENSG000000121858 (tumor necrosis factor superfamily member 10);
ENSG000000122641 (inhibin beta A); ENSG000000125378 (bone morphogenetic protein
4); ENSG000000126803 (heat shock protein family A (Hsp70) member 2);
ENSG000000129757 (cyclin-dependent kinase inhibitor 1C (p57; Kip2));
ENSG000000131477 (receptor (G protein-coupled) activity modifying protein 2);
ENSG000000135919 (serpin peptidase inhibitor; clade E (nexin; plasminogen
activator inhibitor type 1); member 2); ENSG000000137070 (interleukin 11 receptor
subunit alpha); ENSG000000137573 (sulfatase 1); ENSG000000142871 (cysteine-rich;
angiogenic inducer; 61); ENSG000000143869 (growth differentiation factor 7);
ENSG000000146374 (R-spondin 3); ENSG000000150347 (AT-rich interaction domain 5B);
ENSG000000153208 (MER proto-oncogene; tyrosine kinase); ENSG000000163453 (insulin
like growth factor binding protein 7); ENSG000000164342 (toll-like receptor 3);
ENSG000000164463 (CREB3 regulatory factor); ENSG000000164823 (oxidative stress
induced growth inhibitor family member 2); ENSG000000169083 (androgen receptor);
ENSG000000176046 (nuclear protein 1; transcriptional regulator); ENSG000000184371
(colony stimulating factor 1 (macrophage)); ENSG000000184916 (jagged 2);
ENSG000000269964 (meiotic double-stranded break formation protein 4);
ENSG000000274829 (poly (A)-specific ribonuclease); ENSG000000276644 (dachshund
family transcription factor 1); ENSG000000278311 (gametogenetin binding protein
2)
```

```
### BP GO:0007568 aging
# Annotate: 253
# Significant: 14
# Expected: 6.12
# topGO p-value: 0.0035
```


Differentially expressed genes in this GO term (IDs and gene names):
ENSG00000073282 (TP63); ENSG00000074590 (NUAK1); ENSG00000078401 (EDN1);
ENSG00000090339 (ICAM1); ENSG00000105327 (BBC3); ENSG00000113448 (PDE4D);
ENSG00000118523 (CTGF); ENSG00000129757 (CDKN1C); ENSG00000130707 (ASS1);
ENSG00000150593 (PDCD4); ENSG00000162692 (VCAM1); ENSG00000163347 (CLDN1);
ENSG00000168542 (COL3A1); ENSG00000198947 (DMD)

Differentially expressed genes in this GO term (IDs and product descriptions):
ENSG00000073282 (tumor protein p63); ENSG00000074590 (NUAK family; SNF1-like
kinase; 1); ENSG00000078401 (endothelin 1); ENSG00000090339 (intercellular
adhesion molecule 1); ENSG00000105327 (BCL2 binding component 3);
ENSG00000113448 (phosphodiesterase 4D); ENSG00000118523 (connective tissue
growth factor); ENSG00000129757 (cyclin-dependent kinase inhibitor 1C (p57;
Kip2)); ENSG00000130707 (argininosuccinate synthase 1); ENSG00000150593
(programmed cell death 4 (neoplastic transformation inhibitor));
ENSG00000162692 (vascular cell adhesion molecule 1); ENSG00000163347 (claudin
1); ENSG00000168542 (collagen; type III; alpha 1); ENSG00000198947 (dystrophin)

BP GO:0007267 cell-cell signaling

Annotate: 1360

Significant: 48

Expected: 32.88

topGO p-value: 0.005

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000010671 (BTK); ENSG00000064692 (SNCAIP); ENSG00000073282 (TP63);
ENSG00000073756 (PTGS2); ENSG00000075275 (CELSR1); ENSG00000078401 (EDN1);
ENSG00000083857 (FAT1); ENSG00000084112 (SSH1); ENSG00000092969 (TGFB2);
ENSG00000096395 (MLN); ENSG00000100311 (PDGFB); ENSG00000101306 (MYLK2);
ENSG00000109472 (CPE); ENSG00000112902 (SEMA5A); ENSG00000117394 (SLC2A1);
ENSG00000118523 (CTGF); ENSG00000120337 (TNFSF18); ENSG00000121858 (TNFSF10);
ENSG00000122641 (INHBA); ENSG00000125378 (BMP4); ENSG00000128602 (SMO);
ENSG00000135312 (HTR1B); ENSG00000135914 (HTR2B); ENSG00000135919 (SERPINE2);
ENSG00000137501 (SYTL2); ENSG00000137573 (SULF1); ENSG00000138435 (CHRNA1);
ENSG00000139174 (PRICKLE1); ENSG00000141655 (TNFRSF11A); ENSG00000142871
(CYR61); ENSG00000142949 (PTPRF); ENSG00000143469 (SYT14); ENSG00000146374
(RSPO3); ENSG00000149403 (GRIK4); ENSG00000150551 (LYPD1); ENSG00000153208
(MERTK); ENSG00000158258 (CLSTN2); ENSG00000166073 (GPR176); ENSG00000167191
(GPCR5B); ENSG00000169083 (AR); ENSG00000169242 (EFNA1); ENSG00000174059 (CD34);
ENSG00000176697 (BDNF); ENSG00000180340 (FZD2); ENSG00000181072 (CHRM2);
ENSG00000186472 (PCLO); ENSG00000196562 (SULF2); ENSG00000265107 (GJA5)

Differentially expressed genes in this GO term (IDs and product descriptions):

ENSG00000010671 (Bruton tyrosine kinase); ENSG00000064692 (synuclein alpha
interacting protein); ENSG00000073282 (tumor protein p63); ENSG00000073756
(prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and
cyclooxygenase)); ENSG00000075275 (cadherin; EGF LAG seven-pass G-type receptor
1); ENSG00000078401 (endothelin 1); ENSG00000083857 (FAT atypical cadherin 1);
ENSG00000084112 (slingshot protein phosphatase 1); ENSG00000092969 (transforming
growth factor beta 2); ENSG00000096395 (motilin); ENSG00000100311 (platelet-
derived growth factor beta polypeptide); ENSG00000101306 (myosin light chain
kinase 2); ENSG00000109472 (carboxypeptidase E); ENSG00000112902 (sema domain;
seven thrombospondin repeats (type 1 and type 1-like); transmembrane domain
(TM) and short cytoplasmic domain; (semaphorin) 5A); ENSG00000117394 (solute
carrier family 2 (facilitated glucose transporter); member 1); ENSG00000118523
(connective tissue growth factor); ENSG00000120337 (tumor necrosis factor
superfamily member 18); ENSG00000121858 (tumor necrosis factor superfamily
member 10); ENSG00000122641 (inhibin beta A); ENSG00000125378 (bone

morphogenetic protein 4); ENSG00000128602 (smoothened; frizzled class receptor); ENSG00000135312 (5-hydroxytryptamine (serotonin) receptor 1B; G protein-coupled); ENSG00000135914 (5-hydroxytryptamine (serotonin) receptor 2B; G protein-coupled); ENSG00000135919 (serpin peptidase inhibitor; clade E (nexin; plasminogen activator inhibitor type 1); member 2); ENSG00000137501 (synaptotagmin like 2); ENSG00000137573 (sulfatase 1); ENSG00000138435 (cholinergic receptor; nicotinic alpha 1); ENSG00000139174 (prickle homolog 1); ENSG00000141655 (tumor necrosis factor receptor superfamily member 11a); ENSG00000142871 (cysteine-rich; angiogenic inducer; 61); ENSG00000142949 (protein tyrosine phosphatase; receptor type; F); ENSG00000143469 (synaptotagmin 14); ENSG00000146374 (R-spondin 3); ENSG00000149403 (glutamate receptor; ionotropic; kainate 4); ENSG00000150551 (LY6/PLAUR domain containing 1); ENSG00000153208 (MER proto-oncogene; tyrosine kinase); ENSG00000158258 (calsyntenin 2); ENSG00000166073 (G protein-coupled receptor 176); ENSG00000167191 (G protein-coupled receptor; class C; group 5; member B); ENSG00000169083 (androgen receptor); ENSG00000169242 (ephrin-A1); ENSG00000174059 (CD34 molecule); ENSG00000176697 (brain-derived neurotrophic factor); ENSG00000180340 (frizzled class receptor 2); ENSG00000181072 (cholinergic receptor; muscarinic 2); ENSG00000186472 (piccolo presynaptic cytomatrix protein); ENSG00000196562 (sulfatase 2); ENSG00000265107 (gap junction protein alpha 5)

BP GO:0034330 cell junction organization

Annotate: 250

Significant: 13

Expected: 6.04

topGO p-value: 0.008

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000092969 (TGFB2); ENSG00000095637 (SORBS1); ENSG00000115414 (FN1); ENSG00000124145 (SDC4); ENSG00000129474 (AJUBA); ENSG00000131477 (RAMP2); ENSG00000137801 (THBS1); ENSG00000139880 (CDH24); ENSG00000163347 (CLDN1); ENSG00000173706 (HEG1); ENSG00000197822 (OCLN); ENSG00000265107 (GJA5); ENSG00000274671 (MARVELD2)

Differentially expressed genes in this GO term (IDs and product descriptions):

ENSG00000092969 (transforming growth factor beta 2); ENSG00000095637 (sorbin and SH3 domain containing 1); ENSG00000115414 (fibronectin 1); ENSG00000124145 (syndecan 4); ENSG00000129474 (ajuba LIM protein); ENSG00000131477 (receptor (G protein-coupled) activity modifying protein 2); ENSG00000137801 (thrombospondin 1); ENSG00000139880 (cadherin 24; type 2); ENSG00000163347 (claudin 1); ENSG00000173706 (heart development protein with EGF-like domains 1); ENSG00000197822 (occludin); ENSG00000265107 (gap junction protein alpha 5); ENSG00000274671 (MARVEL domain containing 2)

BP GO:0021700 developmental maturation

Annotate: 224

Significant: 12

Expected: 5.42

topGO p-value: 0.0085

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000010671 (BTK); ENSG00000017427 (IGF1); ENSG00000071242 (RPS6KA2); ENSG00000074527 (NTN4); ENSG00000087245 (MMP2); ENSG00000092969 (TGFB2); ENSG00000099864 (PALM); ENSG00000108387 (SEPT4); ENSG00000129757 (CDKN1C); ENSG00000133710 (SPINK5); ENSG00000172602 (RND1); ENSG00000196159 (FAT4)

Differentially expressed genes in this GO term (IDs and product descriptions):
ENSG00000010671 (Bruton tyrosine kinase); ENSG00000017427 (insulin like growth factor 1); ENSG00000071242 (ribosomal protein S6 kinase; 90kDa; polypeptide 2); ENSG00000074527 (netrin 4); ENSG00000087245 (matrix metalloproteinase 2); ENSG00000092969 (transforming growth factor beta 2); ENSG00000099864 (paralemmin); ENSG00000108387 (septin 4); ENSG00000129757 (cyclin-dependent kinase inhibitor 1C (p57; Kip2)); ENSG00000133710 (serine peptidase inhibitor; Kazal type 5); ENSG00000172602 (Rho family GTPase 1); ENSG00000196159 (FAT atypical cadherin 4)

BP GO:0016192 vesicle-mediated transport

Annotate: 1389

Significant: 46

Expected: 33.59

topGO p-value: 0.0177

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000007908 (SELE); ENSG00000010671 (BTK); ENSG00000017427 (IGF1); ENSG00000049759 (NEDD4L); ENSG00000075826 (SEC31B); ENSG00000079691 (LRRC16A); ENSG00000092969 (TGFB2); ENSG00000100311 (PDGFB); ENSG00000100342 (APOL1); ENSG00000102890 (ELMO3); ENSG00000103034 (NDRG4); ENSG00000108691 (CCL2); ENSG00000110799 (VWF); ENSG00000115232 (ITGA4); ENSG00000115414 (FN1); ENSG00000120885 (CLU); ENSG00000124145 (SDC4); ENSG00000124406 (ATP8A1); ENSG00000129048 (ACKR4); ENSG00000130147 (SH3BP4); ENSG00000131477 (RAMP2); ENSG00000133026 (MYH10); ENSG00000134243 (SORT1); ENSG00000135312 (HTR1B); ENSG00000135914 (HTR2B); ENSG00000137501 (SYTL2); ENSG00000137801 (THBS1); ENSG00000137877 (SPTBN5); ENSG00000138448 (ITGAV); ENSG00000143469 (SYT14); ENSG00000144476 (ACKR3); ENSG00000152932 (RAB3C); ENSG00000153208 (MERTK); ENSG00000168702 (LRP1B); ENSG00000170458 (CD14); ENSG00000179954 (SSC5D); ENSG00000183049 (CAMK1D); ENSG00000183087 (GAS6); ENSG00000186472 (PCLO); ENSG00000196586 (MYO6); ENSG00000197959 (DNM3); ENSG00000197969 (VPS13A); ENSG00000231925 (TAPBP); ENSG00000239264 (TXNDC5); ENSG00000241399 (CD302); ENSG00000259040 (BLOC1S5-TXNDC5)

Differentially expressed genes in this GO term (IDs and product descriptions):

ENSG00000007908 (selectin E); ENSG00000010671 (Bruton tyrosine kinase); ENSG00000017427 (insulin like growth factor 1); ENSG00000049759 (neural precursor cell expressed; developmentally down-regulated 4-like; E3 ubiquitin protein ligase); ENSG00000075826 (SEC31 homolog B; COPII coat complex component); ENSG00000079691 (leucine rich repeat containing 16A); ENSG00000092969 (transforming growth factor beta 2); ENSG00000100311 (platelet-derived growth factor beta polypeptide); ENSG00000100342 (apolipoprotein L1); ENSG00000102890 (engulfment and cell motility 3); ENSG00000103034 (NDRG family member 4); ENSG00000108691 (chemokine (C-C motif) ligand 2); ENSG00000110799 (von Willebrand factor); ENSG00000115232 (integrin subunit alpha 4); ENSG00000115414 (fibronectin 1); ENSG00000120885 (clusterin); ENSG00000124145 (syndecan 4); ENSG00000124406 (ATPase; aminophospholipid transporter (APLT); class I; type 8A; member 1); ENSG00000129048 (atypical chemokine receptor 4); ENSG00000130147 (SH3-domain binding protein 4); ENSG00000131477 (receptor (G protein-coupled) activity modifying protein 2); ENSG00000133026 (myosin; heavy chain 10; non-muscle); ENSG00000134243 (sortilin 1); ENSG00000135312 (5-hydroxytryptamine (serotonin) receptor 1B; G protein-coupled); ENSG00000135914 (5-hydroxytryptamine (serotonin) receptor 2B; G protein-coupled); ENSG00000137501 (synaptotagmin like 2); ENSG00000137801 (thrombospondin 1); ENSG00000137877 (spectrin; beta; non-erythrocytic 5); ENSG00000138448 (integrin subunit alpha V); ENSG00000143469 (synaptotagmin 14); ENSG00000144476 (atypical chemokine receptor 3); ENSG00000152932 (RAB3C; member RAS oncogene family); ENSG00000153208 (MER proto-oncogene; tyrosine kinase); ENSG00000168702 (LDL

receptor related protein 1B); ENSG00000170458 (CD14 molecule); ENSG00000179954 (scavenger receptor cysteine rich family; 5 domains); ENSG00000183049 (calcium/calmodulin dependent protein kinase ID); ENSG00000183087 (growth arrest specific 6); ENSG00000186472 (piccolo presynaptic cytomatrix protein); ENSG00000196586 (myosin VI); ENSG00000197959 (dynamin 3); ENSG00000197969 (vacuolar protein sorting 13 homolog A (S. cerevisiae)); ENSG00000231925 (TAP binding protein (tapasin)); ENSG00000239264 (thioredoxin domain containing 5 (endoplasmic reticulum)); ENSG00000241399 (CD302 molecule); ENSG00000259040 (BLOC1S5-TXNDC5 readthrough (NMD candidate))

BP GO:0055085 transmembrane transport

Annotate: 1250

Significant: 42

Expected: 30.22

topGO p-value: 0.0186

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000003989 (SLC7A2); ENSG00000013293 (SLC7A14); ENSG00000047617 (ANO2); ENSG00000049759 (NEDD4L); ENSG00000063127 (SLC6A16); ENSG00000069424 (KCNC2); ENSG00000081923 (ATP8B1); ENSG00000085563 (ABCB1); ENSG00000091137 (SLC26A4); ENSG00000100342 (APOL1); ENSG00000102287 (GABRE); ENSG00000105327 (BBC3); ENSG00000108846 (ABCC3); ENSG00000108932 (SLC16A6); ENSG00000113448 (PDE4D); ENSG00000114796 (KLHL24); ENSG00000115194 (SLC30A3); ENSG00000117394 (SLC2A1); ENSG00000124406 (ATP8A1); ENSG00000126803 (HSPA2); ENSG00000131389 (SLC6A6); ENSG00000135124 (P2RX4); ENSG00000135312 (HTR1B); ENSG00000135914 (HTR2B); ENSG00000137801 (THBS1); ENSG00000138435 (CHRNA1); ENSG00000138448 (ITGAV); ENSG00000139209 (SLC38A4); ENSG00000149403 (GRIK4); ENSG00000153721 (CNKSR3); ENSG00000154263 (ABCA10); ENSG00000158683 (PKD1L1); ENSG00000162687 (KCNT2); ENSG00000167995 (BEST1); ENSG00000181104 (F2R); ENSG00000183087 (GAS6); ENSG00000185101 (ANO9); ENSG00000187010 (RHD); ENSG00000197119 (SLC25A29); ENSG00000198947 (DMD); ENSG00000231925 (TAPBP); ENSG00000265107 (GJA5)

Differentially expressed genes in this GO term (IDs and product descriptions):

ENSG00000003989 (solute carrier family 7 (cationic amino acid transporter; y+ system); member 2); ENSG00000013293 (solute carrier family 7 member 14); ENSG00000047617 (anoctamin 2; calcium activated chloride channel); ENSG00000049759 (neural precursor cell expressed; developmentally down-regulated 4-like; E3 ubiquitin protein ligase); ENSG00000063127 (solute carrier family 6 member 16); ENSG00000069424 (potassium channel; voltage gated subfamily A regulatory beta subunit 2); ENSG00000081923 (ATPase; aminophospholipid transporter; class I; type 8B; member 1); ENSG00000085563 (ATP binding cassette subfamily B member 1); ENSG00000091137 (solute carrier family 26 (anion exchanger); member 4); ENSG00000100342 (apolipoprotein L1); ENSG00000102287 (gamma-aminobutyric acid (GABA) A receptor; epsilon); ENSG00000105327 (BCL2 binding component 3); ENSG00000108846 (ATP binding cassette subfamily C member 3); ENSG00000108932 (solute carrier family 16 member 6); ENSG00000113448 (phosphodiesterase 4D); ENSG00000114796 (kelch like family member 24); ENSG00000115194 (solute carrier family 30 (zinc transporter); member 3); ENSG00000117394 (solute carrier family 2 (facilitated glucose transporter); member 1); ENSG00000124406 (ATPase; aminophospholipid transporter (APLT); class I; type 8A; member 1); ENSG00000126803 (heat shock protein family A (Hsp70) member 2); ENSG00000131389 (solute carrier family 6 (neurotransmitter transporter); member 6); ENSG00000135124 (purinergic receptor P2X; ligand gated ion channel; 4); ENSG00000135312 (5-hydroxytryptamine (serotonin) receptor 1B; G protein-coupled); ENSG00000135914 (5-hydroxytryptamine (serotonin) receptor 2B; G protein-coupled); ENSG00000137801 (thrombospondin 1); ENSG00000138435 (cholinergic receptor; nicotinic alpha 1); ENSG00000138448 (integrin subunit alpha V); ENSG00000139209 (solute carrier family 38 member 4); ENSG00000149403

(glutamate receptor; ionotropic; kainate 4); ENSG00000153721 (CNKSR family member 3); ENSG00000154263 (ATP binding cassette subfamily A member 10); ENSG00000158683 (polycystic kidney disease 1 like 1); ENSG00000162687 (potassium channel; sodium activated subfamily T; member 2); ENSG00000167995 (bestrophin 1); ENSG00000181104 (coagulation factor II (thrombin) receptor); ENSG00000183087 (growth arrest specific 6); ENSG00000185101 (anoctamin 9); ENSG00000187010 (Rh blood group; D antigen); ENSG00000197119 (solute carrier family 25 (mitochondrial carnitine/acylcarnitine carrier); member 29); ENSG00000198947 (dystrophin); ENSG00000231925 (TAP binding protein (tapasin)); ENSG00000265107 (gap junction protein alpha 5)

BP GO:0050877 neurological system process

Annotate: 778

Significant: 27

Expected: 18.81

topGO p-value: 0.0381

Differentially expressed genes in this GO term (IDs and gene names):

ENSG00000069424 (KCNAB2); ENSG00000071242 (RPS6KA2); ENSG00000073756 (PTGS2); ENSG00000078401 (EDN1); ENSG00000081923 (ATP8B1); ENSG00000090339 (ICAM1); ENSG00000091137 (SLC26A4); ENSG00000099204 (ABLIM1); ENSG00000103034 (NDRG4); ENSG00000112706 (IMPG1); ENSG00000115380 (EFEMP1); ENSG00000124406 (ATP8A1); ENSG00000133026 (MYH10); ENSG00000135124 (P2RX4); ENSG00000135919 (SERPINE2); ENSG00000138061 (CYP1B1); ENSG00000138435 (CHRNA1); ENSG00000143341 (HMCN1); ENSG00000152495 (CAMK4); ENSG00000162496 (DHRS3); ENSG00000167995 (BEST1); ENSG00000179772 (FOXS1); ENSG00000180340 (FZD2); ENSG00000181104 (F2R); ENSG00000184292 (TACSTD2); ENSG00000196586 (MYO6); ENSG00000274671 (MARVELD2)

Differentially expressed genes in this GO term (IDs and product descriptions):

ENSG00000069424 (potassium channel; voltage gated subfamily A regulatory beta subunit 2); ENSG00000071242 (ribosomal protein S6 kinase; 90kDa; polypeptide 2); ENSG00000073756 (prostaglandin-endoperoxide synthase 2 (prostaglandin G/H synthase and cyclooxygenase)); ENSG00000078401 (endothelin 1); ENSG00000081923 (ATPase; aminophospholipid transporter; class I; type 8B; member 1); ENSG00000090339 (intercellular adhesion molecule 1); ENSG00000091137 (solute carrier family 26 (anion exchanger); member 4); ENSG00000099204 (actin binding LIM protein 1); ENSG00000103034 (NDRG family member 4); ENSG00000112706 (interphotoreceptor matrix proteoglycan 1); ENSG00000115380 (EGF containing fibulin-like extracellular matrix protein 1); ENSG00000124406 (ATPase; aminophospholipid transporter (APLT); class I; type 8A; member 1); ENSG00000133026 (myosin; heavy chain 10; non-muscle); ENSG00000135124 (purinergic receptor P2X; ligand gated ion channel; 4); ENSG00000135919 (serpin peptidase inhibitor; clade E (nexin; plasminogen activator inhibitor type 1); member 2); ENSG00000138061 (cytochrome P450 family 1 subfamily B member 1); ENSG00000138435 (cholinergic receptor; nicotinic alpha 1); ENSG00000143341 (hemicentin 1); ENSG00000152495 (calcium/calmodulin-dependent protein kinase IV); ENSG00000162496 (dehydrogenase/reductase (SDR family) member 3); ENSG00000167995 (bestrophin 1); ENSG00000179772 (forkhead box S1); ENSG00000180340 (frizzled class receptor 2); ENSG00000181104 (coagulation factor II (thrombin) receptor); ENSG00000184292 (tumor-associated calcium signal transducer 2); ENSG00000196586 (myosin VI); ENSG00000274671 (MARVEL domain containing 2)