Phosphoproteomic analysis reveals an intrinsic pathway for histone deacetylase 7 regulation that controls cytotoxic T lymphocyte function

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Supplementary Figure 1 Schematic representation of SILAC experimental workflow.
**Supplementary Figure 2** TCR regulated phosphopeptides derived from 303 proteins were subjected to Ingenuity Pathway Analysis. Data show TCR signalling pathway components identified in our screening.
**Pathways analysis (Ingenuity) of all consistent phosphorylations**

### Polymeration of Actin

| Gene Name | TCR stimulated/ unstimulated | Exp 1 | Exp 2 | Exp 3 | Exp 4 | Aa | Position | Sequence Window |
|-----------|-------------------------------|-------|-------|-------|-------|----|----------|-----------------|
| Acin1     | 1.31                          | 1.13  | 1.00  | 1.08  | S     | 710 | VRGRLHSLPEPEFK |
| Acin1     | 0.83                          | 0.82  | 0.98  | 0.82  | T     | 216 | SEEKGSDEEKPEPDK |
| Acin1     | 0.74                          | 0.81  | 1.16  | 1.36  | S     | 477 | PAQLRLSRSLPSG |
| Cdc2l1    | 1.07                          | 1.06  | 1.57  | 1.57  | S     | 47  | RDKSRLRSLEPSEPEPE |
| Cdk7      | 1.07                          | 1.20  | 0.84  | 1.12  | T     | 170 | SPNRAYTHQVTVTR |
| Cst3      | 1.18                          | 0.83  | 1.02  | 1.12  | S     | 691 | KRPNEQDSDEEKEQ |
| Dh1       | 1.07                          | 0.96  | 0.93  | 0.92  | T     | 505 | COETVQGEQDL |
| Dh1       | 1.51                          | 1.11  | 0.82  | 0.92  | T     | 520 | PPLKRSLQSGSP |
| Dck1      | 0.10                          | 0.73  | 0.97  | 0.98  | S     | 481 | PKTVLSSEGGTDG |

**RNA PTMs**

| Number of proteins | Polymisation of actin | Protein synthesis | RNA PTMs | Cell death | Transcription |
|--------------------|-----------------------|-------------------|----------|------------|--------------|
| 27                 | 96                    | 79                | 7        | 21         | 21 |

**Molecular and cellular functions**

- RNA PTMs
- Cell death
- Transcription
- Polymisation of actin
- Protein synthesis

**Protein Biosynthesis**

| Gene Name | TCR stimulated/ unstimulated | Exp 1 | Exp 2 | Exp 3 | Exp 4 | Aa | Position | Sequence Window |
|-----------|-------------------------------|-------|-------|-------|-------|----|----------|-----------------|
| Acin1     | 1.19                          | 0.95  | 0.89  | 0.99  | S     | 194 | KPAADSDIGESEEEG |
| Acin1     | 0.67                          | 0.92  | 0.84  | 0.84  | S     | 726 | KEAEGQSGEKEEQ |
| Cdk4      | 0.98                          | 1.23  | 1.03  | 1.03  | S     | 403 | YLIKEFSEDAE |
| Etif2b5   | 1.00                          | 1.46  | 1.44  | 1.30  | T     | 540 | LDRSGAPQGQDII |
| Etif2b5   | 1.21                          | 0.98  | 1.01  | 1.22  | T     | 79  | ATPSGAAPQPA |
| Etif2b5   | 1.26                          | 1.26  | 1.09  | 1.22  | T     | 75  | EETPAPSGAPSPA |
| Etif2b5   | 1.10                          | 0.97  | 1.28  | 1.27  | T     | 39  | KQKLQLSGQVD |
| Etif2g    | 1.11                          | 1.00  | 0.97  | 1.12  | T     | 39  | LPDTGQF |
| Etifb5    | 1.54                          | 1.82  | 2.73  | 1.79  | T     | 425 | RTGSSEGQGQTS |
| Etifb5    | 1.72                          | 2.15  | 2.13  | 1.68  | T     | 420 | ERERSTGQGQTS |
| Etifb5    | 5.16                          | 4.44  | 3.45  | 1.58  | T     | 492 | SNARSFGDSQDTE |
| Etifb5    | 1.65                          | 1.02  | 1.30  | 1.16  | T     | 39  | QIERSKPGES |
| Etifb5    | 1.54                          | 0.97  | 2.17  | 1.21  | T     | 422 | SKRPGGSEGQTSQ |
| Etifb5    | 3.12                          | 1.05  | 1.72  | 1.05  | T     | 497 | PAPRSGDQSDTE |
| Etifb5    | 5.16                          | 1.25  | 1.65  | 1.65  | T     | 498 | PARSQDSDEQTS |
| Etifep1b  | 0.92                          | 0.92  | 1.00  | 1.00  | T     | 45  | GTLLSTFPQGTRI |
| Etifep1b  | 1.08                          | 1.17  | 1.03  | 1.03  | T     | 36  | GDSTYGSTPGTFL |
| Etifep1b  | 0.87                          | 1.07  | 0.95  | 1.05  | T     | 949 | TSQRSSPSVGK |
| Etifg4    | 1.02                          | 1.07  | 0.78  | 1.12  | T     | 1167 | TPATKRSKSEKE |
| Etifg4    | 1.10                          | 1.10  | 1.17  | 1.12  | T     | 1201 | GLKAKAEQDK |
| Etifg4    | 1.07                          | 1.21  | 1.06  | 1.16  | T     | 1181 | ATKRSGFEQ |
| Etifg5    | 0.87                          | 0.76  | 0.78  | 0.90  | T     | 114  | SFDGEQ |
| Etifg5    | 0.77                          | 0.95  | 0.86  | 1.01  | T     | 137 | NSEAPLGSDEAQ |
| Etifg5    | 1.30                          | 1.13  | 0.95  | 1.06  | T     | 215 | SPTFGDSDEQD |
| Inpp5d    | 0.54                          | 0.25  | 0.86  | 0.77  | T     | 972 | PSQPSLPKKPS |
| Inpp5d    | 2.49                          | 3.30  | 1.36  | 1.36  | T     | 932 | QPULHLSKTPSDL |
| Lag3      | 1.82                          | 6.38  | 1.91  | 2.88  | T     | 476 | NLLRFLSAHFIG |
| Nkla1     | 0.76                          | 1.44  | 0.97  | 1.37  | T     | 940 | TSQRRSLFSTL |
| Prkea     | 0.74                          | 1.18  | 1.12  | 1.12  | T     | 226 | NPQWNEFSTFKL |
| Ptk2b     | 1.01                          | 1.13  | 0.97  | 1.22  | T     | 375 | DGEKNSPSQ |
| Rbna2     | 1.23                          | 1.33  | 0.97  | 1.68  | T     | 136 | SGSRGDSQGSGG |
| Rpl5      | 1.04                          | 1.05  | 0.93  | 0.94  | T     | 295 | LSRILQSEFQ |
| Rps10     | 1.28                          | 2.42  | 2.15  | 1.16  | T     | 146 | AAEAGAGSTRTFQ |
| Rps27     | 0.97                          | 0.99  | 1.04  | 1.04  | T     | 11 | KDLHPSEQEER |
| Rps3      | 2.77                          | 2.28  | 1.28  | 1.28  | T     | 8 | TEWEAATPAVAET |
| Zip3501   | 1.29                          | 1.22  | 1.27  | 1.27  | T     | 54 | GFFKPRVSVTSLP |

**Supplementary Figure 3** Ingenious Pathway Analysis of consistent phosphorylations in CTLs. 742 phosphorylations on 473 different proteins found in at least three of the four conducted SILAC experiments in LCMV were subjected to Ingenious Pathway Analysis. Proteins involved in RNA post-transcriptional modifications (PTMs), polymerisation of actin, protein biosynthesis (a) and transcription (b) are listed with ratio (TCR stimulation/ unsimulated) and phosphorylation sites/sequences.
### Supplementary Figure 3

**Ingenuity Pathway Analysis of consistent phosphorylations in CTLs.**

742 phosphorylations on 473 different proteins found in at least three of the four conducted SILAC experiments in LCMV were subjected to Ingenuity Pathway Analysis. Proteins involved in RNA post-transcriptional modifications (PTMs), polymerisation of actin, protein biosynthesis (a) and transcription (b) are listed with ratio (TCR stimulation/ unstimulated) and phosphorylation sites/sequences.
Supplementary Figure 4 Analysis of specificity of anti-pHDAC7 antibody by ELISA. ELISA plates were coated with 5 the different amino-acid peptides indicated in (a), and ELISAs were performed using standard methods. b) Data show the phosphopeptide immunoreactivity of anti-pHDAC7 against three phosphopeptides PLRKTA$p$(251)EPNLKV, PLSRTQpS(489)SPLPQS and ALGRTQpS(651)SPAAPG and non phosphopeptide 251 in mouse HDAC5. p27-Sly peptide was included as a negative control. Antisera primary recognizes p251 phosphopeptide. Note that p251 site is conserved in mHDAC7 (p178) as indicated in (a).

| pSer position | Peptide sequence | mHDAC7 |
|---------------|------------------|--------|
| p251          | PLRKTA$p$SEPNLKV | HDAC5  |
| p178          | PLRKTV$p$SEPNLKL | HDAC7  |
| p489          | PLSRTQpSSPLPQS   | HDAC5  |
| p344          | PLNRT$p$SEPLLPS  | HDAC7  |
| p651          | ALGRTQpSSPAAPG   | HDAC5  |
| p479          | PLSRTQpSSPAAPV   | HDAC7  |
| p27-Sly       | LQRSS$p$SFKDF    | Sly    |

Absorbance at 400nm vs. Anti-p-HDAC7 antisera dilution
Supplementary Table 1 Full list of the basal and TCR regulated serine/threonine phosphorylations identified in the experiment depicted in Figure 1 with the ratio (TCR stimulated/ unstimulated) and phosphorylation sites/sequences.
| Gene.Name | Protein.Names | Numbe rof.Phospho. | Amino Acid | Position | Sequence | Window | Phospho.Probability | Ratio.(TCRstim:not stim).Normalized | Motifs | Best.Motif |
|-----------|---------------|------------------|------------|----------|----------|--------|---------------------|------------------------------------|--------|------------|
| A230054   | Antigen containing epitope | 1 | S | 2554 | TWTSEGSPEKMGH | SDHSGTW(0.008) | 184.28424 | CDK1;CDK CDK2 |
| 4930458   | Putative uncharacterized | 1 | S | 959 | QNPRPSRLRSA | KPNPRNPS(1)R | 132.8956636 | CAMK2; CAMK2 |
| Tex2      | Testis-expressed sequence | 2 | S | 277 | SPLTSPSDTRSSF | TAPS(0.013)S(0.9e) | 66.29980773 | GSK3; GSK3 |
| Mapk1     | Mitogen-activated protein kinase | 1 | T | 183 | DHTGFLETVATR | VADPHDHTGFLT(1) | 33.59876357 | |
| Serbp1    | Plasminogen activator | 1 | S | 329 | VLHKSKEEEAHAE | S(0.165)KS(0.835) | 24.88738458 | CHK1;PKD PKD |
| Fam21     | Protein FAM21 | 1 | S | 866 | GTKKIRSSVPSSG | IRS(0.697)S(0.287) | 21.53872663 | GSK3; GSK3 |
| Dnajc8    | DnaJ homolog subfamily | 1 | S | 35 | QIEKRDVLTSDK | RDS(1)VLTSK | 21.28655967 | AURORA;AURORA-A |
| Fyb       | FYN-binding protein | 1 | S | 203 | GQKPSLDTSDEQ | HTFGQKPS(0.108)I | 20.62025734 | GSK3; GSK3 |
| Srm2      | Srrm2 protein; Serine | 2 | S | 1630 | ARGRSSIESPKT | RGS(0.987)RS(0.9) | 19.65640602 | CK2; CK2 |
| Sh3gl1    | Endophilin-A2; Endoplakin | 1 | S | 288 | KITASSSFSSSDK | ITASS(0.003)S(0.9) | 19.35808575 | GSK3;GSK3 |
| Il16      | Pro-interleukin-16; IL-16 | 1 | S | 141 | IRQRSSFNENFG | IS(0.005)S(0.995) | 18.78181669 | CAMK2;PKPA;AKT |
| Rasgrp2   | RAS guanyl-releasing protein | 3 | S | 554 | CRRRaqSvLTSK | AQS(0.98)VS(0.02) | 17.95719006 | CAMK2;PKPA;AKT |
| Larp5     | La-related protein 5; LARP5 | 1 | S | 570 | SKERNLDASTN | NLS(0.994)T(0.006) | 17.50393839 | CAMK2;GSKCAMK2 |
| Rnf141    | Putative uncharacterized protein | 1 | S | 95 | SGIVEASRIMNL | SGGVEAS(1)R | 16.34307381 | |
| Rps6ka4   | Ribosomal protein S6 | 2 | S | 343 | RLEPVYPSAGSP | SELDVGNAFEETRI | 15.09046735 | ERK/MPK ERK/MPK |
| Rps6ka4   | Ribosomal protein S6 | 2 | S | 347 | VYSPAGSSPPGP | SELDVGNAFEETRI | 15.09046735 | CK1; CK1 |
| Grap2     | GRB2-related adaptor protein | 1 | S | 230 | QDRRGGSIDINDG | GGS(1)LIDINDGCH | 14.4794235 | CAMK2; CAMK2 |
| Cct2      | T-complex protein 1 ; T-complex associated protein 1 | 1 | S | 260 | SRVRVDSTVKA | VVRDS(1)TAK | 14.42293824 | CAMK2;PKPA;AKT |
| Zfp36     | Tristetraproline; Zinc finger | 1 | S | 178 | VLRQISIFSGLPS | QSI(0.991)FS(0.6) | 13.84811389 | |
| Ddx3x     | ATP-dependent RNA helicase | 1 | S | 92 | GDRSGGSGRFD | SSSFGDGRS(0.101) | 12.34354556 | |
| Ier3      | Radiation-inducible protein | 1 | S | 31 | PELRSGSPHEFT | RGS(1)GPEIFTFDP | 11.46521881 | CAMK2;CKPKA |
| Gabpa     | GA-binding protein | 1 | S | 303 | QSPRSIGEDRSS | SPRIS(1)GEDR | 11.41578575 | CK1;PKA;PKA |
| Ddx3x     | ATP-dependent RNA helicase | 1 | S | 90 | FFGDGRGSGGSRDF | SSSFGDGRS(1)GSF | 10.77272776 | PKA; PKA |
| Zfp36     | Tristetraproline; Zinc finger | 1 | S | 52 | LTGRSTSLVEGRS | STS(1)LVEGR | 10.5811483 | CAMK2;CKCAMK2 |
| Grap2     | GRB2-related adaptor protein | 1 | T | 254 | LMHRHRHTDPVLQ | RHT(1)DPVLQAC | 10.3430091 | CAMK2;CPKA |
| Gpr50     | Melatonin-related receptor | 2 | T | 398 | VRPKPTDTRSTSY | PKPQT(0.971)RS(0) | 9.737098345 | |
| Gpr50     | Melatonin-related receptor | 2 | S | 402 | PQTTRSTVYRKP | PKPQT(0.971)RS(0) | 9.737098345 | CAMK2;CAMK2 |
| Lin9      | Lin-9 homolog; Type I | 1 | S | 65 | KRSRLFSDEDQ | LFS(1)DEDDRQINT | 9.63669654 | CAMK2;CPKA;AKT |
Setd1a  Setd1a protein  2 S  1176  KRRKT/VFSAAEE  RKT(0.667)VS(0.68t)  9.551098376
Def6  Differentially expressed  1 S  597  QGNRTL/VNSSEQ  TLS(1)VSNSEQK  9.27127582  CAMK2;GSKCAMK2
Serbp1  Plasminogen activato  1 S  327  GVFLHK/SKEA  S(0.562)KS(0.41)E  9.266981744  CK2;NEK6 CK2
Mapk3  Mitogen-activated prc  1 T  203  DHTGFLTEVATR  IAIDPEHDHTFLT(1)  9.104151493
Gart  Trifunctional purine b  1 S  467  TSPRGSVDLGGF  AT(0.007)S(0.007)  9.015506671
Arhgef7  Rho guanine nucleotid  1 S  770  SRSRSQVPLL  KES(1)APQVLEEPI  8.96809865  CAMK2;PKA/akt
Pea15  Astrocytic phosphor  1 S  116  DIIQPSSEEIIK  DIIQPS(1)EEEIK  8.926977325  CAMK2;PKD
Ybx1  Nuclease-sensitive el  1 S  103  PRKYLRVSVDGT  S(1)YVGDTVEFDV  8.870753127
Saps2  Serine/threonine-prol  1 S  770  KTFGTP/PCAWNV  T(0.038)FGPT(0.01)  8.77860504  ERK/MAPK WW GroupIV
Setd1a  Setd1a protein  2 T  1174  PKRRKT/VTFSA  RKT(1)VS(0.647)F  8.670019074  AURORA;PKA/akt
Setd1a  Setd1a protein  2 S  1178  RKT/SFSAEAEAP  RKT(0.756)VS(0.3)  8.670019074  CK1;CK2 CK2
2310014I  Phostensin;Protein pt  1 S  259  VLESILPGEPGD  EVLSEGILPGEPC  8.405480373  CK1;CK2 CK2
Traf2  TNF receptor-associ  1 S  8  AASVTSPGSLE  AAAS(0.01)VT(0.01)  8.390669575  CK1;ERK/IERMKAPK
Phf3  Phf3 protein;Phf3 pro  2 S  650  PRQ/RSSFRSFDLD  RS(0.089)S(0.88)R  8.351428094  CK2;GPKA/akt
Clasp2  CLIP-associating prot  1 S  1249  NYSDSISFNNKSA  DYNPPYNSDSS(1)  8.325008325  CK1 CK1
Ppp1r12z  Ppp1r12z protein;MC  1 S  507  IPRLASTSDEYV  RLS(0.998)T(0.0C)  8.283631544  CAMK2 CAMK2
Chd8  Chromodomains-helic  1 S  2040  ARSRTLQ/QDYEEV  LTS(1)QDYEEV  7.817385866  CAMK2;PKA/akt
Tbc1d10i  TBC1 domain family  1 S  650  SLLLSPLSKRS  QQPLGPSSSLTSLF  7.788768596  CK1 CK1
Rasgrp2  RAS guanyl-releasing  2 S  565  GSAP/SPTTHHH  RAQVSLSLEG(0.00)  7.581501137
Myo9b  Myosin-IXb;Unconver  1 T  1346  ATGAALTPTER  ATGAALT(1)PTEER  7.526719855  CK2 CK2
Stmn1  Stathmin;Phosphoprc  2 S  25  AFELISPRSKES  RAS(1)QGAFELIS(1)  7.456565506  CDK1;NECDK1
Pcdhgb5  Protocadherin gamma  1 T  199  ELVLEKTLDREQQ  YELVLEKT(1)LDR  7.429972509  NEK6;PLKPLK1
Pttn7  Tyrosine-protein phos  1 S  143  CLGRAQ/SQEDSY  AQSS(1)QEDSYIN  7.332991127  CAMK2;CDK1/2
Nfatc2  Nuclear factor of acti  2 S  270  APLPAASP/QRSRS  RRHS(1)CAEAVAP  7.285443684  CDK1;CDK2CDK2
Traf2  TNF receptor-associ  1 S  11  SVTSPQ/LEQLQP  AAS(0.07)VS(0.07)  7.17000717  CK1 CK1
Dnmt1  DNA (cytosine-5)-me  1 S  22  GPRR/SKSDSLTS  S(0.263)KS(0.736)  7.065140596  CAMK2;PKPKA/akt
Phf3  Phf3 protein;Phf3 pro  2 S  660  RSSRSFSLEPP  RS(0.089)S(0.88)R  6.995452956  CAMK2;CDMAK2
Sptbn1  Spectrin beta chain, ĭ  2 S  14  SISGPLSPAYQG  T(0.426)S(0.241)S  6.934331877  CK1;ERK/IWW GroupIV
Arhgef1  Rho guanine nucleotid  1 S  390  SESLRSV/DRRRPS  SESLRSV(1)DR  6.905600442  CK1;NEK6 PKA
Dnmt1  DNA (cytosine-5)-me  1 S  20  PRGPRRS/KSDSDT  S(0.921)KS(0.078)  6.905123602  GSK3;PKA PKA
Lig1  DNA ligase 1;DNA lig  1 S  81  KVAQLV/SCGEDE  KVAQVL(1)CSEGEE  6.798558706
Ncapd2  Condensin complex  1 S  1320  RLQPLTSV/DSD  LQPLTS(1)VDSD  6.719526945
Bud13  BUD13 homolog;BUD  1 S  238  RHDLDASSPRKR  HLDAS(1)PPR  6.711409396  CDK1;CDK2CDK2
Plec1  Plectin-1;Plectin-6;Pl  1 S  4413  PRTQLASWDPTE  T(0.141)QLAS(0.8)  6.698821008  CK1 CK1
| Protein Name | Type | Entry Number | Description | Gene ID |
|--------------|------|--------------|-------------|---------|
| Ahnak        | Ahnak protein | 2 | 213 | IRLPSGSGPASPTVIRLPS(0.003)GS |
| Rps6ka3      | Ribosomal protein S6 | 1 | 715 | ALNRNQSPVLPEV NYQ(1)PVLPEVGR |
| Lcp1         | Plastin-2; L-plastin; Ly | 1 | 7 | MARGSVDEEDE GS(0.5)VS(0.5)DEI |
| Pde3b        | cGMP-inhibited 3',5'-c | 1 | 571 | NIILHRSLGSVSS S(0.827)LGS(0.16) |
| Rnf12        | Putative uncharacterized 1 | 1 | 269 | TLRQIQSGPHEL QQIS(1)GPELLGR |
| Zfp361       | Butyrate response factor | 1 | 92 | FRDRSFSDEGGER SF(1)ES |
| Morc2a       | MORC family CW-type | 2 | 737 | TSGKRKRLASVDE KRS(1)AVS(1)DEE |
| Ahnak        | Ahnak protein | 2 | 213 | IRLPSGSGPASPTVIRLPS(0.003)GS |
| Picalm       | Phosphatidylinositol-t | 1 | 303 | SRATTLSNVA SSL AT(0.013)T(0.013) |
| Tapbp        | Putative uncharacterized | 1 | 462 | LTIPNSKKSQ__ ATAAASLTIPRNS(1)K |
| Rcsd1        | Capz-interacting protein | 1 | 83 | KIKVKKSSPLEKL S(0.001)S(0.999)P |
| Hn1          | Hematological and ne | 1 | 85 | SPGTQRNSNEAS S(0.999)NS(0.001) |
| Ncor2        | Nuclear receptor core | 1 | 67 | 7PQRRPSLSEF QPPP(1)LLSEFQPG |
| Ctage5       | Cutaneous T-cell lymphoma | 1 | 654 | NSPQDSDFSAPE ACNLGSNPVDS(1)I |
| Rasgrp2      | RAS guanyl-releasing | 2 | 563 | LEGSAPSPSPTHT RAQSVSLEG(0.00) |
| Cd2          | T-cell surface antigen | 1 | 251 | IKASRTSTVERG PKD ARHGEF7 CAMK2; PKA/AKT |
| Cd2          | T-cell surface antigen | 1 | 252 | KASRTSTVERG PKD ARHGEF7 CAMK2; PKA/AKT |
| Zc3hav1      | Zinc finger CCCH-type | 1 | 513 | VSYGQVQSLRSHVL VYQVQVQSLRSHVL |
| Nfatc2       | Nuclear factor of activ | 1 | 757 | AALYQRSKSLSPG |
| A230054      | Antigen containing epitope | 1 | 896 | ERRRTKSLDEVK T(0.024)K(0.976) |
| Rhbdf2       | Rhomboid family member | 1 | 60 | AYLKSVSLQEPRA SVS(1)LQEPR |
| Eif3b        | Eukaryotic translational | 1 | 111 | QARPHSAGAEED GHPS(1)AGAEEGA |
| Cenpe        | Centromere-associate | 1 | 2426 | FDRNKRSLAPHPH S(0.06)KS(0.94)LP |
| Gify2        | PERQ amino-acid-rich | 1 | 202 | EFIRSEENWRF IHKHSRIS(0.005)ES |
| Hn1          | Hematological and ne | 1 | 87 | G7QRNLSSEASS S(0.292)NS(0.705) |
| Mki67        | Ki-67 protein | 1 | 125 | EPSRRASSDSCFR RAS(0.997)RDS(0.0) |
| Toe1         | Target of EG1 protei | 1 | 352 | 7RKSLQSQPTGQ KRS(0.171)LQG(0.0) |
| Arhgef7      | Rho guanine nucleotide | 1 | 673 | KPERKPSDEEFAV KPS(1)DEEFAVR |
| Rasal3       | RAS protein activator | 1 | 882 | PCGRWATRASASL AW(0.97)RAS(0.0) |
| Pnn          | Pinin; Putative unchar | 1 | 66 | LLRRGFSGDGGPP RGFS(1)DSGGPP |
| Fancd2       | Fanconi anemia group | 1 | 10 | KRRRLSDKEDK EKEDK |
| Zc3hc1       | Nuclear-interacting protein | 1 | 351 | GIVSRTRSWSS T(0.655)R(0.345) |
| Protein      | Description                                                                 | Score | Reference                  |
|--------------|-----------------------------------------------------------------------------|-------|----------------------------|
| Grp2         | GRB2-related adaptor protein 2                                               | 4.269490223 CAMK2 CAMK2 |
| Mi2          | Mi2 protein                                                                 | 4.230834321 ERK/MAPK WW GroupIV |
| Twistnb      | DNA-directed RNA po                                                          | 4.230118443 CAMK2;PK PKA |
| Twistnb      | DNA-directed RNA po                                                          | 4.230118443 CDK1;CDK CDK2 |
| Acin1        | Apoptotic chromatin                                                          | 4.200268817 CK1 CK1 |
| Itpkb        | Inositol 1,4,5-trispho                                                        | 4.193399589 |
| Itpkb        | Inositol 1,4,5-trispho                                                        | 4.193399589 CDK1;CDK ERK/MAPK |
| Grk6         | G protein-coupled rec                                                        | 4.184625685 CK1;PKA PKA |
| Trramp       | Transformation/transi                                                         | 4.13018338 14-3-3 bir 14-3-3 bindin |
| Gtse1        | G2 and S phase unchar                                                        | 4.11048997 CAMK2 CAMK2 |
| Acly         | Putative uncharacteri                                                        | 4.086302713 |
| Sptbn1       | Spectrin beta chain, t                                                       | 4.082965866 FHA2 Rad'NEK6 |
| Ranbp1       | Ran-specific GTPase-                                                       | 4.066363045 CAMK2;Ch CHK1/2 |
| Ripk1        | Receptor-interacting                                                        | 4.066197699 CAMK2;PK PKA/ AKT |
| Aspcr1       | Tether containing UB                                                       | 4.020423753 GSK3 GSK3 |
| Def6         | Differentially express                                                        | 3.984381226 CAMK2;Ch CHK1/2 |
| Akap13       | Putative uncharacteri                                                        | 3.952100541 NEK6 NEK6 |
| Akap13       | Putative uncharacteri                                                        | 3.948823251 CK1;PKA PKA |
| Rdbp         | Negative elongation f                                                        | 3.914507164 CAMK2;Ch PKA |
| Mki67        | Ki-67 protein                                                              | 3.881987578 FHA KAPP FHA KAPP |
| A230054      | Antigen containing e                                                       | 3.858471274 CAMK2;PK PKA |
| Evl          | Ena/VASP-like protein                                                        | 3.81141366 CAMK2;Ch CAMK2 |
| Trim28       | Transcription interme                                                       | 3.78787888 NIMA NIMA |
| Cep170       | Centrosomal protein                                                         | 3.770739065 CAMK2;Ch PKA/ AKT |
| Cep170       | Centrosomal protein                                                         | 3.770739065 CK1;CK2 CK2 |
| Ncpl1        | Nuclear cap-binding                                                          | 3.71742119 CAMK2;Fi-PKA |
| Trim28       | Transcription interme                                                       | 3.710024486 CAMK2;Ch PKA |
| Rab3gap      | Putative uncharacteri                                                        | 3.699182481 AURORA;AURORA |
| Dok1         | Docking protein 1;Do                                                        | 3.69153531 CAMK2;Ch PKD |
| Ashwin        | Ashwin                                                                      | 3.652567755 ERK/MAPK ERK/MAPK |
| Toe1         | Target of EGR1 protei                                                        | 3.651367437 AURORA;CPKA |
| Agap2        | Arf-GAP, GTPase, ANi                                                        | 3.628578686 CAMK2;Ch PKA/ AKT |
| Pnn          | Pinin;Putative unchar                                                        | 3.615590426 AURORA;CPKA |
| Gene Name  | Description                                        | Start | End   | Score  | Pathway Description                        | References                  |
|-----------|----------------------------------------------------|-------|-------|--------|--------------------------------------------|-----------------------------|
| Pola2     | DNA polymerase alpha                              | 1     | 14    | 1.5157 |                                             |                             |
| Zc3hc1    | Nuclear-interacting protein                       | 1     | 14    | 1.5157 |                                             |                             |
| Ncbp1     | Nuclear cap-binding protein                       | 1     | 14    | 1.5157 |                                             |                             |
| Tom1      | Putative uncharacterized protein                  | 1     | 14    | 1.5157 |                                             |                             |
| Trrap     | Transformation/translocase                        | 1     | 14    | 1.5157 |                                             |                             |
| Huwe1     | E3 ubiquitin-protein ligase                       | 1     | 14    | 1.5157 |                                             |                             |
| Ssr3      | Transloco-associate                               | 1     | 14    | 1.5157 |                                             |                             |
| Bles03    | UPF0696 protein C11                               | 1     | 14    | 1.5157 |                                             |                             |
| Raver1    | Ribonucleoprotein PTI                             | 1     | 14    | 1.5157 |                                             |                             |
| Matr3     | Matrin-3                                          | 1     | 14    | 1.5157 |                                             |                             |
| Zyx       | Zyxin; Putative uncharacterized protein           | 1     | 14    | 1.5157 |                                             |                             |
| Acly      | Putative uncharacterized protein                  | 1     | 14    | 1.5157 |                                             |                             |
| Exoc4     | Exocyst complex component                        | 1     | 14    | 1.5157 |                                             |                             |
| Mycgp2    | Probable E3 ubiquitin                             | 1     | 14    | 1.5157 |                                             |                             |
| Rcsd1     | Cap-interacting protein                           | 1     | 14    | 1.5157 |                                             |                             |
| Crtc3     | CREB-regulated trans                              | 2     | 14    | 1.5157 |                                             |                             |
| Mcm3      | DNA replication licenci                          | 1     | 14    | 1.5157 |                                             |                             |
| Chaf1a    | Chromatin assembly                                | 1     | 14    | 1.5157 |                                             |                             |
| Gpn1      | GPN-loop GTase 1                                  | 1     | 14    | 1.5157 |                                             |                             |
| Raf1      | RAF proto-oncogene                                | 1     | 14    | 1.5157 |                                             |                             |
| Ncbp1     | Nuclear cap-binding protein                       | 1     | 14    | 1.5157 |                                             |                             |
| Inpp5d    | Phosphatidylinositol                             | 1     | 14    | 1.5157 |                                             |                             |
| Phf3      | Phf3 protein                                       | 1     | 14    | 1.5157 |                                             |                             |
| Dynclh1   | Cytoplasmic dynein 1                              | 1     | 14    | 1.5157 |                                             |                             |
| Arhgap2   | Rho GTPase-activatin                              | 1     | 14    | 1.5157 |                                             |                             |
| Tbc1d101  | TBC1 domain family                               | 1     | 14    | 1.5157 |                                             |                             |
| Foxk1     | Forkhead box protein                              | 2     | 14    | 1.5157 |                                             |                             |
| Foxk1     | Forkhead box protein                              | 2     | 14    | 1.5157 |                                             |                             |
| Myc       | Myc proto-oncogene                                | 1     | 14    | 1.5157 |                                             |                             |
| Crtc3     | CREB-regulated trans                              | 2     | 14    | 1.5157 |                                             |                             |
| Rasal3    | RAS protein activator                             | 1     | 14    | 1.5157 |                                             |                             |
| Pbrm1     | Pb1 protein; Protein p                            | 1     | 14    | 1.5157 |                                             |                             |
| Ftsjd2    | FtsJ methyltransferas                             | 2     | 14    | 1.5157 |                                             |                             |
| Psd4      | PH and SEC7 domain                                | 1     | 14    | 1.5157 |                                             |                             |
| Protein Name                          | Ensembl ID | UniProt ID   | Gene ID    | Description                                                                 |
|--------------------------------------|------------|--------------|------------|-----------------------------------------------------------------------------|
| R3hdm2                               | R3H domain-containing protein | 1 S       | 921 KRNAKSASTDLG   | S(0.815)AS(0.17)T       | 3.146732119 |
| Phf3                                 | Phf3 protein | 1 S        | 1909 DRQFYSDSHLLK | FYS(1)DSHLLKR     | 3.128323844 CAMK2;PK PKA/AKT |
| Agap2                                | Arf-GAP, GTPase, ANp | 1 S      | 923 LRTDSQPSEAIVQ | LRT(0.108)DS(0.01)   | 3.117012655 CK1   |
| Ppm1g                                | Protein phosphatase | 1 T        | 525 LEALSTGAEKT   | KLEALS(0.5)T(0.5)   | 3.112549801 FHA KAPP FHA KAPP |
| Csde1                                | MK1A0885 protein | 1 S       | 538 RLLGRNNSKRLL | LLGRNS(1)NSK    | 3.081094405 PKA  |
| Rps6kbb1                             | Ribosomal protein S6 | 2 T      | 444 FIGSPTVPSPVK | FIGS(0.032)PT(0.0) | 3.079956549 CK1;ERK/IWW GroupIV |
| Srrm2                                | Srrm2 protein | 2 S        | 1077 TELTARSPKQDK | S(0.143)S(0.078)S   | 3.072007864 CDK1;CDK2 |
| Samn1                                | Putative uncharacteristic | 1 S       | 258 KYIYAKELSEEKE | ALS(1)EKEEESGG     | 3.068143466 |
| Mical1                                | NEDD9-interacting protein | 1 S   | 822 KPPRSCDLARES | S(0.033)CS(0.967) | 3.06638045 CAMK2 |
| Tbc1d10l1lTbc1 domain family r       | TBC1 domain protein | 2 S    | 693 LHPSPSPTGNST | RAS(1)AGPVGAVV       | 3.065415977 CK1 |
| Rasgrp2                              | Ras guanyl-releasing | 1 S      | 117 GNRRHSSLIDIES | HS(0.002)S(0.998)   | 3.05446104 CAMK2 |
| Dock11                               | Dedicator of cytokinesis | 1 S   | 12 KFTKLRSKPTAAA | RLS(1)KGTAALKR     | 3.043120125 CK1;PKA |
| Pom121                               | Nuclear envelope pore | 1 T     | 365 LNKKRSTSSVSL | T(0.615)S(0.192)S | 3.020600495 CAMK2;PK PKA/ACT |
| Mybbp1a                              | Myb-binding protein | 1 S       | 1325 LVSRPSSLQGSV | SP5(1)LLQSGV     | 3.015499668 CAMK2;CL PKD |
| Ploc1                                | Plectin-1;Plectin-6;PIK | 1 S   | 1729 LQSKRASFAEKTA | RAS(1)FAEK       | 3.009419483 CK1;CK2;IPIKA |
| Ripk1                                | Receptor-interacting | 1 S      | 313 KEYPDQSPVLQR | EYPDQS(1)PVLR     | 3.005981904 |
| Rasal3                               | Ras protein activator | 1 S     | 241 EKDKRASGELGAY | AK5(1)ELGAYTPR    | 2.992667963 CAMK2;PK PKA |
| Mcm3                                 | DNA replication license | 1 T    | 164 RYSRDLTVAFPS | RYS(0.185)DLT(0.1) | 2.986768615 FHA KAPP FHA KAPP |
| Evl                                  | Ena/VASP-like protein | 1 S      | 358 KSPKEASPLQSOQP | SPEAKS(0.999)PLC   | 2.978583981 GSK3 |
| Rasa3                                | Ras GTPase-activating | 1 S      | 809 KTRKRSQHEHP | YGS(1)QHEHPGK     | 2.956218405 CAMK2;CK CAMK2 |
| Larp4                                | La-related protein 4;I | 1 S     | 387 EHHSTEVSLGDD | S(0.008)S(0.007)S | 2.940751094 CK1;PLK1 PLK1 |
| Tbc1d15b                              | TBC1 domain family r | 1 S   | 32 KANDQDSLQSGIL | ANDQDS(1)LISGIL1   | 2.938410907 |
| Rasal3                               | Ras protein activator | 1 S      | 52 GWGRALSHQPEMV | ALS(1)HQPVMVNSC    | 2.931090072 CAMK2;CK CAMK2 |
| Myc                                  | Myc proto-oncogene | 1 S      | 82 LSPRSRGLCS | S(0.563)GLCS(0.4) | 2.926029963 CK1;GSK3 PKA |
| A230054                              | Antigen containing ep | 1 S    | 656 EYKRRTSTVILE | RT(0.169)S(0.793) | 2.925002925 CAMK2;PK PKA |
| Agap2                                | Arf-GAP, GTPase, ANp | 1 T      | 919 SVKVLRTDSQSEA | LRT(0.559)DS(0.0)  | 2.90799116 |
| Ahnak                                | Ahnak protein | 1 S      | 136 IKPRLRSEDGVG | LRS(1)EDGVEGLDC | 2.904359444 CAMK2 CAMK2 |
| Sqtst1                               | Sequestosome-1;Ubir | 2 T     | 269 GKRRLPTTPPPES | SRLT(0.998)PT(0.0) | 2.889755816 CK1;PKA PU |
| Sqtst1                               | Sequestosome-1;Ubir | 2 T     | 272 SRLTPTTPPPES | SRLT(0.998)PT(0.0) | 2.889755816 ERK/MAPK WW GroupIV |
| Nfatc2                               | Nuclear factor of activ | 1 S   | 238 SCLGRHSPVPRPA | TSLAEDSCLGRHS(1) | 2.888420323 PKA |
| Kiao0323Protein KIAA0323             | Protein KIAA0323 | 1 S      | 214 GSSGLLSPQFGQV | EVGSSGLLS(1)PQF       | 2.851927903 CK1   |
| Cenpe                                | Centromere-associat | 1 S      | 2424 WFFDNRKSPLAP | S(0.817)KS(0.183) | 2.845193046 |
| Rasal3                               | Ras protein activator | 1 S      | 893 SLPKPSPVWQRQ | KPS(1)VPWQR     | 2.840747685 AURORA;CAMK2 |
| Evl                                  | Ena/VASP-like protein | 1 S   | 333 RKPWERSNSVEKP | S(0.983)S(0.017') | 2.822148219 |
| Gene Name | Description | Accession | p-value | GO Term |
|-----------|-------------|-----------|---------|----------|
| Prkaa1    | Protein capicua homo | 2 T | 2.657101103 | PKA/AKT |
| Protein lunapark | Protein kinase substrate CapZIP | 1 S | 2.668944166 | PKA/AAKT |
| Snx17     | Sorting nexin-17 | 2 S | 2.678548113 | WW GroupIV |
| Ipcef1    | Interactor protein for Cytoplasmic dynein 1 | 1 S | 2.678548113 | WW GroupIV |
| Add3      | Gamma-adducin;Add | 1 S | 2.673626803 | CDK1;CDK Polo box |
| Nbn       | Nibrin;Nijmegen bre | 1 T | 2.673626803 | CDK1;CDK Polo box |
| Ubxn7     | Putative uncharacter | 1 S | 2.673626803 | CDK1;CDK Polo box |
| Cic       | Protein capicua homo | 2 S | 2.673626803 | CDK1;CDK Polo box |
| E3 ubiquitin-protein li | E3 ubiquitin-protein li | 1 S | 2.73807568 | CDK1;CDK Polo box |
| Arpc1b    | Actin-related protein | 1 S | 2.73807568 | CDK1;CDK Polo box |
| Nfatc2    | Nuclear factor of activated T-cells, cytoplasmic 2 | 1 S | 2.73807568 | CDK1;CDK Polo box |
| Dync1h1   | Cytoplasmic dynein 1 | 1 T | 2.73807568 | CDK1;CDK Polo box |
| Gtf2f1    | General transcription | 1 S | 2.73807568 | CDK1;CDK Polo box |
| Cic       | Protein capicua homo | 2 S | 2.73807568 | CDK1;CDK Polo box |
| Ubxn7     | Putative uncharacter | 1 S | 2.73807568 | CDK1;CDK Polo box |
| Prkaa1    | Protein capicua homo | 2 S | 2.73807568 | CDK1;CDK Polo box |
| Ccdc52    | Coiled-coil domain-co | 2 S | 2.73807568 | CDK1;CDK Polo box |
| Eml3      | Echinoderm microtub | 1 S | 2.73807568 | CDK1;CDK Polo box |
| Gtse1     | G2 and S phase-expr | 1 S | 2.73807568 | CDK1;CDK Polo box |
| Matr3     | Matrin-3 | 1 S | 2.73807568 | CDK1;CDK Polo box |
| Kifap3    | Kinesin-associated pr | 1 S | 2.73807568 | CDK1;CDK Polo box |
| Myo9b     | Putative uncharacter | 2 S | 2.73807568 | CDK1;CDK Polo box |
| Protein Name | Description/Function | Accession | Score | Pathways/Interactions |
|--------------|----------------------|-----------|-------|----------------------|
| Etoposide-induced protein 2.4; p53-induced gene 8 protein | PELRQKSPLFQFA | 134 | 195 | RAS(0.997)S(0.00): 2.627637491 CAMK2;PK PKA/AKT |
| Kinesin-like protein K | 681 YEPAISPQPKVQA | 681 | 722 | DYEGPAIS(1)PK | CDK1 | CDK1 |
| Coiled-coil domain-co | 1 S | 681 | 722 | GVEWGDGSKTLSE | GSGVEWGDS(1)IK | PLK1 | PLK1 |
| Dock11 | 1 T | 16 | RLSKPGTAEQLR | RLS(0.067)KPGT(0) | CHK1;CK2;PKD |
| BMP2k | 1 S | 908 | S(1)VDFIGTFQPOPI | 2.59551495 CAMK2 CAMK2 |
| NdrG3 | 1 T | 345 | S(0.008)RT(0.048) | 2.59275584 FHA KAPP FHA KAPP |
| Mfap1 | 1 S | 94 | 2.588125679 PKA PKA |
| Dock11 | 1 T | 1237 | GIKREDRSGLIP | RDS(0.996)RGS(0): 2.580645161 CAMK2;PK PKA |
| RASgrp2 | 2 T | 567 | 576 | APSPSPTHTHRA | RAQSVSLEG(0.00) | 2.570561925 |
| Ppm1g | 1 S | 524 | KLEEALSTEGAD | KLEEALS(0.999)T(1) | 2.563182447 |
| Pde3b | 1 S | 574 | LHRSLGVSAAAD | S(0.006)LGS(0.99) | 2.560229397 | CK1 CK1 |
| Lrpm | 1 S | 347 | EGTKPSLRRRS | DAEPQQGEEAVG | 2.552452907 | AURORA;CPKA |
| Ccdc52 | 2 S | 766 | GLNLSSPSVPVE | LVGLNLS(0.007)S(1) | 2.551215654 | NEK6;PoloPolo box |
| Rassf2 | 1 S | 145 | QLMRTRSDGVG | T(0.001)RS(0.999) | 2.540456774 | CAMK2;CK1;CHK1/2 |
| Wipf1 | 1 S | 330 | LPQRLNLSSTAP | NLS(1)LTSSAPPLP5 | 2.53762022 | CAMK2;GSKCAMK2 |
| SH3 domain-contain | 1 S | 480 | THTRGDSPKIDLA | GDS(1)PKIDLAGSA | 2.532286655 | CAMK2;CE CDK1 |
| Mkl1 | 1 S | 349 | APTPSRSLSTSS | S(0.738)LSS(0.231) | 2.53157392 | CK1;GSK3GSK3 |
| Stk17b | 1 S | 12 | FDCRSLGSVLLTT | S(0.27)VS(0.73)GL | 2.513446941 | CAMK2 CAMK2 |
| Foxp1 | 1 S | 469 | PIRRRYSDKYNVP | RYS(1)DKNVPIS. | 2.511426993 | CAMK2;CK-PA |
| Bad | 1 S | 134 | SPPFRGRSAP | S(0.589)RS(0.411) | 2.504194526 | CAMK2 CAMK2 |
| Ppp1r12a; Ppp1r12a protein;MC | 1 S | 909 | LLGRSASYLED | S(0.026)AS(0.973) | 2.492895249 | CAMK2;CK-PA;AKT |
| Matrin-3 | 1 S | 195 | FDDRGPSDLVLD | RDS(0.5)FDDRGPS | 2.480650923 | CAMK2 CAMK2 |
| Tsc22d4 | 1 S | 271 | ASLVHKSPDPSGA | S(1)PDPFGAAAAQSLSLAR | 2.48046328 |
| Gbp11 | 1 S | 441 | LQSRSCLSSPSWR | S(0.003)CS(0.997) | 2.478437593 | CAMK2;CK-PA;AKT |
| NdrG2 | 2 T | 330 | RLSRSTASLTTSA | SRT(1)AS(0.999)LT | 2.472371251 | CAMK2;CK-PA;AKT |
| Id2 | 1 S | 14 | RSVRNKLSDHSL | KNS(0.986)LS(0.0): 2.462447673 | AURORA;CPKA |
| Emg1 | 1 S | 16 | PRERRRSVQEQDV | RF5(1)VEQD | 2.459117177 | AURORA;AURORA-A |
| Bbx | 1 S | 242 | PELRQKSLPLQFA | QKS(1)PLFQFAEISE | 2.442121715 | CAMK2 CAMK2 |
| Rps6 | 2 S | 235 | AKRRRLRALRSL | RLS(0.999)S(0.981) | 2.436647173 | CAMK2;PK PKA |
| Cep55 | 2 S | 426 | KATPKSPLSAAL | AT(0.484)S(0.484) | 2.417678062 | CK1;ERK/WW Group IV |
| Cep55 | 2 S | 428 | TSPKPSAALNDS | AT(0.484)S(0.484) | 2.417678062 |
| Rps10 | 1 S | 146 | AEEGAGATK | KAEAGAGS(0.999). | 2.416100896 K2 K2 |
| Larp4 | 1 S | 380 | FRSSSGSEHSTE | S(0.002)S(0.001) | 2.389600459 | CK1 CK1 |
| Ablim1 | 1 S | 499 | DMIHRTSQQSI | S(0.971)(T(0.026)S | 2.38948626 |
Trp53i11 Putative uncharacteri 1 T 16 MKKHQSQTDLVSRL KHS(0.5)QT(0.5)Dl 2.370960476
Pum2 Pumilio homolog 2 1 S 587 SATRRESLSSTSSD RES(1)LSTSSDLYK 2.370061385 AURORA;PKA/ACT
Spata5 Spermatogenesis-ass 1 S 273 LLDTVQSPDDGS AGVELLVTQ(1)P 2.369836718 CDK1 CDK1
Uba1 Ubiquitin-like modifi 1 S 46 GMAKGNEAGIDE NGS(1)EADIESLY 2.367948455 CHK1 CHK1
Git1 ARF GTPase-activatin 1 T 373 KSLSSPTNLELS S(0.005)LS(0.004) 2.367536342 CK1;PHA2 CK1
Nufip2 Nuclear fragile X men 1 S 1284 TTEAPCPSPGQKP T(0.001)T(0.001)E 2.352885814 ERK/MAPK WW GroupIV
Scrib Protein LAP4;Protein 2 S 1292 GSQQPGSPDELPA T(0.001)T(0.001)E 2.352885814 CK2;ERK/IWW GroupIV
Stmn1 Stathmin;Phosphop 1 S 16 ELEKRGSGQAEFL RAS(1)GQAFLILSI 2.346096096 CHK1;PKA PKD
Mcm2 DNA replication licen 1 S 21 RQQRRISDPILSS RIS(1)DPLSSPGPR 2.332361516 CAMK2;PKA PKA
Dock2 Dedicator of cytokine 1 S 1683 VEEEIPSPGSPLP VEEEIP(1)PGSTLP 2.331654542 ERK/MAPK WW GroupIV
Chd7 Chromodomain-heli 1 S 626 QELLRLNLDVSEQE RNS(1)LDVSQEEK 2.323077925 AURORA-A;AURORA-A
Larp1 La-related protein 1; 1 S 1018 PTTTPESPNPYNRA SLPFPPVE(1)PNYF 2.320185615 CK1;ERK/IWW MAPK
Arhgap1 Rho GTPase activatin 1 S 91 DDSKSSPPEPVTH S(0.13)S(0.092)S( 2.317497103 CK1;Polo I Polo box
Prkaa 5'-AMP-activated prot 2 S 494 TAPQRSGSISSY S(0.536)GT(0.374) 2.314569271 CK1;GSK3 GSK3
Smarca SWI/SNF-related mat 1 S 79 DNERKASLSFCQN KAS(1)LSCFQNQR 2.30888227 AURORA;PKA
Ppp1r10 Serine/threonine-prol 1 S 313 KKKKVLSPTAAKP VLS(1)PTAAPSPFPE 2.302661877 ERK/MAPK ERK/MAPK
Sic4a7 Sodium bicarbonate c 1 S 57 GHVHPFSKSRRE AIVYGVGHVPS(0.9) 2.302343786
S730590 Uncharacterized prot 1 S 861 ALIRHKSHIAEISQ HKS(1)AEISQTLR 2.294104152 ERK/IWW GroupIV
Snx5 Sorting nexin-5 1 S 22 SKLRSVSDLVNDV S(0.26)VS(0.74)VE 2.292789178 CAMK2 CAMK2
Etv3 ETS translocation var 1 S 139 SGVVPQSAPVPVT SSGVVPQS(1)APPV 2.292473808
Fhod1 FH1/FH2 domain-con 1 S 514 LLRTQQRSLPEP K T(0.023)QRS(0.97) 2.288381885
Rad18 Putative uncharacteri 2 S 99 LQFALESPISPVP THLLQFALES(1)PPI 2.286864252 GSK3 GSK3
Rad18 Putative uncharacteri 2 S 103 LESPPISPVSSTS THLLQFALES(1)PPI 2.286864252 CK1;ERK/IWW GroupIV
Traf2 TNF receptor-associat 1 S 5 __MAAASVTSPGS AASS(0.826)VT(0.. 2.276659685
Cc2d1b Coiled-coil and C2 do 1 S 562 HLRAVKSLEAQII S(1)LEAIIQAR 2.274484829
Tcf3 Transcription factor E 1 T 530 RTRTSSTDEVLSS TRT(0.002)S(0.002) 2.272830583
Sptbn1 Spectrin beta chain, t 2 S 2163 RSTSSKSSPVPSP T(0.991)S(0.065)S 2.26988991 CK1 CK1
Sh3bp1 SH3-domain binding 1 S 262 HSOADHPLTATAA DNHS(0.003)QADH 2.268139445
Erf ETS domain-contain 1 T 529 ESGGPLTPRVRSS GDVGPGESGQPLT( 2.263467632 CDK1;CDK WW GroupIV
Lsp1 Lymphocyte-specific 2 S 180 DTVLSSPPLSPT TPSPLAEDTVELS( 2.262341071 GSK3;PocL polo box
Lsp1 Lymphocyte-specific 2 S 184 LSSPLSPTTKLA TPSPLAEDTVELS( 2.262341071 CK1;ERK/IWW GroupIV
Sp110 Sp110 nuclear body 1 S 175 ILDEQPSPSPRAV ATAPPIIEILDEQPS( 2.257336343
Ppp1r8 Nuclear inhibitor of p 1 S 199 KRRKKNRSVTFSE KNS(0.986)RVT(0.1) 2.25677597 CAMK2;PKA/ACT
| Protein Name | Description | Gene ID | Accession Number | Ref (PMID) |
|--------------|-------------|---------|------------------|------------|
| Atxn2l       | Ataxin-2-like protein |         |                  |            |
| Hdgfrp2      | Hepatoma-derived gr |         |                  |            |
| Sytl3        | Synaptotagmin-like p |         |                  |            |
| Gtf2f1       | General transcription |         |                  |            |
| AI41378:Uncharacterized protein |         |         |                  |            |
| Eif2b4       | Translation initiation f |         |                  |            |
| Lsp1         | Lymphocyte-specific |         |                  |            |
| Srrm2        | Srrm2 protein; Serine |         |                  |            |
| Rps5         | 40S ribosomal protein |         |                  |            |
| Dynclh1      | Cytoplasmic dynein 1 |         |                  |            |
| Tcf3         | Transcription factor E |         |                  |            |
| Zfp36l1      | Butyrate response fat |         |                  |            |
| Edc4         | Enhancer of mRNA-dct |         |                  |            |
| Tdp52l2      | Tumor protein D52-ll |         |                  |            |
| Tbc1d10cCarabin;TBC1 domain |         |         |                  |            |
| Lrcl3        | Leucine-rich repeats |         |                  |            |
| Ppp1r8       | Nuclear inhibitor of pr |         |                  |            |
| Zfc3h1       | Zinc finger, C3H1-typ |         |                  |            |
| Huwel1       | E3 ubiquitin-protein li |         |                  |            |
| Fchol1       | FCH domain only protein li |         |                  |            |
| Mltk         | Mitogen-activated prc |         |                  |            |
| Plekha2      | Pleckstrin homology |         |                  |            |
| Slc16a1      | Monocarboxylate tran |         |                  |            |
| Cep55        | Centrosomal protein |         |                  |            |
| Cep55        | Centrosomal protein |         |                  |            |
| Pkfb3        | 6-phosphofructo-2-ki |         |                  |            |
| Tbc1d10cCarabin; TBC1 domain |         |         |                  |            |
| Zc3hc1       | Nuclear-interacting pr |         |                  |            |
| Slc4a7       | Sodium bicarbonate o |         |                  |            |
| Dynclh1 Cytoplasmic dynein 1 |         |         |                  |            |
| Trp53i11     | Putative uncharacter |         |                  |            |
| Ripl6        | 60S ribosomal protein |         |                  |            |
| Zfr          | Zinc finger RNA-bindi |         |                  |            |
| Mll2         | Mll2 protein |         |                  |            |
| Protein Name                  | Identifier | Score | Information                                                                 | E-value | Description                                                                                   |
|----------------------------|------------|-------|----------------------------------------------------------------------------|---------|---------------------------------------------------------------------------------------------|
| Rcsd1                       | Capz-interacting protein | 1 S   | 108 PGASPSPGLKAI LQANLAFDPAALLPC                                         | 0.039   | CK1;ERK/IWW Group IV                                                                       |
| Fbl                         | rRNA 2'-O-methyltrar     | 1 S   | 130 YGEKRVSISEGDD RVS(0.999)IS(0.00)                                       | 0.029   | AURORA;AURORA-A                                                                            |
| Evl                         | Ena/VASP-like proteine   | 1 S   | 335 PWERSNSVEKPVS S(0.023)NS(0.97)                                         | 0.015   | CAMK2 CAMK2                                                                                |
| Pkn2                        | Serine/threonine-prol    | 1 S   | 582 APPRASSLGETE AS(0.003)S(0.997)                                         | 0.006   | CAMK2;CK CAMK2                                                                              |
| Fkbp15                      | FK506-binding proteine   | 1 S   | 452 LRSDKNSLEQLT S(0.267)NS(0.735)                                         | 0.002   | CK1;CK2                                                                                     |
| Snip1                       | Smad nuclear-interac     | 2 S   | 59 AAEPHGSHGRSR RPDPAAAS(0.719)L                                          | 0.002   | CAMK2;GSK PKA AKT                                                                           |
| Bat2l                       | Novel protein (58304)    | 2 S   | 488 PRRIASETHSEG IAS(0.999)ET(0.00)                                        | 0.001   | CAMK2;GSK PKA AKT                                                                           |
| Kif3a                       | Kinesin-like protein K   | 1 S   | 713 MGRRKRSAPETV S(1)AKPETVIDSSLCC                                        | 0.001   | CAMK2;PKA                                                                                   |
| Hps5                        | Herrmansky-Pudlak sy     | 1 S   | 693 GEGRRVSLVTEEA RVS(1)LVTEEAGQ                                          | 0.001   | CAMK2;GSK CAMK2                                                                             |
| Map2k1                      | Dual specificity mitog    | 1 T   | 386 GLNQPSTPTHAAS RSDAEEVFAGWLC                                             | 0.001   | CAMK2;GSK CAMK2                                                                             |
| Pds5b                       | Sister chromatid cohe    | 1 S   | 1358 AQQAEPETSASAV AES(0.996)PET(0.0)                                      | 0.001   | CAMK2;GSK CAMK2                                                                             |
| 5730590                      | Uncharacterized protein  | 1 S   | 1763 GRKRFLSAAEESE FLS(1)AEHEEY                                           | 0.001   | CAMK2;GSK CAMK2                                                                             |
| Med24                       | Mediator of RNA polyi    | 1 S   | 879 KLMLLSSSDDDA LLS(0.822)S(0.089)                                         | 0.001   | CAMK2;GSK CAMK2                                                                             |
| 1810008                      | Uncharacterized protein  | 1 S   | 38 EPALPQPSAGGAV AVEPALQPS(1)PAG                                           | 0.001   | CAMK2;GSK CAMK2                                                                             |
| Stk10                       | Serine/threonine kina    | 1 T   | 950 AEPRPTPSKASN LSEEAEPRPT(0.006)                                         | 0.001   | CAMK2;CL WW Group IV                                                                          |
| Plekha2                     | Pleckstrin homology c    | 1 S   | 314 SFSRSISILTRGS S(0.136)IS(0.744)                                         | 0.001   | CAMK2;CL WW Group IV                                                                          |
| Rcsd1                       | Capz-interacting protein | 1 S   | 105 ALLGAPSPKSPGL LQANLAFDPAALLPC                                         | 0.001   | CAMK2;CL WW Group IV                                                                          |
| Prkaa1                      | 5'-AMP-activated prot     | 2 S   | 496 TPQRSGSISNYRS S(0.002)GT(0.016)                                         | 0.001   | CAMK2;CL WW Group IV                                                                          |
| Cbx5                        | Chromobox protein h      | 1 S   | 93 GNRKKSFSNSAD KSS(1)FSNSADDIK                                            | 0.001   | CAMK2;CL WW Group IV                                                                          |
| Reep4                       | Receptor expression     | 1 S   | 152 GRLRSFSMQDLRS SFS(1)MQDLR                                            | 0.001   | CAMK2;CL WW Group IV                                                                          |
| Lat                         | Linker for activation c  | 1 S   | 199 REYVNVSPEQPQV EYVNS(1)PEQPQV                                          | 0.001   | CAMK2;CL WW Group IV                                                                          |
| Nup133                      | Nuclear pore complex     | 1 S   | 71 RIFPHHSISEVSN IFPHHS(0.985)IS(C)                                        | 0.001   | CAMK2;CL WW Group IV                                                                          |
| Unk                         | RING finger protein u    | 2 S   | 378 RNSSGGLPSHLSL NSGLGS(0.993)PSI                                         | 0.001   | CAMK2;CL WW Group IV                                                                          |
| Unk                         | RING finger protein u    | 2 S   | 385 PSIHCSPPGPPS NSGLGS(0.993)PSI                                         | 0.001   | CAMK2;CL WW Group IV                                                                          |
| Fam102a                     | Protein Fam102A;MFL      | 1 S   | 250 STEHRSRSSSDL S(0.644)S(0.178)                                         | 0.001   | CAMK2;CL WW Group IV                                                                          |
| Sptbn1                      | Spectrin beta chain, l   | 2 S   | 2168 ESSPVPSPTLDRK T(0.032)S(0.016)                                        | 0.001   | CAMK2;CL WW Group IV                                                                          |
| Ccc2d1                      | Coiled-coil and C2 do    | 1 S   | 455 LEPRKGSQDSVA KG(1)EQDSVAATL                                         | 0.001   | CAMK2;CL WW Group IV                                                                          |
| Myo9b                       | Myosin-Ix;Unconver       | 1 S   | 1293 AQDKPESPGSTQ AQDKPES(0.86)PSI                                         | 0.001   | CAMK2;CL WW Group IV                                                                          |
| Elf2b4                      | Translation initiation f | 1 S   | 20 KSSRSLSGSLCAL S(0.267)LS(0.682)                                        | 0.001   | CAMK2;CL WW Group IV                                                                          |
| Rc3h1                       | Roquin;RING finger a     | 2 S   | 770 EERKVISSPPFAP KVIS(1)PPFAPS                                          | 0.001   | CAMK2;CL WW Group IV                                                                          |
| Rc3h1                       | Roquin;RING finger a     | 2 S   | 777 PPPFAPSTLPPA KVIS(1)PPFAPS                                           | 0.001   | CAMK2;CL WW Group IV                                                                          |
| Srrm2                       | Srrm2 protein;Serine     | 2 T   | 1074 SPVTELTARSPVK S(0.012)S(0.035)                                        | 0.001   | CAMK2;CL WW Group IV                                                                          |
| Map3k3                      | Mitogen-activated proc   | 1 S   | 337 PRGRRLSADSENA LRS(1)ADSENTALV                                         | 0.001   | CAMK2;CL WW Group IV                                                                          |
mRNA cap guanine-N7 methyltransferase; mRNA (guanine-N(7))-methyltransferase; RG7MT1; mRNA cap methyltransferase

S

KKLRCDSADLRHD

CK1

TLSNAVSSLASTG

CAMK2; CHK1; CHK1/2; CK1; PKD

GPSPPCSPGHDRE

Ena/VASP-like protein; Ena/vasodilator-stimulated phosphoprotein-like

S

923

LLLRRFSALEHGI

DNA polymerase alpha catalytic subunit

CAMK2; CHK1; CHK1/2; PKA; PKD

AHQQPPSPLPVYS

mRNA-decapping enzyme 1A; Transcription factor SMIF; MAD homolog 4-interacting transcription coactivator

210

CQVAFSYLPQNDDELELK

NEK6

EH domain-binding protein 1-like protein 1; Tangerin; EH domain-binding protein 1-like protein 1; Tangerin; EH domain-binding protein 1-like protein 1; Tangerin

S

S

SH3 domain-containing kinase-binding protein 1; SH3-containing, expressed in tumorigenic astrocytes; Regulator of ubiquitous kinase; SH3-domain kinase binding protein 1

83

1462

ERK/MAPK; WW GroupIV
| Lsp1  | Lymphocyte-specific protein 1 | 1 T | 193 TKLADRTELSNRS | LADRT(0.601)ES(0) | 1.805608219 FHA2 Rad! FHA2 Rad53p |
| Ubr4  | E3 ubiquitin-protein ligase | 1 T | 360 SAQQVRTGSTSSK | T(0.772)GS(0.191) | 1.803393987 |
| Rps6  | 40S ribosomal protein S6k | 2 S | 236 KRRRLSLRASTS | LS(0.004)S(0.996) | 1.796816042 CAMK2;GSK3/AKT |
| Numb  | Protein numb homolog | 1 T | 438 QAGHRRTPSEADR | RT(0.5)PS(0.5)EAC | 1.795654166 CK2;PKA |
| Hnrrph1 | Heterogeneous nuclear ribonucleoprotein F | 1 T | 107 GPNPSDTANDGFV | HTGPN(0.004)PD | 1.794752145 CK1;FHA1 FHA1 Rad53p |
| Fbl   | rRNA 2'-O-methyltransferase | 1 S | 132 EKRVSISEGDGIK | RV5(0.5)IS(0.5)EG | 1.78801316 |
| Wiz   | Protein Wiz; Widely-in | 2 S | 1045 SQPLSSLPRTPS | NPEKSPQLS(0.00) | 1.787597648 CDK1;NEK CDK1 |
| Wiz   | Protein Wiz; Widely-in | 2 T | 1049 SLSPRPTSPKQSP | NPEKDS(0.001)PQI | 1.787597648 PKA; PKA |
| Wiz   | Protein Wiz; Widely-in | 2 S | 1050 LSPRPSTPKAQWP | NPEKDS(0.001)PQI | 1.787597648 CAMK2;CI WW GroupIV |
| Akna  | AT-hook-containing tr | 1 S | 1352 PRTRRHSQVLGLN | T(0.013)RHS(0.98) | 1.781515 AURORA;FAURORA |
| Lsp1  | Lymphocyte-specific protein 1 | 1 S | 243 KLSRQPSIELPSM | LSRPS(1)IEELPSM | 1.7781255 CAMK2;CI CHK1/2 |
| Gigyf1| PERQ amino acid-rich tr | 1 S | 155 PREIRQRSQSWDDDR | S(0.87)QS(0.13)W | 1.767346506 |
| Wrnip1| ATPase WRNIP1; Werr | 1 S | 78 RRLSESSLKQPA | RLS(0.097)ES(0.01) | 1.76509279 CK1 CK1 |
|       |                | 2 S | 233 KLDQCVSAPPSPR | LDQPS(1)APPS(1) | 1.764321883 GSK3 GSK3 |
|       |                | 2 S | 237 PVSAPSPRDSM | LDQPS(1)APPS(1) | 1.764321883 CDK1; CI WW GroupIV |
| Xpr1  | Xenotropic and polytr | 1 S | 667 KYNQISLRRPR | YNQIS(1)LR | 1.76369536 |
| Hnrrph1 | Heterogeneous nuclear ribonucleoprotein | 1 S | 104 KHTGPNPSDTAND | HTGPN(1)PD | 1.746633364 CK1;ERK1/WW GroupIV |
| Pikfyve| FYVE finger-containin | 1 S | 307 ARNRSASITNLSL | S(0.001)AS(0.999) | 1.73909702 CAMK2;PKP/AKT |
| Stat3 | Signal transducer and activator of transcription | 1 S | 727 TIDLPSRTPRLDS | FICVPPTCSNTIDL | 1.736774462 CDK1;ERK WW GroupIV |
| Chd1  | Chromodomain-helicase | 1 S | 1678 ASSGPRLPDQRS | AAS(0.018)S(0.01) | 1.734394783 CK1;ERK1/WW GroupIV |
| C130039 Putative uncharacterized | 1 S | 624 NITPYQSHLRSVP | AITFPYPPVYS(0.00) | 1.732952084 CK1;GSK3 GSK3 |
| Sac1  | Sac1; Sac2; Sacs1 | 2 S | 2513 ALERAYSNICFT | YAS(1)NICFTALGTE | 1.730403184 CAMK2;CI CHK1/2 |
| Sptbn1 | Spectrin beta chain, light | 2 S | 2164 TSSKEPSVPSPT | T(0.032)S(0.016)S | 1.7279812 CK1;GSK3 Polo box |
| Hist1h1e Histone H1.4; H1 VAR | 1 T | 4 MSFETAPAPA | S(0.067)ET(0.933) | 1.727951341 FHA KAPP FHA KAPP |
| Cd69  | Early activation antigen | 1 T | 25 GQKQDHGSIHF | DHGT(0.866)S(0.1) | 1.726549146 |
| 1700081 | MCG141096, isoform | 1 S | 1075 EAEVAPSPVPP | EAEVAP(0.5)S(0.5) | 1.72360302 |
| 1700081 | MCG141096, isoform | 1 S | 1076 EAEVAPSPVPPV | EAEVAP(0.5)S(0.0) | 1.72360302 ERK/MAPK WW GroupIV |
| Limd2 | LIM domain-containing | 1 S | 28 SSTVQRSKFSLR | S(0.919)KS(0.081) | 1.72022941 CK1;GSK3 GSK3 |
| Lnp   | Protein lunapark; Proto | 1 S | 411 PVLRSSPVPNLE | SPVRPS(1)VPNLE | 1.719690456 CAMK2; CI CAMK2 |
| Vim   | Vimentin; Vimentin | 1 T | 37 VTTSTRTYSLGS | T(0.676)Y(0.279) | 1.718390212 CK1;FHA2 CK1 |
| Edc4  | Enhancer of mRNA-degradation | 1 S | 3 MASCAD | AS(0.866)CAS(0.1) | 1.718360684 |
| Map4k4 | MKI67A0687 protein; H | 1 T | 575 PRVPRRTTSSRP | T(0.979)T(0.011)S | 1.717770334 |
| Myo5a | Myosin-Va; Dilute myosin | 1 T | 1648 TGLRKRTSSIADE | T(0.713)S(0.143)S | 1.715089356 CAMK2; Fh PKA |
| Ints12 | Integrator complex subunit 1; Intensin | 1 S | 377 GLSRVSCDNVSK | SVS(1)CDNVS | 1.714795253 CAMK2; CI CHK1/2 |
Hectd1  Hectd1 protein; Putative uncharacterized protein  S  1777 VLKRQFSALVPAF  RQFS(1)ALVPADFI  1.61394448 CAMK2; CK1
Hist1h1d  Histone H1.3; H1 VAR  T  4 ___MSETAPAAPA  S(0.264)ET(0.736)  1.613684044 FHA KAPP FHA KAPP
Osbpl3  MKIAA0704 protein; C  T  513 ARSKRTSLPAGP  T(0.9)S(0.099)LPA  1.61121405 PKA  PKA
Gigyf2  PERQ amino acid-rich  S  161 EMHRSQSWERGDF  S(0.021)QS(0.979)  1.595685267 CAMK2; CK1
Kiaa1272250 kDa substrate of  2 S  819 MLVRSSAPELE  RS(0.15)S(0.871)  1.594514869 CAMK2; CK1
Rps3  40S ribosomal protein  T  220 KDELTPPTISEQ  DEILPT(0.948)T(0)  1.594387755 FHA2 Rad; FHA2 Rad53p
Srrm2  Srrm2 protein; Serine  2 S  775 SLSRLSGSSPC  SLRSLRS(1)LS(1)GS  1.594006535 CAMK2; CK1/2; AKT
Lrch4  Leucine-rich repeat a  S  313 SGSKRWSGNESTD  RWS(1)GNESTDDF  1.590052631 CK1; CK2; PKA
Hectd1  Hectd1 protein  1 S  357 GLRLDSSGERSH  RLDS(1)SGER  1.580403003 CAMK2; CK1/2
Ece2  Endothelin-converting enzyme  1 S  9 SPRTPVSPPELPE  T(0.002)PVS(0.998)  1.580073872 CK2; ERK/WW Group IV
Digap5  Disks large-associated protein  1 S  328 YQVAPLSPRANA  SYQVAPls(1)Pr  1.57942951 CDK1; ERK/WW Group IV
Nadk  NAD kinase; Poly(P)/A  1 S  64 EFRRTRSLHGCP  T(0.063)RS(0.936)  1.575845441 CAMK2 CAMK2
EnsA  Alpha-endosulfine/AR  1 S  120 LPQRKSSLVTSL  KSS(0.935)LVT(0.1)  1.572920599 AURORA; CPKA
Cdc21t  PITSLRE serine/threonine kinase  1 S  47 RDSKRDSLEEGELER  RDS(1)LEEGELR  1.565459697 AURORA; AURORA-A
Git1  ARF GTPase-activating protein  S  371 QGKSLSSPDTNLDE  S(0.001)LS(0.003)  1.562133875 CK1; Polo I/ polo box
Abcf1  ATP-binding cassette  2 S  103 ERLKQLSVPSDE  QLS(1)VPAS(1)DEEE  1.561207125 GSK3 GSK3
Sp110  Sp110 nuclear body  S  196 DEQPSPSRAPV  ATAPQIEILDEQPFS  1.557268551 CDK1 CDK1
A430078 Putative uncharacterized protein  1 S  133 GSCRRRLSLAVTS  RLS(1)LDASTVDAK  1.554098157 AURORA; AURORA-A
Myosb2  Probable E3 ubiquitin  1 S  2943 PRERKSRSDYTL  S(0.342)KS(0.658)  1.553687678 CAMK2; PKPKA/AKT
Mark3  MAP/microtubule affinity  1 T  507 GMTRNRTVCXER  RNT(1)YVCXER  1.55260216 CAMK2; CK1
Ser bp  Plasminogen activator  1 S  203 SGDGRSSFSHYES  HS(0.002)GS(0.00)  1.551229349 CK1; PKA PKA
Srrm2  Srrm2 protein; Serine  2 S  1647 PPRRPRSSREPPELPE  RS(0.005)S(0.995)  1.54686219 CAMK2; PKPK/AKT
Gapvd1  GPase-activating protein  1 S  906 PERLVRSQSDIV  S(0.996)RS(0.003)  1.54547562 NEK6 NEK6
Mdc1  Mediator of DNA damage  2 S  1012 NVRPRSSRTPSFQ  S(0.945)S(0.887)R  1.543614383 PKA PKA
2310047 Putative uncharacterized protein  1 S  43 PSVRTLSSGEEAA  T(0.001)LS(0.999)  1.540404818 CAMK2; CK1 CAMK2
Pnkp  Binfunctional polynucleotide  1 S  143 KVVRKSSLWESL  KS(0.001)S(0.999)  1.536958819 AURORA; CPKA/AKT
Sh2d2a  SH2 domain-containing protein  1 S  347 ILRCWRSRIPSC  KCWS(0.995)RPIS(1)  1.538958741 CK1; GSK PKD
Zc3hav1  Zinc finger CCCH-type  2 T  349 DSSTSRTSAAFP  NRS(0.001)DS(0.0)  1.537704515 FHA KAPP FHA KAPP
Myo5a  Myosin-5a; Dilute myc  3 S  1650 LRKRTSSIADEGT  T(0.001)S(0.054)S  1.536712051 CAMK2; PKPK/AKT
Ccn1l  Cyclin-L1; Cyclin A1  2 T  336 GTPALSTLGGFP  GLNLDGT(0.001)P  1.534542553
Chd8  Chromodomain-helic  1 T  2039 VARSRLTSDQYEV  S(0.237)RTL(0.686)  1.532848953 CK1; FHA1 PKA
Nab2  NGFI-A-binding protein  1 S  162 RFSFKSPLEGE  S(0.001)FS(0.001)  1.529917537 CK1; CK2; WW Group IV
Phf3  Phf3 protein  1 S  122 DREVNDRSRPRK  DREVEDNS(0.6)RVS  1.526368007 PLK1 PLK1
Hs6st1  Heparan-sulfate 6-O-
Protein PAT1 homolog 1; PAT1-like protein 1
CK1; FHA KAPP

S(0.999) LT(0.001) TPAR
AKEPT PSIAS DIS

Sodium/hydrogen exchanger 1; Na(+)/H(+) exchanger 1; Solute carrier family 9 member 1
AREGS(1) FEAR

ERK/MAPK; GSK3

PLK1

Eukaryotic translation initiation factor 4 gamma 1; Putative uncharacterized protein; Eukaryotic translation initiation factor 4 gamma 1; Eif4g1 protein
CAMK2; CHK1; PKD

PKA

RT(0.099) S(0.901) LPAPGPNTSSVSLWSILR
CAMK2; CHK1; CHK1/2; PKD

1.470977612

Cysteine and histidine-rich domain-containing protein 1; CHORD domain-containing protein 1

1.511213202

Formin-like protein 1; Formin-related protein; Formin-like protein 1; Formin-related protein

1.511213202

E3 ubiquitin-protein ligase CBL-B; Signal transduction protein CBL-B; SH3-binding protein CBL-B; Casitas B-lineage lymphoma proto-oncogene b

1.510277438

1.506568639

1.505645942

1.503623733

1.498239569

1.493651979

Cyclin-L1; Cyclin Ania

1.486900407

CDK; CDK2

1.486834084

1.486834084

1.486834084

1.479771523

1.476036547

1.475296166

1.471648688

ERK; WW Group IV

1.470977612

1.470977612

1.470328766

1.46902091

1.469507715

1.469057715

1.469032768

1.462715385

1.461048448
A kinase anchor protein 10, mitochondrial
Protein kinase A-anchoring protein 10
Dual specificity A kinase-anchoring protein 2
S
LS(0.146)T(0.031)T(0.031)PS(0.766)PT(0.066)NS(0.96)LHEDGVDDFRR

Lymphocyte-specific protein 1;Protein pp52;52 kDa phosphoprotein;Lymphocyte-specific antigen WP34;S37 protein;Lymphocyte specific 1;Lymphocyte specific 1;Lymphocyte specific 1
S
166
T
RAS(0.999)S(0.001)CSLAVISPFLVEK

Leucine carboxyl methyltransferase 1;Leucine carboxyl methyltransferase 1, isoform CRA_b;Lcmt1 protein;Leucine carboxyl methyltransferase 1, isoform CRA_a
247
AYS(0.936)FCGT(0.064)VEYMAPEVVNR

S
632
CK1
32
MKIAA1784 protein

Lymphocyte-specific protein 1;Protein pp52;52 kDa phosphoprotein;Lymphocyte-specific antigen WP34;S37 protein;Lymphocyte specific 1;Lymphocyte specific 1;Lymphocyte specific 1
102
CK1;CK2

Mediator of RNA polymerase II transcription subunit 1;Mediator complex subunit 1;Peroxisome proliferator-activated receptor gamma coactivator 1;Thyroid hormone receptor-associated protein complex 220 kDa component;Thyroid receptor-interacting protein 2
CAMK2
FAGTAHSVPS(1)PK

S
32
MKIAA1784 protein

Lymphocyte-specific protein 1;Protein pp52;52 kDa phosphoprotein;Lymphocyte-specific antigen WP34;S37 protein;Lymphocyte specific 1;Lymphocyte specific 1;Lymphocyte specific 1
102
CK1;CK2

Receptor-interacting serine/threonine-protein kinase 2
RNA-binding protein 25;RNA-binding motif protein 25
CDK1;CDK2;ERK/MAPK
S
15
PARSQSSDTEQPS

EvARTGSHQIP T(0.75)GS(0.25)H 1.269003325
255
381
LLRS(0.371)S(0.63) 1.267893142

2
1.267121986 CAMK2;ChPKD

Ddx24
ATP-dependent RNA helicase DDX24
Protein kinase A-anchoring protein 10
1 S
257 EVARTGSHQIPTD T(0.257)GS(0.743) 1.267121986

2
1.265726654 CAMK1;CDK1;CDK2

Rps6ka1
Putative uncharacterized protein
Btd12
MKIAA1784 protein
2 T
932 SPPIDLTQSVPEP GILIS(0.001)PAK(0.999) 1.263759178

2
1.263759178 CDK1;ERK WW Group IV

Carhsp1
Calcium-regulated helicase domain-containing protein
Psma5
Proteasome subunit alpha-5
4 S
16 RGVNTFSPEGRFL GVTNS(1)PEGR 1.254756968

Lsp1
Lymphocyte-specific protein 1;Protein pp52;52 kDa phosphoprotein;Lymphocyte-specific antigen WP34;S37 protein;Lymphocyte specific 1;Lymphocyte specific 1;Lymphocyte specific 1
4 T
166 IRHQVRTPSPLAL HQVRT(1)PS(1)PLA 1.261447637

Lsp1
Lymphocyte-specific protein 1;Protein pp52;52 kDa phosphoprotein;Lymphocyte-specific antigen WP34;S37 protein;Lymphocyte specific 1;Lymphocyte specific 1;Lymphocyte specific 1
4 T
168 HQVRTPSPLAED HQVRT(1)PS(1)PLA 1.261447637

Ripk2
Receptor-interacting serine/threonine kinase 2;Receptor-interacting serine/threonine-protein kinase 2
Eif2c2
Protein argonaute-2;Argonaute2;Protein slicer;Piwi/argonaute family protein meIF2C2;Eukaryotic translation initiation factor 2C 2;Argonaute 2 protein
2 T
102 VSVCAETFNPDEE RVS(0.5)VCAET(0.5) 1.256086515

Prkar2a
Protein kinase, cAMP-dependent regulatory subunit a
Lrrc47
Leucine-rich repeat-containing protein 47
Atp2a3
Sarcoplasmic/endoplasmic reticulum Ca(2+)-ATPase 3;Calcium pump 3;SR Ca(2+)-ATPase 3;ATPase, Ca++ transporting, ubiquitous
Pias1
E3 SUMO-protein ligase PIAS1;Protein inhibitor of activated STAT protein 1;DEAD/H box-binding protein 1;Putative uncharacterized protein
Fam122a
Protein FAM122A

Fam122a
Protein FAM122A

Lcm1
Leucine carboxyl methyltransferase 1
Pa1
PAXIP1-associated protein 1
Raver1
Ribonucleoprotein PTB-binding 1
Wdr44
WD repeat-containing protein 44
Eif4b
Eukaryotic translation initiation factor 4B
Agap2
Arf-GAP, GTPase, ANP
Traf1
TNF receptor-associated factor-1
Rbm25
RNA-binding protein 25
Med1
Mediator of RNA polymerase II complex subunit Med1
Ripk2
Receptor-interacting serine/threonine kinase 2;Receptor-interacting serine/threonine-protein kinase 2
Sh3bp1
SH3-domain binding protein 1
Tox4
Thyroid hormone receptor-associated protein complex 220 kDa component;Thyroid receptor-interacting protein 2
Map4
Microtubule-associated protein 4
Fam122a
Protein FAM122A
Ubap2l
Ubiquitin-associated protein 2-like

1.242081729 CAMK2;ChPKA/AKT

1.241696157 CAMK2;ChPKA/AKT

1.241696157 CAMK2;ChPKA/AKT

1.241696157 CAMK2;ChPKA/AKT

1.241696157 CAMK2;ChPKA/AKT

1.241696157 CAMK2;ChPKA/AKT
| Gene Symbol | Description | Entrez ID | Gene Description | Accession Number | Parent/Related Proteins |
|-------------|-------------|-----------|------------------|------------------|------------------------|
| Larp5       | La-related protein 5; La ribonucleoprotein domain family member 5 | 500 | 500 | 500 | KNS(1)FGYR, CAMK2;PK PKA/AKT |
| Pml         | Probable transcription factor | 528 | STFKATSPPPHLGD | AT(0.128)S(0.718) | CAMK2;PK PKA/AKT |
| Cd69        | Early activation antigen | 26 | QDKHGTSHFEKH | DHGT(0.5)S(0.5)I | CAMK2;PK PKA/AKT |
| Psmd2       | 26S proteasome non- | 361 | NNRFGGSQVQDS | FGGGS(0.996)GS(0.128) | CAMK2;PK PKA/AKT |
| Mbd3        | Methyl-CpG-binding c | 85 | QVRVYDSNQVKG | VRVYD(0.998)S(0.1) | CAMK2;PK PKA/AKT |
| Pola2       | DNA polymerase alpha | 141 | RSAVARSPQLLS | SVARS(1)PR | CAMK2;PK PKA/AKT |
| Lbr         | Lamin-B receptor; Integrator | 101 | PKGRSSVSAHE | GS(0.228)RRS(0.781) | CAMK2;PK PKA/AKT |
| Plekha2     | Pleckstrin homolog c | 182 | HAFLRRSSQYPI | S(0.776)QR(0.223) | CAMK2;PK PKA/AKT |
| Prkcd       | Protein kinase C delta | 671 | KPQLSFDKLNID | SPDSYNSFDPEFLNI | CAMK2;PK PKA/AKT |
| Ubap2i      | Ubiquitin-associated | 630 | TRYPRESSIPSQPQ | RPMY(0.378)S(0.6) | CAMK2;PK PKA/AKT |
| Cdk4        | Cell division protein k | 403 | YLHKEESEDAE___ | ALQHYSYLHEE(1) | CAMK2;PK PKA/AKT |
| Mcm2        | DNA replication licensing | 25 | RISPPLSSPPGRS | ISDPLT(0.33)S(0.6) | CAMK2;PK PKA/AKT |
| Prpf40a     | Pre-mRNA-processing | 36 | ERRLSGSLCSSSS | RLS(0.068)GS(0.9) | CAMK2;PK PKA/AKT |
| Crkrs       | Cell division cycle 2-r | 392 | VRLPLNSLGAEL | DNA helicase B | CAMK2;PK PKA/AKT |
| 6230416.1MKIAA1574 protein | | 500 | YKTIAEEDSEDSP | TIAD(1)EEDSEPLS | CAMK2;PK PKA/AKT |
| Aebp2       | Zinc finger protein AE | 21 | SRLSPLSGPSPGP | LSPLS(1)PSPGPA | CAMK2;PK PKA/AKT |
| Srrm1       | Serine/arginine repeat | 463 | KVELSEDEKGS | KVELS(0.5)ES(0.5) | CAMK2;PK PKA/AKT |
| Otd5        | OTU domain containi | 64 | GARPPRASSPPPQ | AS(1)PQPQGLPG | CAMK2;PK PKA/AKT |
| Srrm1       | Serine/arginine repeat | 810 | KPPAPPSPVQSQS | KPPAPPSPVQSQS | CAMK2;PK PKA/AKT |
| Smn1        | Survival motor neuron | 28 | TQSSDSDIWWDT | RGT(0.03)GS(0.9) | CAMK2;PK PKA/AKT |
| Crkrs       | Cell division cycle 2-r | 382 | SRPRLNSLGAEL | DNA helicase B | CAMK2;PK PKA/AKT |
| Slc7a6os     | Protein SLC7A6OS; Scl7a6os protein | 155 | ATDRCRTSTDVP | KT(0.5)S(0.5)PDPD | CAMK2;PK PKA/AKT |
| Tcof1       | Treacle protein; Treacle | 852 | VSNVRNPAPV | NS(0.5)S(0.5)PAVP | CAMK2;PK PKA/AKT |
| Tcof1       | Treacle protein; Treacle | 853 | VSNVRNPAPV | NS(0.5)S(0.5)PAVP | CAMK2;PK PKA/AKT |
| Phf6        | Phf finger protein 6; | 155 | HELPSPKTKK | TAHNSEADLEESFNI | CAMK2;PK PKA/AKT |
| Plekha5     | MKIAA1686 protein; Plekha5 | 1026 | SEPESSTIAVY | T(0.027)KS(0.105) | CAMK2;PK PKA/AKT |
| Terf2       | Telomeric repeat-binc | 367 | NALAPPSPAHHHK | DLVLANLAPS(0.0) | CAMK2;PK PKA/AKT |
| Sep-01      | Septin-1; Differentiati | 250 | RYSSWGTVEWEN | RYS(0.152)WGT(0) | CAMK2;PK PKA/AKT |
| Helb        | DNA helicase B | 946 | FASQPPSPPRVGR | LGSCAPSTFGASQ | CAMK2;PK PKA/AKT |
| Filip1l     | Filamin A-interacting | 789 | VNGRRISDPQVFS | RIS(1)DPQVFSK | CAMK2;PK PKA/AKT |
| Smarca5     | SWI/SNF-related mat | 115 | AQKTPTSPKMK | TPT(0.038)S(0.962) | CAMK2;PK PKA/AKT |
| Smarcc1     | SWI/SNF complex sul | 329 | KRPSSPSPPPPPP | RKPS(1)PS(1)PPP | CAMK2;PK PKA/AKT |
| Lats1       | Large tumor suppressor | 463 | IPVRNSNFNPLG | S(0.027)NS(0.973) | CAMK2;PK PKA/AKT |
| Smap2       | Stromal membrane-a | 219 | LLASVPSSPSSVR | DLDDLAS(0.001)VF | CAMK2;PK PKA/AKT |

Note: The table entries include gene symbols, descriptions, Entrez IDs, gene descriptions, accessions, and related protein descriptions.
| Gene Symbol | Description                                      | Protein Type | Accession Number | Function                                      | Interactions                        | References |
|-------------|--------------------------------------------------|--------------|------------------|-----------------------------------------------|-------------------------------------|------------|
| Eps15       | Epidermal growth factor                         | 1            | S 324 KNITGSSPVADFS NITGSS(1)PVADFS |                                   | 1.217329909 Polo box Polo box |            |
| Lbr         | Lamin-B receptor;Int-                          | 1            | S 103 GSRRSVSASHEGD SVS(1)ASHEGDKV |                                   | 1.215997665 CAMK2;PK PAKA         |            |
|             |                                                  | 1            | S 83 SLRHASAAGFPL HAS(1)AAGFPLSGT |                                   | 1.215923737 CAMK2;Ch CHK1/2       |            |
| RP23-26:    | Uncharacterized protein                        | 1            | S 563 KVDHRASGAEED KVDHRAS(1)GAEEI |                                   | 1.214638827 CK2;PKA PKA           |            |
| Ube2o       | Ubiquitin-conjugating                            | 2            | T 954 AKKFFSTVRKEMA FFS(0.149)T(0.851) |                                   | 1.214461811                       |            |
| Ube2o       | Ubiquitin-conjugating                            | 2            | S 965 MALLATSLPDGIM FFS(0.149)T(0.851) |                                   | 1.214461811 NEK6 NEK6             |            |
| Zc3h14      | Zinc finger CCCH domain                         | 1            | S 515 QDPKAPSKFIVT DLVQPDKPAS(1)PK |                                   | 1.214122675 CDK1;ERK WW GroupIV  |            |
| Thrap3      | Thyroid hormone receptor                        | 2            | S 257 LKSPLQSVVRRR ERS(1)PALKS(0.37) |                                   | 1.213665878 CK1 CK1              |            |
| Snw1        | SNW domain-containing                           | 2            | S 14 PAPTQLSQDLEA ALTSFLPAPT(0.004) |                                   | 1.213341908                         |            |
| Plectin-1;Plectin-6;Pli |                      | 1            | S 4391 GGFRSRRSSVGSS S(0.769)S(0.116)S |                                   | 1.21228285 CAMK2;PK PAKA         |            |
| Nfic        | Nuclear factor 1 C-typ                          | 1            | S 323 IEGGISSPVKTE NWTEDIEGGIS(0.0) |                                   | 1.211445739 CDK1;CDk polo box     |            |
| Arid4a      | Arid4a protein                                   | 1            | S 867 KILQQQSPEKSLR ILGQQS(1)PEKK |                                   | 1.210917633 CDK1;CDk CK2         |            |
| Cblb        | E3 ubiquitin-protein li                         | 2            | S 484 VTSPPSSPLAQQR QNS(0.003)PVT(0) |                                   | 1.210697725 CK1;Polo I polo box   |            |
| Tnks1bp1    | 182 kDa tankyrase-1                             | 1            | S 1657 LRSRNRSAEEGEV NRS(1)AAEEVTE |                                   | 1.20932145 CAMK2;CK PAKA         |            |
| Efr3a       | Protein EFR3 homolog                            | 1            | S 692 TDEDRLLRSKIV LTVPYVQVTDEDRL |                                   | 1.208079637 GSK3;PKA PKA         |            |
| Arhgef6     | Rac/Cdc42 guanine n                              | 1            | T 713 KLIIEETNCGQT KDS(0.197)VPQVL |                                   | 1.207802404                        |            |
| Sfrs16      | Splicing factor, arginine                        | 1            | S 285 LRGRKSSPSYAR KIS(1)PPSYAR |                                   | 1.207190024 CAMK2;PK PAKA         |            |
| Xrcc1       | DNA repair protein XI                            | 2            | S 446 QAAGPSPPPRPT T(0.001)QAAGPS(C) |                                   | 1.207006064 CDK1;CDk WW GroupIV  |            |
| Aff1        | AF4/FMR2 family, me                             | 3            | S 191 APERSLPLSSL KLS(0.998)PLIS(0) |                                   | 1.203789529 CAMK2;GSPKA           |            |
| Aff1        | AF4/FMR2 family, me                             | 3            | S 199 LISSLSPVPPS KLS(0.998)PLIS(0) |                                   | 1.203789529 CK1 CK1              |            |
| Aff1        | AF4/FMR2 family, me                             | 3            | S 205 SPVPPLPVHSRL KLS(0.998)PLIS(0) |                                   | 1.203789529 ERK/MAPK WW GroupIV  |            |
| Cot1        | Coactosin-like proteine                         | 1            | S 141 ANYDAQSE       KAGGANYDAQ5(1) |                                   | 1.203152259                        |            |
| Ppp2r5d     | Protein phosphatase :                           | 1            | S 82 KERRQSSFPNFLQ QQ5(1)FPNFLNQ |                                   | 1.202457824 CAMK2 CAMK2           |            |
| Myo9b       | Myosin-IXb;Unconver                            | 1            | S 1676 YTGRKSESALGAP RK5(1)ELGAEPGHF |                                   | 1.201576468 CAMK2;PK PAKA        |            |
| Wdr26       | WD repeat-containing                            | 1            | S 101 KKRRMLQDSDV RLS(1)QSDVDR |                                   | 1.200710821 PKA PKA              |            |
| Gapvd1      | GTPase-activating prc                           | 1            | S 908 RLVRSSDIDSV SRS(0.999)S(0.00) |                                   | 1.199558652 CAMK2;Ch CHK1/2       |            |
| 6330571iUncharacterized protein |                      | 1            | S 115 PRENNPSPHNSS ENPS(0.993)PHS(0) |                                   | 1.199501008 ERK/MAPK WW GroupIV  |            |
| Tnks1bp1    | 182 kDa tankyrase-1                             | 1            | S 668 ERTRLASESANDD TRLAS(0.999)ES(0) |                                   | 1.199170174 CAMK2;PK PAKA AKT    |            |
| Mibp        | MAP3K12-binding inh                             | 1            | S 22 SLEQCSSPLTRE SLEQCS(0.023)S(0) |                                   | 1.198738927 Polo box Polo box     |            |
| Slc9a1      | Sodium/hydrogen exchanger                       | 1            | S 697 PAHKLDSPLSRA ITNYLT(0.001)VPAI |                                   | 1.197834316 GSK3 GSK3            |            |
| Clnsn       | Claspin                                         | 1            | S 1265 FVFHTLSPTKAEMA NVPFHTLS(1)PTKA |                                   | 1.196143633 CDK1;CDk CK2         |            |
| Bclaf1      | Bcl-2-associated tran                           | 1            | S 267 SSHAQHSSG KTPA |                                   | 1.19598627 CDK1;CDk CK2         |            |
| Tmpo        | Putative uncharacteri                           | 1            | S 66 KGPDDFSSDEER GPPDFS(0.974)S(0) |                                   | 1.194828781 CK2 CK2              |            |
| Aak1        | AP2-associated protein                          | 2            | S 621 GSLTPSSPQTOR VGLS(0.029)PSS(i) |                                   | 1.194800229                        |            |
| Protein Name | Description | Protein Name | Description |
|--------------|-------------|--------------|-------------|
| Signaling threshold-regulating transmembrane adapter 1 | 166 TRRGRASFDPQAY | GRAS(1)FPDQAY | 1.19464322 PKA PKA |
| Suppression-inducing transmembrane adapter 1 | 541 KPRLEVSPEAQP K | LEVS(1)PEAQP | 1.194044108 NEK6 NEK6 |
| SHP2-interacting transmembrane adapter protein 4 | 704 ARPRSNsAWQIYL | S(0.406)NS(0.594) | 1.192733865 CAMK2;PKPA;AKT |
| Acin1 | 1003 RTAQVPSPPR | TAQVPS(1)PPRGK | 1.189216188 CDK1;CDKERK;MAPK |
| Tu52 | 495 Q SSRKLSPETPRN | KLS(1)PETPR | 1.187817741 CAMK2;PKPA |
| Irf2bp2 | 443 AQPAPROPSLSDSL | AQPAPRO(0.766)PS | 1.186929532 GSK3 GSK3 |
| Ablim1 | 477 PRTLSTPSAEQGY | T(0.209)LS(0.395) | 1.185887934 FHA KAPP NEK6 |
| Zc3h18 | 912 DRKRPLOPSQKGS | KRPLS(0.996)PQS | 1.185016649 CAMK2;ERPA;AKT |
| Rnf213 | 12 PIDAAASVPT | KVPIDAAAS(1)PV | 1.182997953 CDK1;CDKCDK2 |
| Prkca | 226 NPWQNESFTFKL | STLNQWENES(1)F | 1.182704135 PKD |
| Srrm2 | 1214 LSQVLPSLSEPHK | SEQPLSVLPS(0.5) | 1.182648186 |
| Arhgef6 | 248 PSERPLPSKAIKG | EIKPSPERPS(1)PK | 1.182396481 CAMK2;CI WW GroupIV |
| SSpag9 | 728 EGSKQRSASQSSL | S(0.565)AS(0.434) | 1.181628047 CK1;GSK3GSK3 |
| Spag9 | 733 RSASQSDLDQ | S(0.546)AS(0.372) | 1.181628047 CK1 CK1 |
| Ebag9 | 36 GRGRKLSGDQITL | KLS(1)GDQITLP | 1.181279089 CAMK2;PKPKA;AKT |
| Svil | 960 VVLRGRELGNP | RGS(1)LELGNPSAA | 1.181014019 AUROR A;AUROR A |
| Pum1 | 710 SGSRDSSLGSD | RDS(1)LTGSSDLKY | 1.180303102 AUROR A;PKPA;AKT |
| Plekhf2 | 20 RISIVESCFGAAG | RIS(0.5)VES(0.5) | 1.17959304 CK1 CK1 |
| Trmt1 | 121 KIAVDLSDQEEET | IAVDLS(0.997)QDE | 1.177981176 CK2 CK2 |
| Nfatc3 | 415 HTPIFRSSLPL | T(0.575)S(0.804)S | 1.176802862 FHA2 RadFHA2 Rad53p |
| Rnmt | 100 LERGVEDQES | SKGLRESV(1)EDE | 1.176595169 CK2 CK2 |
| Fkbp15 | 1199 GNSRRLSPTDPE | RLS(0.999)LT(0.00) | 1.176484429 AUROR A;PKPA;AKT |
| Pkn1 | 541 VATGTFSPNASP | RLPSAVATG(0.00) | 1.17408988 CK1;GSK3GSK3 |
| Pkn1 | 545 TFSPNASPGAER | RLPSAVATG(0.00) | 1.17408988 CK1 CK1 |
| Eif4g1 | 1211 GLRKAASLTED | AAS(1)LTEDR | 1.173447236 CHK1;CK2PKD |
| Zc3hav1 | 344 SRRNDSSTRTS | NRS(0.012)DS(0.4) | 1.17307575 CAMK2;PKPKA;AKT |
| Zc3hav1 | 345 RRRNDSSTRTS | NRS(0.012)DS(0.4) | 1.17307575 CK1 CK1 |
| Tbrg1 | 17 PRTPLSKARMKR | SVLSGLASEPRT(0) | 1.172566631 CK1 CK1 |
| Srrm1 | 816 SPVQSQPSSTNSW | KPPAPPS(1)PVQTS | 1.171357955 |
| Arhgef2 | 885 LDPRRSLPAGDA | S(1)LPAGDAYSFL | 1.170699727 AUROR A;AUROR A |
| Xrcc1 | 452 SPPRRPTPKETKA | TQAAGPS(0.385)S | 1.170562689 CAMK2;CI WW GroupIV |
| Lsm14a | 183 LAQGRSSPQLDPLD | S(0.309)S(0.691)P | 1.169727454 PKA;Polo l Polo box |
| Rrad | 26 RDRRGGTPGPWA | RGS(0.903)T(0.09) | 1.168688498 CAMK2;PKPA |
| Braf | 135 SRNPNPKSPQKPIVR | NNPKS(1)PQKIPVR | 1.16862021 CDK1;CDK WW GroupIV |
| Protein Name | Description | Accession | E-value | p-value |
|--------------|-------------|-----------|---------|---------|
| Unc119       | Unc-119 homolog (C.) | 37 PGAEASGSESEP SAEPTRPGAEAE(S) | 1.168197005 CK2; GSK3 CK2 |
| Unc119       | Unc-119 homolog (C.) | 39 AEAEGSESEP EPEP SAEPTRPGAEAE(S) | 1.168197005 CK2; GSK3 CK2 |
| Nfatc3       | Nuclear factor of acti | 417 PIFRTSSLPLDLW T(0.239)S(0.142)S | 1.167965054 CAMK2; Ch-PKD |
| Sep-07       | Putative uncharacteri | 228 IYEFPETDEEEN IYEPETE(D)DDEEEN | 1.167235258 CK2; GSK3 CK2 |
| Nbeal2       | Neurobeachin-like prc | 2810 RRRSRRQVSWSDE SQ1(QVS)SSGETEY | 1.16603118 CAMK2; Ch-PKA |
| Brca1        | Breast cancer 1; Brea | 686 IRKRASDAFPEE RAS(1)DAFPEEK | 1.165908826 CAMK2; PKA/AKT |
| Smek1        | Serine/threonine-pro | 728 NLSGRQPSFKLS TNL(S(0.001)G)QRSi | 1.165885164 CK1; PKA PKA |
| Tmpo         | Putative uncharacteri | 67 GPPDFSDEEREPP GPPDFS(S)S(0.5)S(0.5) | 1.165718549 CK2; GSK3 CK2 |
| Elf4ebp1     | Eukaryotic translato | 36 PGDSTTYQPGLTL VALGDGVQLPDPYD | 1.165270284 |
| Bcor         | BCL-6 corepressor; BC | 1143 DRKRKLSGDSTHT KLS(0.826)GDS(0.1) | 1.16522955 CAMK2; PKP KA/AKT |
| Sf3b1        | Splicing factor 3B su | 227 AETPGHTSRLWD KLSSWDQAET(1)P | 1.164385102 FHA2; FHA2 FHA2 FHA2 |
| Uvrag        | Putative uncharacteri | 549 VAPLSSLDTSLD KVAPLSS(1)LDTSI | 1.162858306 GSK3; NEK NEK6 |
| Sfors2       | Putative uncharacteri | 26 NLTTRSPDTLR VRNLT(0.029)YRT( | 1.162790698 CK1; PKA PKA |
| Zbbt7a       | Zinc finger and BTB d | 537 EDEEEAPDGSGS HFKDEEDEEEAE( | 1.161372743 GSK3 |
| Arhgef6      | Rac/Cdc42 guanine n | 696 QGTRKDSVPQVLL KDS(1)VPQVLLPEE | 1.161350307 AURORA; CAMK2 |
| Wdr77        | Methylosome protein | 5 MRKDTTPPVL P(1)PPPVPPAAF | 1.160590793 CAMK2; PKP KA |
| Mark3        | MAP/microtubub affi | 419 QKQRRYSNHGPA RY(1)S(1)DHAGPA | 1.159931323 CAMK2; PKP KA |
| Top2a        | DNA topoisomerase 2 | 1521 IKYLESSDDDDD KPIKYLEES(1)DDDI | 1.159164938 NEK NEK6 |
| Arhgef6      | Rac/Cdc42 guanine n | 243 VREIKPSRPLS EIKPS(0.921)ERPL | 1.158855977 |
| Bin1         | Myc box-dependent-ii | 296 PEGKNKSPSPPD GNKS(0.5)S(0.5) | 1.158788834 |
| Bfox6        | F-box only protein 6 | 280 RASDSTHEGGFW RRAS(0.041)DS(0. | 1.157648584 |
| Prpf40a      | Pre-mRNA-processin | 34 DGERRLSGSNLCS QD(1)GSNLCSSS | 1.1574342 CAMK2; PKP KA/AKT |
| Srrm1        | Serine/arginine repet | 387 RKTRRLSPASSP PRS(1)PS(0.016)A | 1.1574342 CAMK2; PKP KA/AKT |
| Smg1         | Serine/threonine-pro | 3567 QKNLATSADTPPS N(1)LAT(0.085)S(0.91) | 1.156885202 NEK6 |
| Smg1         | Serine/threonine-pro | 3570 LATSADTPPST N(1)LAT(0.085)S(0.91) | 1.156885202 CK1; FHA I CK1 |
| Rbm10        | RNA-binding protein | 797 HRAHLSENELEAH AHLS(1)ENEALEAl | 1.156523952 CK2; GSK3 CK2 |
| Zc3h13       | Putative uncharacteri | 109 RNTEEPSPVRK ENTEEPS(0.5)S(0.5) | 1.15568191 CK1 |
| Zc3h13       | Putative uncharacteri | 110 NTEEPSPVRK ENTEEPS(0.5)S(0.5) | 1.15568191 CDK1; CDK W/ Group IV |
| Agap2        | Arf-GAP, GTPase, ANK | 802 NLARALSTDCTPS ALS(0.922)T(0.076) | 1.155414852 CAMK2; Ch-HK1/2 |
| Hdgf         | Hepatoma-derived gr | 132 KGSAEGSSDEEGK KGS(0.006)AEGS( | 1.15401453 CK1; CK2 |
| Hdgf         | Hepatoma-derived gr | 133 GSAEGSSDEEGK KGS(0.006)AEGS( | 1.15401453 CK2; GSK3 CK2 |
| Srrm2        | Srrm2 protein; Serine | 1153 DFKFSPTQDRPES DKFS(0.003)PT(0. | 1.153934918 |
| Znf828       | Zinc finger protein | 434 LKKPSSSPDLWKV KPS(0.107)S(0.027) | 1.153721907 Polo box Polo box |
| Sec16a       | SEC16 homolog A (S. | 2053 EMVPRGSVPVRSHE GS(0.846)PVRHS(C | 1.153602123 CDK1; CDK CDK2 |
Putative uncharacterized protein; Proteasome (Prosome, macropain) 26S subunit, non-ATPase, 9; Putative uncharacterized protein; 26S proteasome non-ATPase regulatory subunit 9; 26S proteasome regulatory subunit p27

EESRPYTNKVITL

ASAAEGS(0.018)EAS(0.982)PPS(0.001)LR

ERLLRSSADSLPG

Histone deacetylase 7; HD7a; Histone deacetylase 7; HD7a; Histone deacetylase 7; HD7a; Histone deacetylase 7; HD7a; Histone deacetylase 7; HD7a; Histone deacetylase 7A, promoter 1; Histone deacetylase 7A, promoter 3

S(0.737)AT(0.263)PPPAEPASLPQEPPKPR

CK2; T

AEGSEASPPSLRS

CAMK2

371

Basic leucine zipper transcriptional factor ATF-like 3

AGS(1)LCSPLDCPAQLPSR

DAAVDTSSEITTK

Autophagy-related protein 16-2; APG16-like 2; Autophagy-related protein 16-2; APG16-like 2

S

FHA2 Rad53p

MGYGDRTSTFCGT

CAMK2; CHK1; CHK1/2; PKD

Inhibitor of Bruton tyrosine kinase; Inhibitor of Bruton tyrosine kinase

31

1.130671732

WKTPPTSPESWKS

CK2; NEK6

SVDAPGNQPQS(1)PKDDDR

RSSRRSSSELSPE

CAMK2; PKA/AKT

Catechol O-methyltransferase; Catechol O-methyltransferase

1216

KYNLDASEEEDSN

Kbtbd11 protein; Kelch repeat and BTB domain-containing protein 11

YNLDAS(1)EEEDSNKK

1.127166979

ASAVS(1)PEK

KYVIS(1)DEEEEEDD

105

EELEEKSATPPPA

225

VGRAGDSDEESRT

1.130416106

HLDRS(0.982)PES(0.018)ERPR

SSVSSGS(0.001)WKT(0.77)PPT(0.345)S(0.883)PES(0.001)WK

PKA

SKNISLSSEEEAE

T(0.012)AS(0.968)ET(0.02)RS(0.977)EGS(0.023)EYEEIPK

659

LYSSEESRPYT(1)NK

CDK1; CDK2; GSK3; Polo box

MRERSKTEEDILR

CK1; PKA

SGARSPSPGRREE

RNA-binding protein 10; RNA-binding motif protein 10; RNA-binding protein 10; RNA-binding motif protein 10

LHGAQTSDEERFL

CAMK2

Splicing factor 3B subunit 1; Pre-mRNA-splicing factor SF3b 155 kDa subunit; Spliceosome-associated protein 155

NEK6

S(0.027)AS(0.972)ATSLTLSR

CK2; NEK6; PKA/CDK

S(0.022)KT(0.978)EEDILR

9AGDS(0.993)DEES(0.003)RT(0.003)DDK

NEK6

NIS(0.001)LS(0.999)S(1)EEEAEGLAGHPR

Phosphoinositide 3-kinase regulatory subunit 5; PI3-kinase p101 subunit; PtdIns-3-kinase p101; p101-PI3K; Phosphatidylinositol-4,5-bisphosphate 3-kinase regulatory subunit

CK1; ERK/MAPK; WW GroupIV

Ras GTPase-activating protein-binding protein 2; G3BP-2; GAP SH3 domain-binding protein 2

PLRRAGSLCSPLD

RS(0.034)S(0.964)S(0.001)ELSPEVVEK

40S ribosomal protein S5; 40S ribosomal protein S5, N-terminally processed

CHK1; PKD

CAMK2; CDK1; CDK2

QKESRKSKSPPKV

Large proline-rich protein BAT2; HLA-B-associated transcript 2

CK2

1

S

S(0.505)KS(0.458)PPKVPIVIQDDS(0.02)LPT(0.017)GPPPQIR

S

223

1.134 Hartmann et al.

S

225

1.134 Hartmann et al.

1.127599116

HKKYVISDEEEEE

482

CAMK2; PKA/AKT

375

1

Prothymosin alpha; Thymosin alpha

Srrm2 protein; Serine/arginine repetitive matrix protein 2; Serine/arginine repetitive matrix protein 2; Serine/arginine repetitive matrix protein 2

SSVSSGS(0.001)WKT(0.77)PPT(0.345)S(0.883)PES(0.001)WK

1.118530698

LLRS(0.082)S(0.918)ADS(1)LPGELR

CK2; GSK3

RRLASNSPVLPQA

331

655

CAMK2

1.126544775

SPRDLQSPDFTAG

24

1046

T(0.516)S(0.231)T(0.231)FCGT(0.021)PEFLAPEVLTDTSYTR

RRRHRHSPTGPPG

Putative uncharacterized protein; Serine/threonine-protein kinase N1; Protein kinase C-like 1; Protein-kinase C-related kinase 1; Protein kinase C-like PKN; Serine-threonine protein kinase N

TEWEAATPAVAET(1)PDIK

RPFRSASATSLTL

SWDQAETPGHTPS

482

CAMK2; PKA/AKT

375

1

Prothymosin alpha; Thymosin alpha

Srrm2 protein; Serine/arginine repetitive matrix protein 2; Serine/arginine repetitive matrix protein 2; Serine/arginine repetitive matrix protein 2

SSVSSGS(0.001)WKT(0.77)PPT(0.345)S(0.883)PES(0.001)WK

1.118530698

LLRS(0.082)S(0.918)ADS(1)LPGELR

CK2; GSK3

RRLASNSPVLPQA

331

655

CAMK2

1.126544775

SPRDLQSPDFTAG

24
| Gene Symbol | Protein Name | Type | Accession | Description | Score | Functional Domain |
|-------------|--------------|------|-----------|-------------|-------|------------------|
| Tc1f1       | Treacle protein; Treacle | 1  | S         | 169 ANTVLASETEEEG KS(0.016)AEPLANT | 1.100206839 | CK1;CK2;CK2 |
| Hmgn2       | Hemogen; Hemopoiet | 1  | S         | 124 ALPLVPSPTKAVP ERVQEVLVSAEETE | 1.099311831 | CDK1;CDK ERK/MAPK |
| Cenpe1      | Centromere-associated | 1  | S         | 815 QLSRSGDSGQGQA RGS(1)DGQGQALE | 1.09720104 | CAMK2;CK-CH1/2 |
| Mtmr12      | Myotubulin-related | 1  | S         | 564 KHRQRQLPLTQGS QLS(1)LPLTQSK | 1.094463111 | CAMK2;CAMK2 |
| Ppfa1       | Ppfa1 protein; Ppfa1 | 2  | S         | 242 KRSSDGSLHEDL RSS(0.059)DG5S(0.059) | 1.093888445 | CK1;PLK1;PLK1 |
| Ppfa1       | Ppfa1 protein; Ppfa1 | 2  | S         | 244 SDDSGSHLDAK RSS(0.059)DG5S(0.059) | 1.093888445 | |
| Ctr9        | RNA polymerase-associ | 1  | T         | 925 EFWNNTDDDDLPV KGGEFDEVNDT(1) | 1.093708986 | FHA1 Rad1; FHA1 Rad53p |
| Bcl2l13      | Bcl-2-like protein 13; | 1  | S         | 387 AGSRKKSHTGEEA KKS(0.097)HT(0.016) | 1.093099264 | CAMK2;CK-PKA |
| Fam21       | Protein FAM21; Protein FAM21 | 1  | S         | 533 TQKLGSDEEDSE GLFS(1)DEEDSDL | 1.092299292 | CK2;CK2 |
| Pcnt        | Pericentrin | 1  | S         | 1437 VHHRRNSEIDELK RNS(1)EIDELK | 1.091297999 | CAMK2;CK-PKA |
| Tc1f1       | Treacle protein; Treacle | 1  | S         | 1191 SQKRKLSGDLEAG RKLS(1)GDLEAGAF | 1.090013298 | CAMK2;PKA;PKA |
| Srm2        | Srm2 protein; Serine | 1  | S         | 2054 TRNHSRTPPVA RHS(0.002)GS(0.8) | 1.089214561 | |
| Uimc1       | BRCA1-A complex sul | 1  | S         | 379 TKDFQKSPIKLK DFQKS(1)PIK | 1.088802752 | CDK1;CDK CDK2 |
| Ncor1       | Nucleoporin receptor core | 1  | S         | 2135 RPGPVSPLVLS VS(1)PENLVDK | 1.087181048 | PKA;PKA |
| Irf2bp2     | Putative uncharacter | 1  | S         | 536 ARKRKPSPEPEG KPKS(1)PEPEEGVG | 1.086921079 | CAMK2;PK-PKA;AKT |
| Irf2bp1     | Interferon regulatory | 1  | S         | 436 AEALGHSFKDPGG NVAEALGHS(1)PKC | 1.086909265 | CDK1;NEK CDK1 |
| Larp5       | La-related protein 5; La-related protein 5 | 1  | S         | 721 QPGRRASPAAGK KAS(1)PAPAAGK | 1.086814763 | CAMK2;PKPKA |
| Bat2        | Large proline-rich prc | 2  | S         | 1087 TASETRSESegye T(0.012)AS(0.968) | 1.08662581 | CK1;CK1 |
| BC005621    | Novel protein (BC005 | 1  | S         | 261 KEPEPSPPRNRK VGDTEKPEPERS(1) | 1.086531357 | |
| Arid1a      | AR rich interactive do | 1  | T         | 1874 PYVPCPTPRKHL IELPLSPRYPCPT(1) | 1.086283498 | CDK1;CDK CDK2 |
| Sacmarc4    | Sarcomeric uncharacter | 1  | S         | 695 KIPDPDSSDVSE KIPDPD(1)DDVSE | 1.085293192 | GSK3;GSK3 |
| Plekha5     | MKI6A1686 protein; P | 1  | T         | 1027 TPESTSIASVYT T(0.057)KS(0.158) | 1.084751646 | FHA KAP FHA KAP |
| Abi1        | Abl interactor 1; Abl | 1  | S         | 183 PTQKPPSPVSGR T(0.057)NPPT(0.2C) | 1.084571572 | ERK/MAPK WW Group IV |
| Ranbp3      | Ran-binding protein 3 | 1  | S         | 40 PEAEGDSHDHEN G SAGS(0.001)S(0.0) | 1.084163622 | CK2;CK2 |
| Stk11p      | Serine/threonine kinase | 1  | S         | 388 VRVRRASISPEDS RA(1)ISEPS(TP)D | 1.084046059 | AURORA;PKA;AKT |
| Casc3       | Cancer susceptibility | 1  | S         | 262 RKPRFGSSQRPDDR FGS(0.832)S(0.16) | 1.083952089 | CAMK2;CAMK2 |
| Sfrs6       | Putative uncharacter | 1  | S         | 303 SQSRSHPLPAPP S(0.004)HS(0.996) | 1.083775875 | CAMK2;CK-CAMK2 |
| Araf1       | A-Raf proto-oncogene | 1  | S         | 157 RQGYHSIQDLSQ QYH5(1)IQDLSG | 1.082860484 | |
| 111003711110037F02Rik | prote | 1  | S         | 157 RQGYHSIQDLSQ QYH5(1)IQDLSG | 1.082860484 | |
| Sgpp1       | Sphingosine-1-phosph | 1  | S         | 101 GSQRNRSLTGEEG RNS(1)LTEGEGLV | 1.080882432 | AURORA;PKA;AKT |
| Bat2f1      | Large proline-rich prc | 1  | S         | 761 PRERSDSGGSSSE ERSDS(1)GGSSSEF | 1.07927257 | CAMK2;F IF box bTrCP |
| Kif21b      | Kinesin-like protein K | 1  | S         | 1198 KVSRTVSLTRGS TVS(1)LPR | 1.079225979 | CAMK2;CK-PKD |
| Smg9        | Protein SMG9; Protein | 1  | S         | 7 MSEGHSQPGLYG S(0.024)E(0.003) | 1.079051298 | CK1; CK1 |
| Znr2f       | E3 ubiquitin-protein ligase | 1  | S         | 18 GRTRAYSGDLP S AYS(1)GSDLPSGTG | 1.078818478 | CAMK2;CK-PKA;AKT |
| Pr Pfam | Description                                                                 | Accession          | Description                                                                 | Accession          |
|---------|-------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------|--------------------|
| Wapal   | Wings apart-like protein homolog                                              | 1 S                | Zinc finger CCCH domain protein                                                | 1 S                |
| Zc3h11a | Zinc finger CCCH domain protein                                                | 1 S                | Ubiquitin carboxyl-terminal cytoplasm protein                                  | 1 S                |
| Cdc21l  | PITSLRE serine/threonine protein                                               | 1 S                | Dioxin-inducible factor 2                                                      | 1 S                |
| Usp15   | Ubiquitin carboxyl-terminal cytoplasm protein                                  | 1 S                | DNA-binding protein SATB1                                                       | 1 S                |
| Smarcc2 | SWI/SNF complex subunit                                                       | 1 S                | Putative GTP-binding protein Parf                                                | 1 S                |
| Setd1a  | Heterogenous nuclear 4                                                       | 1 S                | RasGAP-binding protein 1; Ras-interacting protein 1; Dinitrophenyl S-glutathione ATPase; Putative uncharacterized protein | 1 S                |
| Sp100   | Nuclear autoantigen 1                                                         | 1 T                | DNA-binding protein SATB1                                                       | 1 S                |
| Hnrnpu  | Heterogenous nuclear 4                                                       | 1 S                | Putative GTP-binding protein Parf                                                | 1 S                |
| Srrm2   | Srrm2 protein; Serine/arginine repeat protein                                  | 1 S                | RNA-binding protein 33; RNA-binding motif protein 33; Proline-rich protein 8  | 1 S                |
| Parf    | Putative GTP-binding protein Parf                                              | 2 S                | RNA-binding protein 33; RNA-binding motif protein 33; Proline-rich protein 8  | 1 S                |
| Fam54b  | Protein Fam54B                                                                | 1 S                | PKA/AKT                                                                       | 1 S                |
| Ralb1   | RalA-binding protein                                                          | 1 S                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Eif4enf1| Eukaryotic translation factor                                                  | 1 S                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Znf592  | Zinc finger protein 54                                                         | 1 S                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Thumpd1 | THUMP domain-containing protein                                                | 1 S                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Rbbp8   | Rbbp8 protein                                                                  | 1 S                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Rbm33   | RNA-binding protein :                                                         | 1 S                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Ep400   | E1A-binding protein p                                                         | 1 S                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Dck     | Deoxyxytidine kinase                                                          | 1 S                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Srrm1   | Serine/arginine repeat protein                                                 | 2 S                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| UPF0404 | Protein C1                                                                   | 1 S                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Protein KIAA1967 homolog |                                       | 1 T                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Srrm2   | Srrm2 protein; Serine/arginine repeat protein                                  | 1 T                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Rps3    | 4OS ribosomal protein                                                          | 1 T                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Satb1   | DNA-binding protein :                                                         | 1 S                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| U2af2   | Splicing factor U2AF 2                                                        | 1 S                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Toe1    | Target of EGR1 protein                                                         | 1 S                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Acin1   | Apoptotic chromatin protein                                                   | 1 S                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Eth1    | Protein ETH1, mitochondrii                                                   | 1 S                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Trim56  | Tripartite motif-conta                                                         | 1 S                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Bat2    | Large proline-rich prc                                                         | 2 T                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Aarsd1  | Alanyl-tRNA syntheta                                                          | 1 S                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Etv6    | Transcription factor E                                                        | 2 S                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Prpf4b  | PRP4 pre-mRNA processing factor                                               | 2 S                | CAMK2; CHK1; CHK1/2; PKD                                                        | 1 S                |
| Gene                  | Function                                                                 | Start | Description                                                                 | End   | EC Number  |
|-----------------------|---------------------------------------------------------------------------|-------|-----------------------------------------------------------------------------|-------|------------|
| Srrm1                 | Serine/arginine repeat                                                     | 1     | Serine/arginine repeat                                                      | 461   | 1.049306933|
| Sdccag3               | Serologically defined                                                     | 1     | Serologically defined                                                       | 16    | 1.03705311  |
| Tgs1                  | Trimethylguanosine s                                                      | 1     | Trimethylguanosine s                                                       | 431   | 1.06377286  |
| Tcof1                 | Treacle protein;Treacl                                                    | 1     | Treacle protein;Treacle                                                     | 794   | 1.062180018 |
| Rbbp6                 | Retinoblastoma-bindi                                                     | 1     | Retinoblastoma-bindi                                                       | 8179  | 1.06179656  |
| Sfrs11                | Putative uncharacterer                                                   | 1     | Putative uncharacterer                                                      | 462   | 1.06153470  |
| Matr3                 | Matrin-3                                                                 | 1     | Matrin-3                                                                   | 598   | 1.061469711 |
| Lsm14a                | Protein Lsm14 homol                                                       | 1     | Protein Lsm14 homol                                                        | 227   | 1.061323258 |
| Sfrs2ip               | MKIAA3013 protein                                                        | 1     | MKIAA3013 protein                                                          | 525   | 1.061289467 |
| Srrm2                 | Srrm2 protein;Serine                                                      | 1     | Srrm2 protein;Serine                                                       | 1216  | 1.060591598 |
| Ncor2                 | Nuclear receptor core                                                    | 2     | Nuclear receptor core                                                      | 149   | 1.059984524 |
| Ncor2                 | Nuclear receptor core                                                    | 2     | Nuclear receptor core                                                      | 152   | 1.059984524 |
| Eif3j                 | Eukaryotic translator                                                    | 1     | Eukaryotic translator                                                      | 16    | 1.059883413 |
| Eif3j                 | Eukaryotic translator                                                    | 1     | Eukaryotic translator                                                      | 18    | 1.059883413 |
| Stk10                 | Serine/threonine kina                                                    | 1     | Serine/threonine kina                                                      | 185   | 1.058167466 |
| Lsm14a                | Protein Lsm14 homol                                                       | 1     | Protein Lsm14 homol                                                        | 182   | 1.058066701 |
| 1110037/1110037F02Rik proto | 1110037/1110037F02Rik protein                                            | 1     | 1110037/1110037F02Rik protein                                             | 1628  | 1.057977148 |
| Eif4g1                | Eukaryotic translator                                                    | 1     | Eukaryotic translator                                                      | 1189  | 1.05770858  |
| Ubxn7                 | Ubx domain-containini                                                    | 1     | Ubx domain-containini                                                     | 364   | 1.056847846 |
| Poldip3               | Polymerase delta-inte                                                    | 1     | Polymerase delta-inte                                                      | 127   | 1.056300834 |
| Crtc3                 | CRE-regulated trans                                                      | 1     | CRE-regulated trans                                                       | 434   | 1.055709806 |
| Lrrfip1               | Leucine-rich repeat fl                                                    | 1     | Leucine-rich repeat fl                                                     | 547   | 1.05496993  |
| Chd7                  | Chromodomains-helic           | 1     | Chromodomains-helic                                                       | 2548  | 1.052288201 |
| Rrp15                 | RRP15-like protein;Ri                                                      | 1     | RRP15-like protein;Ri                                                      | 19    | 1.052066785 |
| Cdk7                  | Cdk7 division protein k                                                   | 1     | Cdk7 division protein k                                                   | 164   | 1.051292564 |
| Pogz                  | Pogo transposable ele                                                    | 1     | Pogo transposable ele                                                     | 421   | 1.051204154 |
| Lig1                  | DNA ligase 1;DNA ligase                                                   | 1     | DNA ligase 1;DNA ligase                                                   | 65    | 1.050530518 |
| Srrm1                 | Serine/arginine repeat                                                    | 1     | Serine/arginine repeat                                                      | 389   | 1.050221597 |
| Stxbp5                | Syntaxin-binding prot                                                   | 2     | Syntaxin-binding prote                                                   | 783   | 1.050166451 |
| Stxbp5                | Syntaxin-binding prot                                                   | 2     | Syntaxin-binding prot                                                   | 786   | 1.050166451 |
| Ripk2                 | Receptor-interacting                                                    | 1     | Receptor-interacting                                                      | 414   | 1.049923881 |
| Eif4b                 | Eukaryotic translator                                                    | 1     | Eukaryotic translator                                                      | 497   | 1.049857744 |
| Pogz                  | Pogo transposable ele                                                    | 1     | Pogo transposable ele                                                     | 422   | 1.049604299 |
| Uqcrcl                | Cytochrome b-c1 con                                                       | 1     | Cytochrome b-c1 con                                                       | 214   | 1.049306933 |

### Additional Information

- **GSK3**: A protein involved in cellular signaling pathways and apoptosis.
- **ERK/MAPK**: Mitogen-activated protein kinase ERK, a protein involved in cell growth, differentiation, and survival.
- **WW Group IV**: WW domain proteins, involved in cellular signaling.
- **NIMA**: Nuclear Mitotic Apparatus, a protein involved in cell division and DNA repair.
- **Nuclear receptor corepressor**: A protein involved in transcriptional regulation.
- **Silencing mediator of retinoic acid and thyroid hormone receptor**: A protein involved in gene silencing.
- **T3 receptor-associating factor**: A protein involved in thyroid hormone signaling.
- **SHELD**: A protein involved in DNA repair.
- **CAMK2**: Calcium/calmodulin-dependent protein kinase.
- **PKA/AKT**: Protein kinase A and Protein Kinase B/AKT.
- **GSK3**: Glycogen synthase kinase 3, a serine/threonine kinase.
- **Retinoblastoma-binding protein 6**: A protein involved in cell cycle regulation.
- **Serologically defined colon cancer antigen 3 homolog**: A protein involved in cancer biology.
- **Cell division protein kinase 7**: A protein involved in cell division and DNA repair.
- **Protein LSM14 homolog A**: A protein involved in RNA processing.
- **RBLPPTSQKAIDN**: A peptide sequence.
- **CHD7**: Chromodomain-helic domain-containing protein 7.
- **Eukaryotic translation initiation factor 4B**: A protein involved in translation initiation.
- **Camk2**: Calcium/calmodulin-dependent protein kinase B.
- **Eukaryotic translation initiation factor 3 subunit J**: A protein involved in translation initiation.
- **Cytochrome b-c1 complex subunit 1**: A protein involved in electron transport.
- **DNA ligase 1**: A protein involved in DNA replication.
- **Pogo transposable element with ZNF domain**: A protein involved in transposable element-mediated transcriptional regulation.
Eukaryotic translation initiation factor 4B
Nuclear ubiquitous casein and cyclin-dependent kinases substrate;JC7
Na(+) / H(+) exchange regulatory cofactor NHE-RF1; Ezrin-radixin-moesin-binding phosphoprotein 50; Regulatory cofactor of Na(+) / H(+) exchanger; Sodium-hydrogen exchanger regulatory factor 1; Solute carrier family 9 isoform A3 regulatory factor 1

Zinc finger CCCH domain-containing protein 18; Nuclear protein NHN1
CK1
RRGTGQSDDSDIW
NKKS(1)PEIHR
PRDVRDTTLEPYA
Eukaryotic translation initiation factor 4E-binding protein 2; Phosphorylated heat- and acid-stable protein regulated by insulin 2
CAMK2; PKA; PKA/AKT
DVRDT(0.5)T(0.5)LEPYADPYYDYEIER
PKA

CK2; PLK; PLK1
CAMK2; PLK1

S

Eukaryotic translation initiation factor 4E-binding protein 2; Phosphorylated heat- and acid-stable protein regulated by insulin 2
1.017459607
S

TGDLGIPPNPEDRS(1)PS(1)PEPIYNSEGKR
95
CK2
S

SRRLPRSPSPYSR
Putative uncharacterized protein; Putative uncharacterized protein
Survival motor neuron protein
46
1.01521812
NEK6
AAETPAVASCWSGPQVS(1)PEHK
S

S

ERK/MAPK; NEK6; WW Group IV

Mediator of DNA damage checkpoint protein 1
79
CK1; PKA
CAMK2; CK1; PKA/AKT
RDVRDTTLEPYAD
GSLSRSSSPVTEL
ERK/MAPK; NEK6; WW Group IV

Chromobox protein homolog 3; Heterochromatin protein 1 homolog gamma; Modifier 2 protein; M32; Chromobox homolog 3 (Drosophila HP1 gamma)
Putative uncharacterized protein
NEK6; PKA
S(0.022)HS(0.978)LPNSLDYAQASER
691
KRPNEDSDEDEEK
1.016756141

Cleavage stimulation factor 77 kDa subunit; CF-1 77 kDa subunit
CK1; NEK6
RGTGQS(1)DDSDIWDDTALIK
1.023394805
1.022212682
1.016466762
SHSAEDSEDEKDD
ALARSASSDTEE
TKRKSLSDSESDD
1
T
181
T(0.721)S(0.139)S(0.139)KHKEEVYENVHSK
VLLAADSEEEGDF
303
Putative uncharacterized protein; Zinc finger protein ubi-d4; Requiem; Apoptosis response zinc finger protein; D4, zinc and double PHD fingers family 2
SVRSPASRMAATR
S

Cell division cycle 2-like protein kinase 5; CDC2-related protein kinase 5; Cell division cycle 2-like protein kinase 5; CDC2-related protein kinase 5
KDDS(0.001)HS(0.999)AEDS(1)EDEKDDHK
383
CAMK2; CHK1; CHK1/2; GSK3; PKD

Srrm2 protein
SFTFGQSPVKRIR
CK2; PKA
LLRS(0.001)S(0.999)ADSLPGPISR
CK2
DVRDT(0.5)T(0.5)LEPYADPYYDYEIER
CDK1; CDK2; Polo box
359
1.018744906
TESSPRSPVCSLR
14-3-3 binding; CAMK2; GSK3
Nuclear receptor coactivator 5; Coactivator independent of AF-2; MKIAA1637 protein
IINDS(1)DS(0.999)ES(0.001)EETVQVK
S

Membrane-associated progesterone receptor component 1
ERLLRSSADSLPG
PQDYCTTPGGTLF
PPRELSTPERGEE
VLLAADS(1)EEEGDFPSGR
S

AAKNKKSPEIHRR
S

Cdc2l5
Cdc2l5
Zc3h18
Zc3h18
Pgrmc1
Nucks1
Uqcrc1
Srbd1
Smn1
Cbx3
Clasp1
Cdk4
Srb1d
Ugcrcl
Nucks1
Pgrmc1
Zc3h18
Zc3h18
Cdc2l5

1.024086515 CAMK2; GS CAMK2
1.02406554 CK1; ERK/I WW Group IV
1.023709103 14-3-3 bir 14-3-3 bindin
1.023394805 CAMK2; CK1/2
1.022384332
1.022212682 CK2; GSK3 CK2
1.01909745
1.001805414
1.001805414
1.001805414
1.017583849
1.001749607 CK2 CK2
1.001749607 NEK6; PKA PKA
1.0016466762
1.00164104
1.001635312 CK1; NEK6
1.0016012355 CK2; GSK3 CK2
1.001535212
1.001521812 CK1; CKD CK2
1.0015073847 CAMK2; PKA AKT
1.0015042936 CK1; CK2 CK2
1.0014754311 CK2 CK2
1.0014497164 CK2; GSK3 CK2
1.0014497164 CAMK2; PL PKL
1.001363386 ERK/MAPK WW Group IV
Hdac1  Histone deacetylase 1  1  S  409  KRISCICSDKRIA  ISICS(0.936)S(0.0)  1.014332518  CK1  CK1
Smarcad SWI/SNF-related mat  2  S  124  DTIVIIVSEPSEDE  DTIVIIVS(0.976)EP!  1.014301653
Smarcad SWI/SNF-realted mat  2  S  127  IIVSEPSEDEESH  DTIVIIVS(0.976)EP!  1.014301653  CK1;CK2  CK2
Prp4b  PRP4 pre-mRNA proc  1  S  278  IKDRKKSPIVNER  KKS(1)PIVNER  1.014291365  CAMK2;PKPA
Nfx1  Transcriptional repress  2  S  49  IGRNNYSSSPPCH  NYS(1)S(0.002)S(0.002)  1.014106217  CAMK2  CAMK2
Serbp1 Plasminogen activato  1  S  234  KDELTESPKYIQ  GGGSNHWGTVKC  1.013880017  CDK1;NEKCDK1
Aibi3  ABI gene family mem  1  S  343  CVIRYSDGWCEG  RYS(1)DGWCEGVS  1.013756678  CAMK2;CK1;PAK
Fbxo6  F-box only protein 6;  1  S  276  GRRRASDSNTHE  RAS(0.979)DSNTEC  1.013150696  CAMK2;PKPA;AKT
Bud13  BUD13 homolog;BUD  2  S  135  HDTPTSSPRKR  HDT(0.835)PDT(0.49)  1.013017272  CDK1;CDK2;CDK2
Rbm14  RNA-binding protein ;  1  S  582  YERTRLSPRASY  TRLS(1)PPR  1.012883883  CDK1;CDK2;CDK1
Zc3h18 Zinc finger CCCH don  1  S  556  GVSVSPSRRARRR  LGVS(0.089)VS(0.18)  1.012627464  CK1  CK1
Srrm1 Serine/arginine repet  1  S  655  PPKRVHSPPPPK  RVS(0.823)HS(0.1)  1.012002348  CAMK2;PKPA;AKT
Api5  Apoptosis inhibitor 5;  2  S  469  GSPKKSPGGPGBK  TSES(0.001)S(0.001)S(0.001)  1.011510995
Mast2 Microtubule-associate  1  S  75  LLFRKLSPNPDIFA  KLS(1)NPDIAPTGI  1.011285951  CAMK2;C1CHK1/2
Nkx1-2  NK1 transcription factor  2  T  16  KSETLLTEQLVA  S(0.601)ET(0.4)LL  1.010907694
Hnrnpu Heterogenous nucleai  1  S  247  KYSRASKQPQPPVE  AKS(1)PQQPVVEED  1.010111213  CAMK2;C1CHK1/2
Rangap1 Ran GTPase-activatin  2  S  430  PAVPLSSPTPTDL  KILDGNPAPGLVS  1.009805209  Polo box;Polo box
Rangap1 Ran GTPase-activatin  2  S  444  TFLSFSPSEKLLR  KILDGNPAPGLVS  1.009805209  CDK1;CDK2;CDK2
Prkcb  Protein kinase C beta  1  S  660  SEFEQGFVNFSEN  NIDQSEFGKGS(1)F  1.009733834  GSK3;PDKPDK1
Bud13  BUD13 homolog;BUD  2  T  196  RVHRHDTPDLSPP  VRHD(1)PDL(1)FS  1.009489198  CAMK2;F1PI;F1M1/2
Bud13  BUD13 homolog;BUD  2  S  200  HDTPLSPRPRV  VRHD(1)PDL(1)FS  1.009489198  CDK1;CDK2;CDK1
Etv6  Transcription factor E  2  S  22  SSYPPTESPASHR  ISYT(1)PES(1)PYS  1.008654253  CK1;ERK/ERK/MAPK
Cdsa  DNA-binding protein ;  1  S  328  YNNRRRSRPNAV  S(1)RPLNAVSVGy  1.005924898  CAMK2;PKPA
Gtf3c3 General transcription  1  S  51  KENPPDSEVNSS  GKS(0.158)S(0.158)  1.005803486  GSK3;GSK3
Srp72 Srp72 protein;Putativ  2  S  621  ASKAVSSSTSPTR  AVS(0.175)S(0.60)  1.005783254  ERK/MAPK/ERK/MAPK
Srp72 Srp72 protein;Putativ  2  T  624  AVSSSPSTSPEG  AVSG(0.175)S(0.60)  1.005783254  CDK1;CK1
Srrm1 Serine/arginine repet  1  S  915  PRKETSEAEAEDNL  KETES(1)EAEDDNLS  1.005237286  CK2  CK2
Fam103a Protein Fam103A1;Pu  1  S  36  LKRPPEPSSPVE  RPPE(1)PPIVEWEE  1.005045328  ERK/MAPK/ERK/MAPK
Slc9a3r1 Na(+)/H(+) exchange  1  S  283  RPLARASASSDTS  S(0.951)AS(0.048)  1.005045328  NEK6;NEK6
Tbc1d25 TBC1 domain family t  1  S  560  RLLRQASLDLQGLQ  QAS(1)LDGLQQLR  1.004903931  CAMK2;C1CHK1/2
Prkcd  Protein kinase C delta  1  S  669  NEKQPLSFSDKNL  SPSDYSDNPFEFNLN  1.00486354
Rbm15 Rbm15 protein  1  S  658  LDRSPSEPRKQ  HLDSPR(1)ERPQ  1.004500161  CK1  CK1
Wdhd1 WD repeat and HMG-  1  S  821  ELAETQSEEEKEE  AAELAET(0.113)Q  1.004419446  CK2  CK2
Dock8 Dedicator of cytokine  1  S  2087  RDSFHRSSFRKCE  DSFHRS(0.5)S(0.5)  1.00417128 CK1  CK1
| Gene          | Description                                      | p-value | Fold_change |
|--------------|---------------------------------------------------|---------|-------------|
| Fkbp15       | FK506-binding protein                             | 1.00051026 | 1           |
| Srrm1        | Serine/arginine repeat                            | 1.00150023 | 2           |
| Otud4        | Otud4 protein                                     | 1.000590348 | 1           |
| Prkcbp1      | Protein kinase C bind                             | 0.99940036 | 1           |
| Tmem34       | Mitochondrial import                             | 0.998801438 | 1           |
| Tomm34       | Mitochondrial import                             | 0.998203234 | 2           |
| Otud4        | Otud4 protein                                     | 0.998203234 | 2           |
| Zc3h13       | Putative uncharacteri                            | 0.998203234 | 2           |
| Dck8         | Dedicator of cytokine                             | 0.997406742 | 2           |
| Accn1        | Apoptotic chromatin                              | 0.99631364 | 1           |
| Pa2g4        | Proliferation-associated                         | 0.996810207 | 2           |
| Npm1         | Nucleosomin;Nucle                                  | 0.996412914 | 2           |
| Set          | Protein SET;Phosphatase                          | 0.995421063 | 2           |
| Gene          | Description                                                                 | Accession Numbers                                      | EValue   |
|--------------|-----------------------------------------------------------------------------|--------------------------------------------------------|----------|
| Clspn        | Claspin                                                                     | FHTLSPTKAEAAK                                          | 0.99522293 |
| Nuclcs       | Nuclear ubiquitous ca                                                      | KTKKDDSSHAEDS                                          | 0.995024876 |
|              | Uncharacterized protein                                                    | VRERRGSEAGRR                                         | 0.995024876 |
| Saps         | Serine/threonine-prol                                                      | HHLHSSSDDEDR                                         | 0.994727942 |
| Vamp4        | Vesicle-associated me                                                      | NLLLEDSDDEEEED                                       | 0.994431185 |
| Sep-2        | Septin-2; Neural precursor                                                | HLPDAESEDDEDF                                        | 0.994233446 |
|              | Protein phosphatase                                                        | VDRVEESGEGD                                          | 0.994035785 |
|              | Inositol 1,4,5-trisphoz                                                   | VLSRKQSVFAGASS                                      | 0.992950055 |
| Akapl13      | Putative uncharactered                                                     | 1532 SPFRRHSWGPQKN                                    | 0.992260369 |
| Elf1         | ETS-related transcrip                                                      | KPRPDPSTTPTN                                         | 0.992260369 |
| Rg9mtd2 RNA  | (guanine-9-)me                                                             | 24 EEKLGTSGDGEER                                    | 0.992161921 |
| Canx         | Calnexin                                                                   | 582 DEILNRSPNRK                                      | 0.992063492 |
|              | EIF4b Eukaryotic translocator                                              | 422 ERSRTGSESSQTG                                     | 0.991669972 |
|              | EIF4b Eukaryotic translocator                                              | 427 GSESSQQTGASATS                                   | 0.991669972 |
|              | Larp1 La-related protein 1;l                                               | 761 YQKETESAPGSSP                                     | 0.991669972 |
|              | Larp1 La-related protein 1;l                                               | 765 TESAPGSPRAVT                                      | 0.991669972 |
|              | Rb1 Retinoblastoma-assoc                                                   | 344 QTDPIDSFETERT                                    | 0.991473329 |
|              | Thumpd1THUMP domain-conta                                                 | 86 DQDQPSGSEGED                                       | 0.991375037 |
|              | Thumpd1THUMP domain-conta                                                 | 88 DQDQPSGSEGEDD                                      | 0.991375037 |
|              | Hrnnp2 Heterogeneous nucle:                                                | 224 EAYHSRKSPPP                                      | 0.990295108 |
|              | Rps27 40S ribosomal protein                                                | 11 KDLHHPSEEEKR                                      | 0.99000999 |
|              | Fryl MKIAAA0826 protein;F                                                   | 1958 RGDRRSNTLDIT                                     | 0.98990299 |
| Nucks         | Nuclear ubiquitous ca                                                      | 19 YSQFQESDDADE                                      | 0.989609104 |
| Hspa14        | Heat shock 70 kDa pr                                                        | 61 SIRHVSSTVVK                                       | 0.988826263 |
|              | Cblb E3 ubiquitin-protein li                                               | 480 QNSPVTSPSGSSPL                                    | 0.988630746 |
|              | Cblb E3 ubiquitin-protein li                                               | 483 PVTSPSGSSPLQQR                                   | 0.988630746 |
| Hdgf          | Hepatoma-derived gr                                                        | 165 GDVLEDSKPRKE                                      | 0.987947046 |
|              | Rnf20 E3 ubiquitin-protein li                                              | 138 PEPDSDNQERKD                                      | 0.987654321 |
|              | Rbm39 RNA-binding protein                                                  | 136 PFRKDPSVREPI                                      | 0.987168313 |
| Ahnak         | Ahnak protein                                                               | 116 SSEVLSGDDEDY                                     | 0.986387848 |
| Sltm          | SAFB-like transcriptio                                                     | 289 QDAIAOQPSEKEK                                     | 0.986290561 |
|              | Uncharacterized protein                                                    | 150 AEETITSPKNTQ                                     | 0.985998817 |
|              | Uncharacterized protein                                                    | 436 CIERPLSPDVERH                                     | 0.98473683 |
| Eif5b         | Eukaryotic translocator                                                    | 139 EAPLSGEDADDS                                     | 0.984639622 |

Note: The EValue column represents the statistical significance of the matches.
| Gene          | Name                                      | Type | Start | End   | Score   | Database | Description                                                                 |
|--------------|-------------------------------------------|------|-------|-------|---------|----------|-----------------------------------------------------------------------------|
| Sec61b       | Protein transport prot                    | 1    | S     | 7     | MGPTPSGTN| PGPT(0.02)PS(0.8)PGPT(0.02)PS(0.8)PGPT(0.02)PS(0.8) | 0.984445757               |
| Madd         | MAP kinase-activating                     | 1    | T     | 1236   | LASSRATLSD7EI | AT(0.5)LS(0.5)DSE | 0.984348853 AURORA;CAURORA                                                 |
| Madd         | MAP kinase-activating                     | 1    | S     | 1238   | SSRATLSDSEI | AT(0.5)LS(0.5)DSE | 0.984348853 CK2 CK2                                                      |
| Wdhd1        | WD repeat and HMG-domain                 | 1    | T     | 819    | AAEINRTPQSEEK | AAILQT(0.5)Q | 0.984058256 CK2 NEK6 CK2                                                 |
| 06100101      | Uncharacterized protein                   | 1    | S     | 100    | IPLPAESP| KKYEDSGIPLAES | 0.983187494 CKD1 CKD CKD2                                                 |
| Srrm1        | Serine/arginine repeat                    | 1    | S     | 429    | KSRVSHVPSGRTSG | VS(1)PGR | 0.983090838 CK1 CKD CKD2                                                  |
| Ccdc88b      | Coiled-coil domain containing             | 1    | S     | 1413   | GRRSSASFGSPGDT | SSAS(0.999)FS(0.1) | 0.982897582 CK1 CK1                                                     |
| Lig1         | DNA ligase 1; DNA lig.                    | 1    | S     | 204    | PSEPTKSPESVT | EGDRQLVPS(0.004) | 0.981932443               |
| Eomes         | Eomesodermin homolog                     | 1    | S     | 117    | PDGRKGSPCAEE | KGS(1)PCEAEELPS | 0.981065437 CAMK2 PKA                                                    |
| Ppp1r12c     | Ppp1r12c protein; MC                      | 1    | T     | 443    | RGLRKTGSGY | KT(0.859)GS(0.14) | 0.980776775 NEK6 NIM NIMA                                               |
| Mta3         | Metastasis-associated                     | 1    | S     | 514    | DRHAELESGSPLKS | HAEELS(0.5)GS(0.5) | 0.980680592               |
| Ncor1        | Nuclear receptor core                     | 1    | S     | 2195   | DPAPQRSDSR | S(0.679)DS(0.041) | 0.978282137 GSK3 GSK3                                                   |
| Srrm1        | Serine/arginine repeat                    | 2    | S     | 591    | PPPRRRSPPTPPPR | RRS(1)PT(1)PPPR | 0.978186442 CAMK2 PKA AKT                                              |
| Srrm1        | Serine/arginine repeat                    | 2    | S     | 593    | RRRRSSPTPPPPR | RRS(1)PT(1)PPPR | 0.978186442 14-3-3 bir 14-3-3 bindin                                       |
| Ndrg2        | Protein NDRG2; Protein                   | 2    | S     | 332    | SRSRTASLTS | SRT(1)AS(0.999)L | 0.977899472 CAMK2 CK PAK AKT                                            |
| Gify2        | PERQ amino acid-rich                     | 1    | S     | 26     | SGGSITSPPLS | ALS(0.001)S(0.001) | 0.977803853 CK1 GSK3 CK1                                                |
| Nmt1         | Phosphoglycine N-tetra                   | 1    | S     | 47     | HNRGSLSGPNDTNG | S(0.023)GLS(0.97) | 0.97761267 CK1 CK1                                                     |
| Pum2         | Pumilio homolog 2; Pt                    | 2    | S     | 181    | PGSRQASPE | T(0.004)PGS(0.99) | 0.97713504 CAMK2 CK CAMK2                                               |
| Cap2a1       | Putative uncharacteristi                  | 1    | S     | 9      | DFEDRVSDEEKV | ADFEDRVS(1)DEK | 0.976371802 CK2 PKA P K A                                               |
| Temp2        | Putative uncharacteri                     | 1    | T     | 159    | TESSRSTPTLP | T(0.173)S(0.027)T | 0.976276481 CAMK2 Po Pol box                                            |
| Elf3b        | Eukaryotic translation                    | 2    | S     | 75     | EEETAATSPASPT | AKPAAQSEETAT | 0.976181179 GSK3 GSK3                                                   |
| Elf3b        | Eukaryotic translation                    | 2    | S     | 79     | ATSPAAPTPSQA | AKPAAQSEETAT | 0.976181179 CK1 CK1                                                   |
| Fam53b       | Protein FAM53B; Protei                   | 1    | S     | 168    | PMQRSSSSFLSPAR | SSS(1)FLSPAR | 0.975800156 CAMK2 CK P K A AKT                                         |
| Phactr1      | Phosphatase and acti                     | 1    | S     | 126    | PIGASARSSPSLV | S(0.725)S(0.138) | 0.973615033 CK1 CK1                                               |
| Bud13        | BUD13 homolog; BUD                       | 2    | T     | 131    | RRVRHDTPTDSSP | HDT(1)PT(0.929) | 0.973520249 CAMK2 PI PIM1/2                                           |
| Znf828       | Zinc finger protein 82                   | 1    | T     | 447    | SPDQRRKSPASLD | KT(0.872)S(0.111) | 0.973330738 FHA KAP P K A                                              |
| Polm         | Polymerase (DNA direct)                  | 1    | S     | 12     | RVRAQGPHSAVA | AGS(0.887)PHS(0.0) | 0.9731413 CAMK2 PK KK AKT                                              |
| Srrm1        | Serine/arginine repeat                    | 1    | T     | 633    | PPPKRRTASPPP | T(0.598)AS(0.402) | 0.9731413 PKA P K A                                                   |
| Sh3bp5i      | SH3 domain-binding                      | 1    | S     | 377    | SRGRGRSDIGVRG | RGS(1)DIGVR | 0.972573429 CAMK2 PK P K AKT                                           |
| Srrm2        | Srrm2 protein; Serine                    | 2    | S     | 434    | GSRHASSSPESL | HAS(0.533)S(0.53) | 0.972573429 CK2 GSK3 CK2                                            |
| Srrm1        | Serine/arginine repeat                    | 1    | S     | 616    | PSPRRYSPPIQR | RYS(1)PPYQR | 0.972478849 CAMK2 PK P K A                                              |
| Plec1        | Plectin-1; Plectin-6; Plk               | 1    | S     | 4393   | FRSRSSSVGSSSSS | S(0.028)S(0.077)S | 0.972384286 CAMK2 CK P K AKT                                             |
| Whsc1        | Probable histone-lysir                   | 1    | S     | 437    | PKRGVGSPAGRR | RKGVGS(1)PAGR | 0.972289742 ERK MAPK ERK MAPK                                           |
Setd2  MKIAA1732 protein  2 S  2053  KRKRGRGSLSPSS  RGS(1)LS(0.736)PI  0.963391137 AURORA;PKA/AKT
Setd2  MKIAA1732 protein  2 S  2055  KRGRGSLSPSSAY  RGS(1)LS(0.736)PI  0.963391137 GSK3 GSK3
Sfrs1  Splicing factor, arginii  1 S  2  MSGGGVR  S(1)GGGVIRPGAP1  0.963391137
Ifngr1  Interferon-gamma receptor  1 S  379  TPTQFRSFSLSS  S(0.998)FS(0.002)  0.962834585 CK1;PKA PKA
Akap13  Putative uncharacteri  1 S  2692  DSELVSVPKNSI  SGSLDSELSVS(1)P  0.962741889 CDK1;CDK CDK2
Brd3  Bromodomain-contain  1 S  262  TASRSEPPPLSE  S(0.024)ES(0.976)  0.962093515 14-3-3 bir 14-3-3 bindin
G3bp1  Ras GTase-activating protein  1 S  229  PDVQKSTSPAPA  S(0.705)(0.259)S  0.961908426
Snp1  Smad nuclear-interac  1 S  18  GRRRHRSGDALT  S(1)GDALTTPVVK  0.961908426 CAMK2;PI PIM1/2
Rgs14  Regulator of G-protei  1 S  289  SESHRKSLSGES  S(0.77)LGS(0.229)  0.961630926 AURORA;CAURORA
Srrm1  Serine/arginine repeat  1 S  714  RAPQTSSPPVRR  APQTS(0.08)S(0.9)  0.961630926 Polo box Polo box
Dbr1  Lariat debranching er  1 S  505  CGETVESGDEKDL  CGETVES(1)GDEKI  0.960614793 CK2 2 CK2
Rfx7  Putative uncharacteri  1 S  1177  HQRQNLGSTATYP  NLS(1)GSTLYPVSN  0.960061444 CAMK2;PKPKA/AKT
Fcho1  FCH domain only prot  1 S  518  LMPRAPSPPGWPG  APS(1)PPGWPGEG  0.959785008 CAMK2;CPHCK1
Eif3c  Eukaryotic translato  1 S  39  KQPLLSEDEEDT  QPLLLS(1)DEEDT1  0.959600806 CK2;NEK6 CK2
Suo1  Small ubiquitin-relate  1 S  2  MSQDEAKP  S(0.999)DQEAKPS  0.959416675 CK2 2 CK2
Srrm2  Srrm2 protein;Serine  2 S  433  KGSRHASSPSES  HAS(0.962)S(0.22)  0.959048624 CAMK2;CK CAMK2
Eif3b  Eukaryotic translation  2 S  120  AEEEGGSGSAAE  GHPASAGAEEEGGS  0.958129731
Eif3b  Eukaryotic translation  2 S  123  EGGSDDAGAEEP  GHPASAGAEEEGGS  0.958129731 CK1;CK2 CK2
Fip11  Pre-mRNA 3'-end-pro  1 S  303  RGYRAESPLDLR  YGRAES(1)PDLR  0.958037938 CAMK2 CAMK2
Fam122b  Protein FAM122B;Pro  2 S  115  IDFPTVPAPSP  RIDFT(0.337)PVS(  0.957946163 ERK/MAPK WW GroupIV
Thrapt3  Thyroid hormone rece  1 S  379  KEKGFSDADVKM  GGFS(1)DADVK  0.957670944
Hdgfrp2  Hepatoma-derived gr  2 S  375  ERAERGSSGEELE  ERAERGGS(1)S(1)I  0.957304231 CAMK2;CK CAMK2
Hdgfrp2  Hepatoma-derived gr  2 S  376  AERGGSSGEELED  ERAERGGS(1)S(1)I  0.957304231 CK2 2 CK2
Rplp0  60S acidic ribosomal  2 S  304  AEEKEEESDEED  AFLAPSFAAAPA  0.956846235
Rplp0  60S acidic ribosomal  2 S  307  KEESEEEDDMGF  AFLAPSFAAAPA  0.956846235 CK1 CK1
Rbm12  RNA-binding protein :  1 S  422  GQKRSRSRSPHEA  RS(0.794)RS(0.206)  0.956571647 CAMK2;PKPKA/AKT
Fam65b  Protein FM65B;Fam  1 S  46  GIIRSQSFAGFSG  S(0.022)QS(0.978)  0.956388676 CAMK2;CPK PKD
Rps6ka1  Probable uncharacteri  1 S  363  SRTRPDSPGIPS  T(0.098)PRDS(0.9)  0.956388676 CK1;PKA PKA
Myccb2  Probable E3 ubiquitin  1 S  2861  SHSRLSPNHNTL  S(0.004)LSS(0.996)  0.955840184 CAMK2;CK CAMK2
Myo9b  Myosin-IXb;Unconver  1 S  1204  EPSRRALEIGES  RAS(1)LEIGESFPEC  0.955840184 AURORA;AURORA-A
Etv6  Transcription factor E  2 T  18  QERISYTPESPV  ISYT(1)PES(1)PV  0.955474871 CK2 2 CK2
Prpf4b  PRP4 pre-mRNA proc  2 S  437  SPIRWSPTRRRS  S(0.842)KDAS(0.1)  0.955292319 CK1;CDK CDK2
Ybx1  Nuclease-sensitive eli  1 S  166  QQNYQNSESDEKGN  NYQQNYQNS(1)E5  0.955292319
Eif5b  Eukaryotic translato  1 S  215  SVPTVDSGNEDED  SVPTVS(1)GNEI  0.954927426 CK2 2 CK2
A kinase anchor protein 1, mitochondrial; Protein kinase A-anchoring protein 1; Dual specificity A-kinase-anchoring protein 1; Spermatid A-kinase anchor protein

AP-3 complex subunit beta-1; Adapter-related protein complex 3 subunit beta-1; Adaptor protein complex AP-3 beta-1 subunit; Beta3A-adaptin; Clathrin assembly protein complex 3 beta-1 large chain

CDK1; CK1; ERK/MAPK; GSK3; WW Group IV

Phosphoglycerate mutase 1; Phosphoglycerate mutase isozyme B; BPG-dependent PGAM 1

VQGTGVTPPPTPL

CK2

DNA ligase 1; DNA ligase I; Polydeoxyribonucleotide synthase [ATP] 1; Putative uncharacterized protein

INHTVILDDPFDDPPDLLIPDRS(0.994)PEPT(0.006)K

CK2

RKVMDS(1)DEDDADY

MSERVLSPPKLNE

CK2

CDGSPRTPPSTPP

Ran-binding protein 3

CAMK2; CDK1; CDK2; ERK/MAPK

H/ACA ribonucleoprotein complex subunit 4; Dyskerin; Nucleolar protein family A member 4; snoRNP protein DKC1; Nopp140-associated protein of 57 kDa; Nucleolar protein NAP57; Putative uncharacterized protein

SSLGQS(0.001)AS(0.878)ET(0.121)EEDT(0.001)VSISKK

Camk2; PKA

Putative uncharacterized protein

SSLGQSASETEEDT

Camk2; PKA/AKT

Heterogeneous nuclear ribonucleoprotein A/B; CArG-binding factor-A

H/ACA ribonucleoprotein complex subunit 4; Dyskerin; Nucleolar protein family A member 4; snoRNP protein DKC1; Nopp140-associated protein of 57 kDa; Nucleolar protein NAP57; Putative uncharacterized protein

La-related protein 1; La ribonucleoprotein domain family member 1

La/ACA ribonucleoprotein complex subunit 4; Dyskerin; Nucleolar protein family A member 4; snoRNP protein DKC1; Nopp140-associated protein of 57 kDa; Nucleolar protein NAP57; Putative uncharacterized protein

Proteasome inhibitor PI31 subunit

Nuclear-interacting partner of anaplastic lymphoma kinase; Zinc finger C3HC-type protein 1; Nuclear-interacting partner of ALK; Nuclear-interacting partner of anaplastic lymphoma kinase; Zinc finger C3HC-type protein 1

CK1

CDGS(0.001)PRT(0.975)PPS(0.021)T(0.003)PPATANLSADDDFQNTDLR

KPAAADSEGEEEE

ESRKSKSPPKVPI

Camk2

SLGGPTPADDVPAK

Putative uncharacterized protein

SSLGQSASETEEDT

CDK1; CDK2

Serine/arginine repetitive matrix protein 1; Plenty-of-prolines 101; Serine/arginine repetitive matrix 1; Serine/arginine repetitive matrix protein 1; Plenty-of-prolines 101; Serine/arginine repetitive matrix 1

PKRRTASPPPPPK

Proteasome inhibitor PI31 subunit

Nuclear-interacting partner of anaplastic lymphoma kinase; Nuclear-interacting partner of ALK; Zinc finger C3HC-type protein 1; Nuclear-interacting partner of anaplastic lymphoma kinase; Zinc finger C3HC-type protein 1

SSLGQSASETEEDT

CDK1; CDK2

Heterogeneous nuclear ribonucleoprotein A/B; CArG-binding factor-A

H/ACA ribonucleoprotein complex subunit 4; Dyskerin; Nucleolar protein family A member 4; snoRNP protein DKC1; Nopp140-associated protein of 57 kDa; Nucleolar protein NAP57; Putative uncharacterized protein

Camk2; PKA

Putative uncharacterized protein

SSLGQSASETEEDT

Programmed cell death protein 5; TF-1 cell apoptosis-related protein 19

YEDDGISDDEIG

Thyroid hormone receptor-associated protein 3; Thyroid hormone receptor-associated protein complex 150 kDa component; Putative uncharacterized protein; Thrap3 protein

PLTVPVSPKFSTR

Putative uncharacterized protein

SSLGQSASETEEDT

Serine/arginate repetitive matrix protein 1; Plenty-of-prolines 101; Serine/arginate repetitive matrix 1; Serine/arginate repetitive matrix protein 1; Plenty-of-prolines 101; Serine/arginate repetitive matrix 1

GLLYDS(0.993)S(0.007)EEDEERPAR

RGLLYDSSEEDEE

T(0.006)WGS(0.003)VVRS(0.988)PEGT(0.003)PQK

RRS(0.863)ES(0.018)S(0.119)GNLPSVADTR

PLTVPVSPKFSTR

Putative uncharacterized protein

SSLGQSASETEEDT

CDK1; CDK2

Serine/arginate repetitive matrix protein 1; Plenty-of-prolines 101; Serine/arginate repetitive matrix 1; Serine/arginate repetitive matrix protein 1; Plenty-of-prolines 101; Serine/arginate repetitive matrix 1

CDK1; CDK2

Serine/arginate repetitive matrix protein 1; Plenty-of-prolines 101; Serine/arginate repetitive matrix 1; Serine/arginate repetitive matrix protein 1; Plenty-of-prolines 101; Serine/arginate repetitive matrix 1

CDK1; CDK2

Serine/arginate repetitive matrix protein 1; Plenty-of-prolines 101; Serine/arginate repetitive matrix 1; Serine/arginate repetitive matrix protein 1; Plenty-of-prolines 101; Serine/arginate repetitive matrix 1

CDK1; CDK2

Serine/arginate repetitive matrix protein 1; Plenty-of-prolines 101; Serine/arginate repetitive matrix 1; Serine/arginate repetitive matrix protein 1; Plenty-of-prolines 101; Serine/arginate repetitive matrix 1
| Gene Symbol | Protein Name | Forward Position | Reverse Position | Score | Evalue | Description |
|-------------|--------------|------------------|------------------|-------|--------|-------------|
| Pdcd4       | Programmed cell death protein 4 | 1 S | 457 GRKRFVSEGDGGR RFVS(1)EGDDGGR 0.935716291 CAMK2;PKA/PKA/AKT |
| Bud13       | BUD13 homolog | 2 T | 134 RHDPDGSPPRAK HDT(1)PD(0.929) 0.935541211 |
| Hnrnpul1    | Heterogeneous nuclear ribonucleoprotein U-like protein 1 | 1 S | 195 EDGRGRPQPAAEGRS(1)PQPAAEDEE 0.935366196 CAMK2 CAMK2 |
| Znf828      | Zinc finger protein 82 | 1 S | 464 QKSSCPSPDLDWK SSCG(1)PPDLDWK 0.935103797 CK1 CK1 |
| Hirip3      | HIRA-interacting protein | 1 S | 575 YRRLDSSEEEQPR TLDS(1)EEEQP 0.934841544 CK2 CK2 |
| Gtpbp1      | GTP-binding protein 1 | 1 S | 44 LGGGFDSDCEDG LGGGFD(1)DCS(1) 0.93475416 CK1 CK1 |
| Gtpbp2      | GTP-binding protein 1 | 1 S | 47 GFDSCDSEDGEAL LGGGFD(1)DCS(1) 0.93475416 CK1 CK1 |
| Smap        | Small acidic protein | 1 S | 17 GVKRSASPDDDLG S(0.151)AS(0.849) 0.93475416 CAMK2;PKA/PKA |
| Srrm2       | Srm2 protein | 1 S | 2535 ALKRVPSPTVPVK RVP(0.998)PT(0.1) 0.934404784 CAMK2;PKA/PKA |
| Cic         | Protein capicua homo | 2 S | 691 PRERHSSGILPTF HS(0.139)S(0.861) 0.933968432 CAMK2;PKA/PKA |
| Cic         | Protein capicua homo | 2 S | 708 TFTPVISPGRRKT HS(0.139)S(0.861) 0.933968432 CDK1;CDK4;PI3K |
| Cispn       | Claspin      | 1 T | 1263 RNFLVFTLSPTKA NFVFHT(0.846)LS(0.151) 0.93300989 |
| Brca1       | Breast cancer 1;Breast cancer type 1 susceptibility protein homolog | 1 S | 706 LLTSCSSPRKSG AGTL(0.998)S(0.002) 0.932661817 CDK1;CDK4;PI3K |
| Hdac1       | Histone deacetylase 1 | 2 S | 421 AACEEFSDEEDEG IACEEFS(1)DEE(1) 0.932661817 |
| Hdac1       | Histone deacetylase 1 | 2 S | 423 EEEFSDEEDEEG IACEEFS(1)DEE(1) 0.932661817 CK2 CK2 |
| Hsp90ab     | Heat shock protein H! | 1 S | 255 KIEVGDSDEEEG IEDVGS(1)DEED(1) 0.932574839 CK2 CK2 |
| Ssfa2       | Sperm-specific antigen | 1 S | 758 PLRRLSPLTTL S(0.002)QS(0.998) 0.932487878 14-3-3,14-3-3 binding |
| Eef1d       | Elongation factor 1-d | 1 S | 109 PQTQHVSMPQRVE ATAPQHVS(1)PMM 0.932314003 CDK1;CDK4;PI3K |
| Cccd55      | Coiled-coil domain-co | 2 S | 31 KPSVFQDDSDDEQ VLP(0.998)FSC 0.931879601 CK1 CK1 |
| Cccd55      | Coiled-coil domain-co | 2 S | 33 SVFGQDDSDDEQ VLP(0.998)FSC 0.931879601 |
| Tcof1       | Treacle protein;Treacle | 1 S | 593 SSAASLSPLAKG AGATTVSSASLS(0.998) 0.93092534 CK1;PI3K |
| Srrm1       | Serine/arginine repeat | 2 S | 400 RRRHRPSSPXPG HRPS(0.867)S(0.1) 0.930665426 PKA PKA |
| Tmf1        | TATA element modula | 1 S | 340 SVSEINSDELPG SEVINS(1)DDELPG 0.930319099 CK1;CK2 CK2 |
| Atrx        | Alpha thalassemia/m | 2 S | 1224 TGFQGSSGDEALS IKPVENYLPS(0.4) 0.930146033 CK2 CK2 |
| Lsm14a      | Protein LSM14 homol | 1 S | 216 APVGRSPVPARP RS(1)PVPARPLPT(1) 0.930146033 PKA PKA |
| Capza2      | F-actin-capping protein | 1 S | 9 DLEQDLSEEEKV ADLEQLS(1)DEEK 0.929713648 CK2 CK2 |
| Srrm1       | Serine/arginine repeat | 2 S | 624 PIQRYRSPSPPKK RYS(1)PS(1)PPKR 0.929195317 CAMK2;PKA/PKA/AKT |
| Sqtstm1     | Sequestosome-1;Ubiquitin | 1 S | 24 REIRRFSCSFSE RFS(0.999)FCS(0) 0.928936368 CAMK2;GSK |
| Nfx1        | Nuclear factor X1 | 2 S | 50 GRRNYSSPCCHL NYS(0.098)S(0.5) 0.928505107 14-3-3,14-3-3 binding |
| Crkrs       | Cell division cycle 2-r | 1 T | 889 EESRPYTINKVT LYNSEESRPYT(1)NII 0.928246542 CAMK2 CAMK2 |
| Saps3       | Serine/threonine-pro | 1 S | 588 QFDGSDDSDDEIW IQQFDGGS(1)DEI 0.928246542 CK2 CK2 |
| Hspa14      | Heat shock 70 kDa pr | 1 T | 63 IRHVSTVVKKVQ IRHV(0.007)S(0.0) 0.927815921 |
| Tssc4       | Protein TSSC4 | 1 T | 124 SFRRPVTQPSQTP RPVT(0.978)PSP(0.0) 0.92755774 CAMK2;PI3K |
| Ablim1      | Actin-binding LIM pro | 1 S | 671 DPRRSSGREDEE RS(0.002)S(0.998) 0.927471712 CAMK2;PKA/PKA/AKT |

**Notes:**
- The table lists the gene symbols, protein names, forward and reverse positions, scores, Evalues, and descriptions.
- The data includes various proteins and their associated functions and interactions.
- The table may be relevant to the study of cell death, protein-protein interactions, and other cellular processes.
Clip1  CAP-Gly domain-containing linker protein 1
Esp1  Separin;Separase;Ca
Srrm2  Srrm2 protein;Serine
Srrm2 protein;Serine
Bat2  Large proline-rich prc
Bat2  Large proline-rich prc
Madd  MAP kinase-activating 1
Madd  MAP kinase-activating 1
Pepd  Xaa-Pro dipeptidase;I
Pepd  Xaa-Pro dipeptidase;I
Rpl4  60S ribosomal protein
Iws1  Protein IWS1 homolo
Iws1  Protein IWS1 homolo
Ep400  E1A-binding protein p
Eif3f  Eukaryotic translation translato
Ppp1r12c  Ppp1r12c protein;MC
Arhgef2  Rho guanine nucleotid
Tbrg1  Transforming growth
Pi4kb  Phosphatidylinositol 4
Rbmx  Heterogeneous nuclear
Eif4ebp1  Eukaryotic translation
Eif4ebp1  Eukaryotic translation
Uhrf1  E3 ubiquitin-protein li
Rbm12  RNA-binding protein ;
Fip11  Pre-mRNA 3'-end-pro
C130039  Putative uncharacte
Nek1  Nek1 protein;MKIAA1
Huwe1  E3 ubiquitin-protein li
Eef1d  Elongation factor 1-d
Hsp90  Heat shock protein 1
Usp39  U4/U6.U5 tri-snRNP-
Abcf1  ATP-binding cassette
Eif4b  Eukaryotic translation 1
Slc9a3r1 Na(+)/H(+) exchanger 1 S 275 VEPASEPRPALA EALVEPAS(0.002)E 0.916170408 CDK1 CDK1
Larp1 La-related protein 1;I 1 S 569 ETSSVKSDDAGGA VEPAWHQDEISSI 0.915331808 CK1 CK1
Srrm1 Serine/arginine repet 2 S 427 TRKSVSVSPPR 5RSV(1)VS(1)PGR 0.914996798 AURORA;CAURORA
Ccdc55 Coiled-coil domain-co 2 S 27 RVLQKPSVFGSDS VLQKPS(0.599)VFC 0.914829384 AURORA;CAURORA
Als2 Alsin;Amyotrophic lat 2 S 477 GSSRRLSPGLLS RLS(1)LPGLLS(0.0) 0.914662032 AURORA;AURORA-A
Als2 Alsin;Amyotrophic lat 2 S 486 GLLSQVSPRLRK RLS(1)LPGLLS(0.0) 0.914662032 CDK1;CK1;CDK1
Rtn4 Reticulon-4;Neurite o 1 S 165 APCRKGGSVDTE RGS(0.791)GS(0.1) 0.914494742 CAMK2;PKA/PAK
Mcm3 DNA replication lic 1 S 672 KASEDESLDELE KASEDES(1)DLEDE 0.914411119 CK1;CK2 CK2
Purb Transcriptional activa 1 S 298 KGNKSPPPDGS GNKS(0.004)PS(0.0) 0.913492281
Bin1 Myc box-dependent-ii 1 S 353 GKAASEEEEEE AAKES(1)E EEEEEE 0.911992704 CK2 CK2
Nolc1 MKIARA0035 protein;P 1 S 563 GKAASEEÊÊÊÊÊÊÊ AAKES(1)E EEEEÊÊÊÊÊÊÊ 0.91192704 CK2 CK2
Sh2d3c SH2 domain-containi 1 S 435 TSAQPASPVARRS VHAPSATPSTSAQP/ 0.911909539 ERK/MAPK WW GroupIV
Pprpf4b PRP4 pre-mRNA proc 2 S 427 LGRCERSKDAPSI S(0.842)KDAS(0.1) 0.911826388 GSK3 GSK3
Crry Complement regulate 1 S 477 TSPARNLTSQEV LSQLLTSQENS(0.0) 0.911078717 AURORA;F AURORA
Myl9 Myosin regulatory ligl 1 T 19 KRPQRATSNVAM AT(0.68)S(0.32)Nv 0.910166565 PKA PKA
Myh9 Myosin-9;Myosin hea 1 S 1943 KGTGDCSDEEVGD GTGDCS(1)DEEVDI 0.90950432 CK1;CK2 CK2
Zc3h13 Putative uncharacteri 1 S 198 IIQKEVSEPVRVS EEEIIQKEVS(1)PEV 0.90950432 CHK1;PKD PKD
Pprpf4b PRP4 pre-mRNA proc 2 S 366 RDKSRRSRPLLNN S(1)RS(1)PLLNDRF 0.909256228 CK1;PKA PKA
Pprpf4b PRP4 pre-mRNA proc 2 S 368 KSRRSRRPLLNRD S(1)RS(1)PLLNDRF 0.909256228 CAMK2 CAMK2
Gpkow G patch domain and I 1 S 348 EKKKHERPPQDGK KHS(1)PQDGK 0.908760451 CAMK2;CI PKA
Stub1 STIP1 homology and 1 S 20 GTGGGSPDKSPS LGTGGGGS(1)PDK 0.908760451 CDK1;CDK;CDK2
OTTMUSCInterferon-gamma-in 1 S 416 LQDSDVDE_ KVFQDSDSVDE(1)E 0.908512765 CK1 CK1
Rnf219 RING finger protein 2 1 S 210 AEVDNRSPQFGR LKAEVNRS(1)QPK 0.907935355 CDK1;CDK2 CDK2
Foxk1 Forkhead box protein 2 S 427 QTPTECLSREGSI S(0.001)S(0.001)C 0.907523369 GSK3 GSK3
Phactr1 Phosphatase and acti 1 S 128 GSAEKRSPPVLI S(0.031)S(0.009)S 0.907523369 CAMK2;Po Polo box
Mobbk1a Putative uncharacteri 1 T 35 LKHAETLGSNKL HAEAT(0.926)LGS(0.965) 0.907029478 FHA KAPP;PLK1
Zfp280b Zfp280b protein 1 S 118 SPSAEKRDISPAA S(0.801)T(0.1)DS(0.000) 0.90628965
Srrm2 Srrm2 protein;Serine 1 S 2052 PATRNHSSTRTPP NHS(0.462)GS(0.4) 0.906043309 CAMK2;CK CAMK2
Nop14 Nucleolar protein 14; 1 S 96 EYNNSIPEEKMS FEGYNSNSIS(1)PEEI 0.905633037 CK1;CK2 CK2
Rgs3 Regulator of G-protei 1 S 686 SEAKRSLLETQG RS(0.002)S(0.998) 0.904731747 AURORA;AURORA-A
Raver1 Ribonucleoprotein PTI 1 S 14 THRPLSSPREEAE AAADVSTHRPPLS(1) 0.904159132 ERK/MAPK WW GroupIV
Srrm2 Srrm2 protein;Serine 2 S 1628 RTARRGSSSIEP RGS(0.987)RS(0.9) 0.904159132 CAMK2;PKA/PAK
Srrm1 Serine/arginine repet 1 S 713 PRAPQTSSPPVPR APQ(0.001)S(0.9) 0.903505602
Rbm17 Splicing factor 45;45 1 S 155 RRDPDSDPDEDEY RPDPS(1)DEDEDY 0.903342367
| Protein Name                               | Accession | Uniprot ID          | Description                                                                 |
|-------------------------------------------|-----------|---------------------|-----------------------------------------------------------------------------|
| Putative uncharacterized protein          |           |                     |                                                                             |
| GSK3                                      |           | S                   | GSK3(1)EPQHQR                                                              |
| Stathmin;Phosphoprotein                   |           | S                   | AEERKSEAEVL RKS(1)HEAVLK                                                   |
| Srrm1;Serine/arginine repeat              |           |                     | 412 PPKTRSHTPQQTS TRHS(0.999)PT(0.1)                                       |
| Stathmin;Phosphophorylated                |           |                     | 63 AEERKSEAEVL RKS(1)HEAVLK                                                |
| Arid5a;AT-rich interactive do             |           | S                   | 386 NKKIOQDPQNLRG HGARS(0.079)PNK                                          |
| Nkx1-2 NK1 transcription fac              |           | 2 T                 | 11 DQAPDSETLTL S(0.991)ET(0.505)                                           |
| Nkx1-2 NK1 transcription fac              |           | 2 T                 | 13 APDKSETLTLSEQ S(0.991)ET(0.505)                                         |
| Rfc1;Putative uncharacteri               |           | 2 T                 | 107 DPVTYVSETDDEDE S(0.001)' VSQKDPVT(0.001)'                              |
| Rfc1;Putative uncharacteri               |           | 2 T                 | 109 VTYVSETDDEDDDF S(0.001)VSQKDPVT(0.001)'                                |
| Lrche4 Leucine-rich repeat a              |           |                     | 21 EAAASVLPGSPG AAAVAGPLAAGGEE                                            |
| Lrche4 Leucine-rich repeat a              |           |                     | 25 SSVLSGSPGGLPGS AAAVAGPLAAGGEE                                           |
| Kpna2 Importin subunit alpha              |           | 1 T                 | 61 SFPDATPLQE NVSSFPDAT(0.5)'                                              |
| Srrlp SRA stem-loop-intera                |           | 1 T                 | 104 ALHGAQT(0.5)'S(0.001)                                                  |
| ENSMUSCag;IgE-binding prot               |           | 1 S                 | 181 GPPYAESPPPCVVR LQGQPYAES(1)'PPC'                                     |
| Nbdle2 Neurobeacin-like prr               |           | 1 S                 | 839 HLSLRTSQVPS S(0.645)QS(0.355)'                                         |
| Srcck Serrate RNA effector                |           | 1 S                 | 4 MGDSDDDEYDR GDS(1)'DDEYDR                                               |
| Lrflfp1 Leucine-rich repeat fl             |           | 1 S                 | 16 KEIDCLSEPQRL EIDCLSL(1)'PEAQQR                                         |
| Ptpnn22 Protein tyrosine phos             |           | 1 T                 | 450 KGPVKRTKSTPF T(0.63)KS(0.185)'T                                         |
| Osbpl3 MKIAA0704 protein;C                |           | 1 S                 | 302 GVPVRHHSNPNLS LHS(0.865)'S(0.13)'                                      |
| Srrm1 Serine/arginine repeat              |           | 2 T                 | 404 RPSSPATPPKPPK HRPS(0.867)'S(0.1)'                                     |
| Srrm2 Serine/arginine repeat              |           | 2 S                 | 1631 RRGSRSSIEPKTK RGS(0.856)RS(0.2)                                        |
| Mast3 Microtubule-associate               |           | 1 S                 | 733 RFSKVSYSSEFLA VYS(0.936)'S(0.06)                                       |
| Gmip GEM-interacting prot                |           | 2 S                 | 440 LDSPTSSPGAGAR S(0.001)'LDS(0.81)'                                    |
| Snx20 Sorting nexin-20                   |           | 1 S                 | 3 MASPEHPGS AS(0.998)'PEHPGS                                             |
| Heatr6 HEAT repeat-containii              |           | 1 S                 | 23 EAPRELSPQDQD EAPREL(1)'PEQDD                                           |
| Gmip GEM-interacting prot                |           | 2 S                 | 436 ESRSLDTPSSPG S(0.001)'LDS(0.83)'                                   |
| Kiia0146 Uncharacterized prot          |           | 1 S                 | 80 EKHELESPKPKTE HLELS(1)'PKPK                                              |
| Gene Symbol | Gene Name | Source 1 | Source 2 | E-value 1 | E-value 2 |
|-------------|-----------|----------|----------|-----------|-----------|
| Wrnip1      | ATPase WRNIP1; Werner helicase-interacting protein 1 | 1 S  | 153 AAAGSASPRWSDE | RPAAAAAAGSAS(1) | 0.89206066 CDK1 CDK1 |
| Nudt5       | ADP-sugar pyrophosphatase | 1 S  | 10 RESTESSPGKHLV | ES(0.006)T(0.006) | 0.89174265 CDK1;CDK1 Polo box |
| Ccdd86      | Coiled-coil domain-containing coiled-coil domain protein 86 | 1 S  | 18 EQLKPLSPNLVP | RLEQLKPLS(1)PENI | 0.891503967 ERK/MAPK WW Group IV |
| Rfc1        | Putative uncharacterized | 1 S  | 155 TKKNKPLSPIKLT | NKPLS(0.999)PIKL | 0.891106755 CDK1;CDK1 WW Group IV |
| Sgk3        | Serine/threonine-proline-rich protein 3 | 2 S  | 126 DSHPHSQDSPEDE | HQS(1)DPS(1)EDE | 0.891027355 CAMK2 CAMK2 |
| Sgk3        | Serine/threonine-proline-rich protein 3 | 2 S  | 129 RHQDPSDEDEEDE | HQS(1)DPS(1)EDE | 0.891027355 CK1;CK2 CK2 |
| Phax        | Phosphorylated adapt | 1 T  | 80 RQKCHNTTPKKEPE | CHNT(1)PPKEPPFP | 0.890709896 CDK1;CDK1 CDK2 |
| Atrx        | Alpha thalassemia/microangiopathy type 2 | 1 S  | 315 DQTSKFSKKSSS | VCDQTSKFS(1)PK | 0.889838049 CDK1;CDK1 CDK2 |
| Snrnp70     | U1 small nuclear ribonucleoprotein 70 | 1 S  | 226 DERPGrPSPLHRD | YDERPGPS(1)PLPH | 0.88944232 |
| Zc3h13      | Putative uncharacterized | 1 S  | 242 KAAVAVASPLDQQ | AAVAS(1)PLLDQQ | 0.889125989 ERK/MAPK ERK/MAPK |
| Bud13       | Budding uninhibited by dariomycin homolog D | 2 T  | 144 RKARHDTDPPSP | HDTP(1)PS(1)P | 0.889046942 CDK2;PI PIM1/2 |
| Bud13       | Budding uninhibited by dariomycin homolog D | 2 S  | 148 HDTPSDSPRRK | HDTP(1)PS(1)P | 0.889046942 CDK1;CDK1 CDK2 |
| Ccny        | Cyclin-Y; Cyclin fold protein 1 | 1 S  | 326 MRKRSASADNLIL | S(0.001)AS(0.999) | 0.887311446 CAMK2;PK PKA/PTK |
| Ddx21       | Nucleolar RNA helicases | 2 S  | 245 PGEESSEETKES | SSNDAPGEES(0.5) | 0.886996629 CK2 CK2 |
| Zc3h18      | Zinc finger CCCH domain protein 18 | 1 S  | 554 KLGVSQSPSRARR | KLGVS(0.031)YS(0) | 0.886839305 CDK1;CDK1 CDK2 |
| Sep-01      | Septin-1; Differentiation protein 6 | 1 S  | 247 VRGRYRSWTVGEV | RYS(1)WGTVEVEN | 0.886053518 CAMK2;PK PKA/PTK |
| Bora        | Protein aurora borealis | 1 S  | 305 PYIDGSCPIKNWS | SPIYIDGCS(1)PK | 0.885347499 CDK1;CDK1 CDK2 |
| Hnrrnu      | Heterogenous nuclear RNA helicase | 1 S  | 3 M5SSSVPVKK | S(0.021)S(0.937) | 0.885190759 |
| Lrch4       | Leucine-rich repeat gene 4 | 2 S  | 31 PSGLPGRSAERA | AAAAVAPLAAGGE | 0.884877444 NEK6 NEK6 |
| Ksr1        | Kinase suppressor of Ras 1 | 1 S  | 392 RLRRTESPVSDI | RTES(1)VPSDINN | 0.884016973 CAMK2;CH CAMK2 |
| Eml4        | Echinoderm microtubule associated protein 4 | 1 S  | 146 QIRAPSPQPSQ | AS(0.062)PS(0.93) | 0.883860704 GSK3 GSK3 |
| Bat21       | Protein BAT2-like; HUL1 | 1 S  | 387 SEKLFSDDEEDEE | LKFS(1)DEDEEDEV | 0.883624032 CK2;NEK6 CK2 |
| Lig3        | DNA ligase 3; DNA ligase | 1 S  | 211 TTGQTVSPGKAV | LTTGQVTS(1)PVK | 0.883470271 CDK1;CDK1 ERK/MAPK |
| Lrrc8c      | Leucine-rich repeat-containing 8c | 2 S  | 210 ENGLVRSQSLKSI | S(0.612)QS(0.409) | 0.883470271 NEK6 NEK6 |
| Tmx1        | Thioredoxin-related | 1 S  | 245 ADEEDVSEEEAE | KVEEVEADEVDS | 0.883022080 CK2 CK2 |
| Itgal       | Integrin alpha L; Putative integrin beta 1 | 1 S  | 1588 LEPLRSDKD_____ | DMGCLEPLRES(1)C | 0.880591758 NEK6;PKA PKA |
| Pdlim2      | PDZ and LIM domain protein 2 | 1 S  | 199 VRVLLHSPPGRPS | VLLHS(0.981)PGRF | 0.880466979 CDK1;CDK1;CDK2 CDK2 |
| Nop58       | Nucleolar protein 58; | 2 S  | 509 IEEELSEECEPT | HIKEELPS(1)ECEP | 0.880359187 CK2 CK2 |
| Nop58       | Nucleolar protein 58; | 2 S  | 521 TSTAVPSPKKEKK | HIKEELPS(1)ECEP | 0.880359187 CDK1;CDK1 ERK/MAPK |
| Hirip3      | HIRA-interacting protein | 1 S  | 564 PSTEGRSPGETYR | NAWNP(0.005)GE | 0.880126738 CK2 CK2 |
| Slep        | Histone RNA hairpin-loop | 1 S  | 7 MACRPSPPGYGS | ACRPS(1)PYPYGS | 0.880126738 CAMK2;ERK WW Group IV |
| Rplp1       | 60S acidic ribosomal protein | 2 S  | 101 EAKKEESEDDEDD | KEEES(1)EES(1)ED | 0.879507476 |
| Rplp1       | 60S acidic ribosomal protein | 2 S  | 104 KEESEEEDDMGF | KEEES(1)EES(1)ED | 0.879507476 CK1 CK1 |
| Nolc1       | MKIA0080 protein; | 1 S  | 701 NSVKFDE_____ | GGGSISVQVNSKFD | 0.879430129 |

*E-values are calculated using BLAST.*
| Protein Name                  | Accession   | Description                  | Bioactivity                  | Score    | Gene Name                  | Description                  | Score    |
|------------------------------|-------------|------------------------------|-----------------------------|----------|---------------------------|------------------------------|----------|
| Plekha5 MKIAA1686 protein;P| 1 S         | 1025 KSPTPESSTIASY TKS(0.002)P'T(0.01) | 0.863781636                 |          | Acin1                      | Apoptotic chromatin           |          |
| Zinc finger protein 82       | 1 S         | 216 SEEKGESDDKEPK SSFSEEKGES(1)D | 0.863036161                  |          | Znf828                      | 1 S                             |          |
| Translation initiation f     | 1 S         | 448 PDOQRTSPASLDF KTS(1)PASLDFPPEP | 0.862366333                  |          | Eif2b4                     | 1 S                             |          |
| La-related protein 1;I       | 1 S         | 22 SRLSGSLCALFS SLS(0.004)GS(0.9) | 0.862291972                  |          | Larp1                      | La-related protein 1;I         |          |
| Eukaryotic translator        | 1 S         | 405 PKPRKGSKVLGDFG KGS(1)KVDGFGDA | 0.86184074                   |          | Eif5b                      | Eukaryotic translator          |          |
| Nucleolar RNA helicas        | 2 S         | 237 NSEAPLSGEDAD TARPONEAPLS(1)G | 0.861771803                  |          | Ddx21                      | Nucleolar RNA helicas          |          |
| Nucleolar RNA helicas        | 2 S         | 244 APQGEESSSETEK SNSSDAPEES(0.9) | 0.861400637                  |          | Ddx21                      | Nucleolar RNA helicas          |          |
| ATP-dependent RNA f          | 1 S         | 594 LTLGVSDELDS RTVQLTDLGV(1)D | 0.860881543                  |          | Pat1                       | Protein PAT1 homolog           |          |
| 3 histone deacetyl           | 2 S         | 179 LPRRSTSPIGGSP RST(0.093)S(0.9) | 0.860733435                  |          | Sudo3                      | Histone H1.5;H1 VAR            |          |
| Actin-binding LIM pro        | 1 S         | 475 ESPRILSPTEPE T(0.032)S(0.911) | 0.856824608                  |          | Ablim1                     | Actin-binding LIM pro          |          |
| Nucleolar uncharacteri       | 1 S         | 191 STWRRSSSGFDR SSS(1)GFNDR | 0.856164384                  |          | Samson1                    | Nuclear receptor core           |          |
| Putative uncharacteri        | 2 S         | 942 FRKLFTSETLTGD KLS(0.614)FT(0.6) | 0.855062628                  |          | Nfkb1                      | Nuclear factor NF-κα            |          |
| cAMP-dependent prot          | 1 S         | 112 RFTRRASVCAEAY Rak(1)VS(1)PPKR | 0.857780065                  |          | Prkar2b                     | cAMP-dependent prot            |          |
| Histone deacetylase          | 1 S         | 182 PLLRKESSPPSLR KES(1)APPCLR | 0.854116843                  |          | Hdac7                      | Histone deacetylase            |          |
| Uncharacterized prot         | 1 T         | 70 NPPSPTSPAAPQ ENPNS(0.084)PPT(1) | 0.853970965                  |          | Cdc215                      | Cell division cycle 2-li       |          |
| Cell division cycle 2-li     | 1 S         | 662 PGDDLSKSEEEK CCLDLPLPELPPG | 0.853825137                  |          | Cdc215                      | Cell division cycle 2-li       |          |
| DNA polymerase delt          | 1 S         | 306 GKRVDLSDEEAEK RVLDS(1)DIEAKET | 0.852369587                  |          | Pold3                      | DNA polymerase delt            |          |
| Eukaryotic translator        | 1 S         | 1187 TPATKRSFSKEVE S(1)FSKEVEER | 0.851643672                  |          | Eif4q1                      | Eukaryotic translator          |          |
| Cbp37                        | 1 S         | 312 TKKRESSEPPAELP SES(1)PPAELPSLR | 0.851643672 14-3-3 bir 14-3-3 bindin |          | Rbm10                      | RNA-binding protein            |          |
| Serine/threonine-prol        | 1 S         | 91 RHRHSPTCPGPF HRHS(0.5)PT(0.5) | 0.85106833                  |          | Vrk3                       | Serine/threonine-prol          |          |
| H/ACA ribonucleoprot         | 2 S         | 59 SSFETSPKKVKC DLNSSFET(0.003)S | 0.850991405                  |          | Dkc1                       | H/ACA ribonucleoprot           |          |
| Transcription elong            | 1 S         | 125 SGSRSYSEPHERQK S(0.001)YS(0.999) | 0.84932903                  |          | Tceb3                      | Transcription elongation       |          |
| DNA-binding protein          | 1 S         | 38 RLEQNGSPLGR LEQNGS(1)PLGR | 0.8492569                  |          | Satb1                      | DNA-binding protein            |          |
Matrin3  Matrin-3  1  S  596  DKSRKRSYSPDGK  S(0.794)YS(0.206)  0.849040584  CAMK2;CK1  PKA
Usp8  Ubiquitin carboxyl-terminal hydrolase 8;Ubiquitin thioesterase 8;Ubiquitin-specific-processing protease 8;Deubiquitinating enzyme 8  1  S  691  KLKRSYSSPDITQ  S(0.01)YS(0.962)S  0.848320326  14-3-3 bIR 14-3-3 binding
Lemd3  Inner nuclear membrane  1  S  140  GFFSDESDVEASP  VLLGFSS(0.003)DE  0.848104486  CK1;CK2  PKA
Lmnb1  Lamin-B1;Lamin-B2  1  S  394  RLKLSPSPSVRR  LSPS(0.598)PS(0.4)  0.847529452  NEK6;NEK6
Pum2  Pumilio homolog 2;Pt  1  S  136  DQKGKASPFEEQD  GKAS(1)PFEDQNF  0.845952119  CK1;CK2
Srrm2  Srrm2 protein;Serine/threonine-protein kinase  1  S  2646  RDSRSLSYSPVER  S(0.001)LS(0.998)  0.845737483  CAMK2;PKA;AKT
Th rap3  Thyroid hormone receptor  1  S  405  PFRGQSPKRYKL  TDSKPFGRGS(0.08)  0.845522956  CDK1;CDK2
Psmd9  Putative uncharacterized protein  1  S  126  MNRRLASNSPVL  RLAS(0.876)NS(0.::)  0.844951415  CAMK2  CAMK2
Pak2  Serine/threonine-protein kinase  1  S  2  _______MDNGELE  S(1)DNEGELDKPPA  0.844380647
Whsc1l1  Histone-lysine N-methyltransferase NSD3;Nuclear SET domain-containing protein 3;Wolf-Hirschhorn syndrome candidate 1-like protein 1 homolog  1  S  557  DRLIISSPSQRE  LIIS(0.002)S(0.95)S  0.844380647  Polo box;Polo box
Sf rs18  Splicing factor, arginines  1  S  211  FRDROQPSIALPV  QRS(1)PIALPVKQR  0.843597098  CAMK2;PKA;AKT
Helb  DNA helicase B  1  S  1015  FPFDDEEPSKFRM  RIDGFPFDDEES(0.::)  0.842530963  CDK1;CDK2
Srrm2  Srrm2 protein;Serine/threonine-protein kinase  1  T  1926  RSRSSRTSPVTR  S(0.011)RT(0.494)  0.842034355  14-3-3 bIR 14-3-3 binding
Lig3  DNA ligase 3;DNA ligase III;Polydeoxyribonucleotide synthase [ATP] 3;Putative uncharacterized protein;DNA ligase;DNA ligase III;Polydeoxyribonucleotide synthase [ATP] 3  1  S  919  KLVKSSPSPVQVM  LAVKS(0.273)S(0::)  0.840618695  CDK1;CDK;Polo box
Kpna2  Importin subunit alph  1  T  62  FPDATSPQLQNR  NVSSPPDDAT(0.06)  0.840265524
Nucks1  Nuclear ubiquituous protein  1  T  179  RLKATVTPSPVQK  LKATV(0.5)PS(0.5)  0.839560071
She  SH2 domain-containing protein  1  S  100  PKDRLSRDLSQG  LS(0.5)RS(0.5)LQG  0.839348665  CK1;PKA;PKA
Api5  Apoptosis inhibitor 5;  1  S  464  ETDDSSGPKSKSP  TSEDT(0.009)S(0::)  0.838926174  CDK1;CDK2
Mark2  Serine/threonine-protein kinase  1  S  483  TNRSNSPLLRDA  SRNS(1)PLLRD  0.83855801  CK1;PKA;PKA
Srrm1  Serine/arginine repetitive matrix protein 1;Plenty-of-prolines 101;Serine/arginine repetitive matrix 1;Serine/arginine repetitive matrix protein 1;Plenty-of-prolines 101  1  S  779  KIKKAASPSPQSV  AAS(1)PSQSVSR  0.838574423  CHK1;PKD;PKD
Crrks  Cell division cycle 2-r  1  T  1079  EPVKNNSPPQPP  NN(1)PAPQDPAPV  0.838082467
Cdk7  Cell division protein k  1  T  170  SNPRAYTHQVTR  ATY(1)HQVTR  0.837310558  CAMK2;CAMK2
Pdlim2  PDZ and LIM domain protein  1  S  204  HSPQPSPPRFSS  VLLHS(0.009)PGRF  0.836750063  PKA;PKA
Znf828  Zinc finger protein 82  1  S  603  LLDKALPSPKSLK  KLLDEALS(1)PSSK  0.835980605
Dock2  Dedicator of cytokinesis 1  1  T  1700  RRSSKRTRRSVV  T(0.964)KRS(0.018)  0.835561497  FHA KAPP FHA KAPP
Rbl1  Retinoblastoma-like protein  1  T  369  RSAPSTPLGTRR  SFAPS(0.005)T(0.9)  0.835491687  ERK/MAPK WW GroupIV
Pdlim2  PDZ and LIM domain protein  1  S  134  LSPRRCPSFSTPP  SACFSPSVS(0.002)L  0.835352101  CAMK2;ERK WW GroupIV
Pdlim2  PDZ and LIM domain protein  1  S  142  FSPTPPSPVALS  SACFSPSVS(0.002)L  0.835352101
Aak1  AP2-associated protein  1  T  618  QKVGLSTPSPPSK  VGS(0.001)LTS(0.95)  0.83500334  FHA KAPP FHA KAPP
Fam53c  Protein FAM53C  2  S  232  PPQRRFSLSPSLG  RFS(1)LS(0.989)PS  0.834445928  AURORA;PKA;AKT
Fam53c  Protein FAM53C  2  S  234  QRRFSLSPSLQFP  RFS(1)LS(0.989)PS  0.834445928
Mybbp1a  Myb-binding protein  1  S  1253  PSNPTLSPTPAK  SPAPSNPT(0.06)LS  0.834097923
H2-K1  H-2 class I histocompatibility antigen  2  S  350  APGQTSDDLSPLD  GGDYALPGS(0.01)  0.834028357  CK1;CK1
UPF0404 protein C11  1  T  28  LLDDSSTPTKALN  KLLLDPS(0.046)S(0::)  0.8336807  CDK1;CDK;Polo box
Zc3h18  Zinc finger CCCH don  1 S  552 KKKLGVSVSPSRA LGVS(0.556)VS(0.: 0.819202097 GSK3;NEK NEK6
Zfp3612  Butyrate response fac  1 S  28 GFLFRHSASNLHA RHS(0.995)AS(0.0) 0.819000819 CAMK2;PK PKA/AKT
Ext13  Exostosin-3;Glucl  1 S  141 ISQTEHSYKELMA NVIS(0.007)QT(0.1) 0.81799591 CK2;PLK1 PLK1
Mcm2  DNA replication licen  1 S  108 VEELTASQREAEE DYRPIPELVDYEAEG 0.817661488 CK2;NEK6 CK2
Srrm2  Srrm2 protein;Serine  1 S  1927 RSRSRTSPVTRR S(0.011)RT(0.494) 0.817394147 CK1;PKA PKA
Pat1  Protein PAT1 homolo  1 T  178 ALPRTSPLIGS RST(0.924)S(0.076) 0.816526496 CAMK2;Clr CHK1/2
Srrm2  Srrm2 protein;Serine  2 T  1370 ETVQVPTRSRERS VSSPVIET(0.002)V 0.815461143 CDK1;CDK2
Gpatch4  G patch domain-conti  1 S  258 QGTAIGSSEEAAA QGTAIGS(1)EEEEE 0.814597589 CK1;CK2 CK2
Hdac2  Histone deacetylase  2 S  422 ACDEFSDESEDEG IACDEFS(1)DS(1) 0.81393456 CK2 CK2
Hdac2  Histone deacetylase  2 S  424 DEEFSDESEDEG IACDEFS(1)DS(1) 0.81393456 CK2 CK2
Lmna  Lamin-A/C;Lamin-A/C  2 S  390 EERLRLPSPTSQ LRLS(1)PS(0.597)F 0.813868316 NEK6;PKA PKA
Lmna  Lamin-A/C;Lamin-A/C  2 S  392 RLLRLPSPTSQRS LRLS(0.993)PS(0.6) 0.813868316 NEK6 NEK6
Edc4  Enhancer of mRna-  1 T  731 QASPSRTRSDEV T(0.608)RS(0.392) 0.813206473
Transmembrane prot  1 S  195 WRPRQGSLEDPDWG QGS(1)LEPDWGLQ 0.812875955 CAMK2;PK PKA/AKT
Lkap  Limkain-b1;Limkain-t  1 T  1091 WLLRIVSKPSVNPQ S(0.16)KS(0.84)PV 0.811424862 CAMK2;Clr CHK1/2
Pum1  Pumilio homolog 1;Pt  1 T  112 SKHRWPTGDHIAI HRWPT(1)GDHIAI 0.811161583 CAMK2 CAMK2
Acin1  Apoptotic chromatin  1 S  477 PAQLQRSLSLPG S(0.989)LS(0.011) 0.810766986 NEK6 NEK6
Hnrnppa3  Heterogeneous nucle  1 S  359 GGRSGSGPGGYGGY S(0.266)S(0.052)C 0.808799741 CK1 CK1
Prkd2  Serine/threonine-pro  1 S  212 SRLGSSESLPCT LGS(0.5)S(0.5)ESL 0.808734331 NEK6 NEK6
Zc3h18  Zinc finger CCCH don  1 S  915 RPLPSQKGSKSV KRPLS(0.5)PQS(0.9) 0.808342091 CK1;GSK3 CK1
Runx3  Run-trelated transcrip  1 T  28 STSRRTTPSTAF RFT(0.976)PPS(0.0) 0.80749354 CAMK2;Fh PKA
Tbc1d10l  TBC1 domain family  1 S  664 AVGGAPSPPPV RAVGGAP(1)PPPPV 0.807232806
Arid5a  AT-rich interactive do  1 S  378 CRHGRSPNPKDIQ HGARS(1)PNKDIQI 0.805931657 CDK1;CDk CDK2
Sep-09  Septin-9;SL3-3 inte  1 S  80 AARLVDLSQRPS LVDS(0.938)LS(0.0) 0.805412371 NEK6 NEK6
Brip1  Fanconi anemia group  1 S  1103 LPDLTSGPTEEA DLLPDT(0.085)ELS 0.8027615
Nup160  Nuclear pore complex  1 S  1123 SDRPGASPKRNDH LIRPEYAVIQPASC 0.801760231 CDK1;CDk CDK2
Mybpb1a  Myb-binding protein  1 T  1251 PAPSNTLSPTP SPAPSNTP(0.5)LS(0.9) 0.799936005 CK1 CK1
Fnbp4  Formin-binding protei  1 S  486 GSVGSGSRSPDIS ALEEGDSVSQS(0 0.798785846 CDK1;CK1 Polo box
Srrm2  Srrm2 protein;Serine  2 S  2360 MLDRARSTPPRSA ARS(0.97)RT(0.994) 0.797575371 CAMK2;Clr CHK1/2
Lrrfip1  Leucine-rich repeat fl  1 S  88 TSSRRGSGDTSIS RGS(0.999)GDT(0.0) 0.797066794 CAMK2;Clr PKA
Gigfy2  PERQ amino acid-rich  1 T  25 SSGGSITSPPLSP ALSSGGS(0.001)IT 0.796241739
Ablim1  Actin-binding LIM pro  1 T  473 LGESPRTLSPTPS T(0.746)LS(0.227) 0.794533609 CK1 CK1
Hsp90aα;Heat shock protein H  1 S  231 ERDKEVSDDEAAE ERDKEVS(1)DEDAE 0.794281176 CK2 CK2
Melk  Maternal embryonic li  1 T  516 TPKKKGTVNGGSL KGT(0.5)NVFGS(0.0) 0.794028903
| Pum2 | Pumilio homolog 2;Pt   | 2 T | 174 CKDFNRTPGSRQA      | DFNRT(0.96)PGS(0.04) | 0.79358781 FHA KAPP FHA KAPP |
| Rps6ka1 | Putative uncharacteri... | 1 T | 359 TETSTSRTDPSG       | T(0.996)PRDS(0.004) | 0.793335978 CDK1;FCDK1          |
| Lrrfip1 | Leucine-rich repeat fl | 1 T | 2 MTSPGAT          | T(0.625)S(0.375)P | 0.792707955 CK2 CK2             |
| Fam122b | Protein FAM122B;Pro:G | 2 T | 112 PKRIDFVPSPAP | RIFDT(0.93)PVS(0.07) | 0.792267469 FHA KAPP FHA KAPP |
| Syt3 | Synaptotagmin-like p   | 1 S | 242 VTSRKAISPDLK      | KAS(0.998)T(0.002) | 0.790826414 CAMK2;CPKA           |
| Helb | DNA helicase B         |     | 945 GFAQSPSPRPGG     | LGSCAPSTGFAS(0.998) | 0.790638836 CK1 CK1             |
| Osbp3 | MKIAA0704 protein;C   | 1 S | 303 PVLHSSNPNLST | LHS(0.001)S(0.999) | 0.790263948 NEK6 NEK6           |
| Sp2 | Transcription factor S | 1 S | 79 PAPLPLSPCKNSF    | KLVPIKAPL(0.015)P | 0.789265983 CDK1;CDK2;Group IV  |
| Sdld1 | Protein SDA1 homolo   | 1 S | 585 KYLEIDSDEESRG    | KYLEIDS(1.000)DEER | 0.786658276 CK2;GSK3 CK2        |
| Pdc4d | Programmed cell dea   | 1 S | 76 DSGRGSVDNSNGS    | DSGRGS(1.000)VSND | 0.785052599 CAMK2 CAMK2         |
| Eif4enf1 | Eukaryotic translator | 2 S | 73 ASLYPASGRSSPV   | WHAS(0.015)LYPA(0.985) | 0.784744566 GSK3 GSK3           |
| Eif4enf1 | Eukaryotic translator | 2 S | 76 YPASGRSSPVESEL | WHAS(0.015)LYPA(0.985) | 0.784744566 CK1 CK1             |
| Eif4enf1 | Eukaryotic translator | 2 S | 77 PASGRSSPVEGLK | WHAS(0.015)LYPA(0.985) | 0.784744566 CK1;CK2;Polo box    |
| UPE404 | protein C11           | 1 S | 30 DPSSTPTKALNGA   | KILLDP(0.003)S(0.998) | 0.78146683 CK1;FHA2 CK1         |
| Thumpd1 | THUMP domain-conta  | 1 S | 8 ATAAQQSPQPVAG   | AT(0.001)T(0.001) | 0.781983109 CK1 CK1             |
| Mtmr3 | Myotubularin-related  | 1 S | 632 PLASRRSSDPSLN  | RS(0.932)S(0.068) | 0.781494217 CK1;GSK3 PKA        |
| Atrip | ATR-interacting prote | 1 S | 224 PSVSHVPRKGS   | TNKPAASPVS(0.015)LPS(0.985) | 0.781433148 CDK1;CDK2 CK2 |
| Nfkb1 | Nuclear factor NF-κα    | 2 S | 944 KLSFE3LTGSDP | KLS(1.000)FTES(1.000)LTG | 0.780883961 CK1 CK1             |
| Eif5b | Eukaryotic translator | 1 S | 114 SFEDNDESELDK | TSFDEN(0.003)S(0.997) | 0.780335544                    |
| Vehp1 | Ventricular zone-expr  | 1 S | 1126 KLLKSTSSSAPT | S(0.117)T(0.883)S(0.000) | 0.776276976 CHK1;PKC PKD         |
| Tcof1 | Treacle protein;Treacl| 1 S | 27 GSGLTRPSSEEI | T(0.532)P(0.489) | 0.775374118 FHA KAPP NEK6       |
| Ralbp1 | RalA-binding protein  | 1 T | 189 LLSTWRSSGFGN | S(0.733)S(0.237)S | 0.774893452 CK1 CK1             |
| Samsn1 | Putative uncharacteri... | 1 S | 655 GARIDKSPPLGVN | IKDS(0.003)PLG(0.997) | 0.774053719                    |
| Tut1 | U6 snRNA-specific ter  | 1 S | 1150 AOMKAASCEALPG | AVS(1.000)ECLGPPLD(0.997) | 0.77381413 |
| Kif21b | Kinesin-like protein K | 1 S | 865 LDPDVTEDEDDPP | DLDPDV(0.003)EDEE | 0.773694391 CK2 CK2             |
| Baz1a | Bromodomain adjacent   | 1 T | 616 QGQKVGSLTPPS | VGS(0.631)LT(0.268) | 0.773574689                    |
| Aak1 | AP2-associated protei... | 2 S | 1303 LAKDASAPIQKKK | DSAS(1.000)IQK | 0.77164448                          |
| Tcof1 | Treacle protein;Treacl| 1 S | 24 SPLSPGSPGPAAR | LSPLS(0.003)PGS(0.997) | 0.771485882 CK1;ERK/ERK/MAPK    |
| Map4 | Microtubule-associate  | 1 S | 785 TVSKATSPSTLV | AT(0.065)S(0.775) | 0.771247879 CHK1;CK1 PKD         |
| Zfc3h1 | Zinc finger, C3H1-typ  | 1 S | 506 RRARSKSSDSDLR | S(0.027)KS(0.988) | 0.771188401 CAMK2;PKPAK ACT     |
| 2310014Q010104 | Phostensin;Protein p... | 1 S | 511 SCLVKGSPHERHK | SCLVKG(0.010)PERHH | 0.770297335 CDK1;CDK2 CK2       |
| Rbmx | Heterogeneous nuclea... | 1 T | 213 RDDGYSTKSYSS   | DVYLS(0.036)PRDI | 0.770119369 FHA KAPP FHA KAPP   |
Etv6  Transcription factor E;ETS translocation variant 6;ETS-related protein Tel1
Psd4  PH and SEC7 domain
Srrm2  Srrm2 protein;Serine
Jakmip1  Janus kinase and mic
H2-K1  H-2 class I histocomp
Rab11fip  MFL00294 protein;R
5730590;Uncharacterized protein
Pat1  Protein PAT1 homolo\c
Ercc6l  DNA excision repair p
Srrm2  Srrm2 protein;Serine
Atrx  Alpha thalassemia/mi
Clasp2  CLIP-associating prot
Ranbp9  Ran-binding protein S
Pdc4  Programmed cell deal
Eff4g1  Eukaryotic translato\r
Tcof1  Treacle protein;Treacl
Melk  Maternal embryonic fi
Casc3  Cancer susceptibility
Rnf219  RING finger protein 2
Gapvd1  GTPase-activating prc
Mybbp1a  Myb-binding protein
Slt1  Signaling threshold-r
Thrap3  Thyroid hormone rece
Ifb2p2  Putative uncharacteri
Tik2  Tousled-like kinase 2
Nup153  Putative uncharacteri
Snip1  Smad nuclear-interac
Snip1  Smad nuclear-interac
Tcof1  Treacle protein;Treacl
Lipe  Putative uncharacteri
Mepce  7SK snRNA methylph
Srrm2  Srrm2 protein;Serine
Atrx  Alpha thalassemia/mi

0.769289945 CAMK2;Po Polo box
0.768875903 CHK1;PKD PKD
0.768698593 CK1;Polo lPolo box
0.768462307 CAMK2;Ct-PKA
0.766636001 CK1;PLK;PLK
0.766459723 NEK6
0.765228038 CDK1;CDK CDK2
0.764935363 PKA PKA
0.764701384 CAMK2;Ct CAMK2
0.763300511 CDK1;CDK CDK2
0.761266748 CDK1;CDK CDK2
0.761266748 CAMK2;Ch CH1/2
0.760514108 CDK1 CDK1
0.75999392
0.759301443 PKA PKA
0.758840492 CDK1;CDK CDK2
0.7583801 CAMK2;Ct WW GroupIV
0.758265089
0.757288906 CDK1;CDK Polo box
0.756200847
0.754200491 CK1 CK1
0.754200491 CK1 CK1
0.754200491 CK1 CK1
0.754200491 CK1 CK1
0.754200491 CK1 CK1
0.751201923 CK1;PKA PKA
0.748727164 CAMK2 CAMK2
0.748390959
0.746602957 CK1 CK1
0.74651729
0.745934656
0.745934656
0.744269128
0.74028121 14-3-3 bir 14-3-3 bindin
0.738497895
| Gene Name  | Description                    | Score  | Uniprot ID | Gene Name  | Description                    | Score  | Uniprot ID |
|-----------|--------------------------------|--------|------------|-----------|--------------------------------|--------|------------|
| Fnbp1     | Formin binding protein         | 1 S    | 295 PMKRTVSDNLSLSS | TVS(0.999)DNS(0.) | 0.734861846 CAMK2; CK1 PKA |
| Rb1       | Retinoblastoma-assoc           | 3 S    | 788 PYKFSSSPLIPG  | FS(0.096)S(0.119) | 0.734376147 CDK1; CDK Polo box |
| Rb1       | Retinoblastoma-assoc           | 3 S    | 800 GGNIYISPLKSPY | FS(0.096)S(0.119) | 0.734376147 CDK1; CDK CDK2 |
| Rb1       | Retinoblastoma-assoc           | 3 S    | 804 YISPLKSPYKIE  | FS(0.096)S(0.119) | 0.734376147 CDK1; CDK CDK2 |
| Wipf1     | WAS/WASL-interactin           | 1 S    | 340 SAPPPLSPGRGSP| NLS(0.003)LT(0.00) | 0.733621891 CDK1; CDK CDK2 |
| Ap3d1     | AP-3 complex subunit          | 1 S    | 825 NAEAVKSPEKEVG | NAEAVKS(1)PEKEG | 0.732278852 CDK1; CK1 ERK/MAPK |
| Uba2      | SUMO-activating enz            | 1 S    | 16 ELAEEAVSGGRLV  | GLPRELAEEAVS(1)G | 0.731207956 |
| Pi4kb     | Phosphatidylinositols 4       | 1 T    | 292 SSNLKRTASNPKV | T(0.845)AS(0.155) | 0.731154493 NEK6; NIM NIMA |
| Mcm2      | DNA replication lic            | 1 S    | 11 SESLSASSPARQR  | AESS(0.001)ES(0.) | 0.730994152 CK1; NEK6 NEK6 |
| Tfdp1     | Transcription factor D        | 1 S    | 23 FIDQNLSPGKGVV  | VFDQNLS(1)PGK | 0.729128691 CDK1; CDK CDK2 |
| Fam122a   | Protein Fam122A               | 2 S    | 140 IDIFIPVSPAPSP | RIDFIPV(1)PAPSP | 0.728438228 ERK/MAPK WW GroupIV |
| Fermt3    | Fermin family homo            | 1 S    | 8 AGMTASGDYIDS   | T(0.022)AS(0.978) | 0.72743144 |
| Ralbp1    | RalA-binding protein          | 1 S    | 29 GLTRTPSSEEISP | T(0.015)PS(0.891) | 0.724847782 CAMK2; CK1 CK1/2 |
| Rnf12     | Putative uncharacter           | 1 S    | 229 RAERSRSPLQPTS | S(0.022)RS(0.978) | 0.724060531 CAMK2 CAMK2 |
| Wdr42a    | WD repeat-containing          | 1 S    | 100 SRGHGHSDEEEDEE | GHGH(1)DEEDEEI | 0.723536647 CK2 CK2 |
| Rrp1      | Ribosomal RNA proce           | 1 S    | 434 QNKEAGSEAESSS | EAGS(1)EAESSAC | 0.722908986 CK2; GSK3 CK2 |
| Sash3     | SAM and SH3 domain            | 1 S    | 26 LSLQRSSSFKFDA  | S(0.247)S(0.732)S | 0.721240534 PKA PKA |
| Chd8      | Chromodomain-helic             | 2 S    | 1422 DDLVEFSDLESED | HFSTLKDSDLVEFS | 0.719631549 CK2; GSK3 CK2 |
| Chd8      | Chromodomain-helic             | 2 S    | 1426 EFDLSEDLEDER | HFSTLKDSDLVEFS | 0.719631549 CK1 CK1 |
| Vim       | Vimentin; Vimentin            | 1 S    | 56 RSLLSSPGGAYV  | SLYSSS(1)PGGYV | 0.719320961 Polo box Polo box |
| Srrm2     | Srrm2 protein; Serine          | 1 S    | 2656 VERRQPSQPSR  | RQPS(0.995)PQPS | 0.71787509 CAMK2; GSK CAMK2 |
| Rlpr      | Leucine-rich repeat-c          | 1 S    | 12141 PSSRTTPSPAPDLI | RT(0.158)S(0.807) | 0.715665927 CAMK2; PKA PKA |
| Tcfe2     | Putative uncharacter           | 2 S    | 172 VSPAQGSPKPA  | FAAHVS(0.037)PAC | 0.714949566 CDK1 CDK1 |
| Tcfe2     | Putative uncharacter           | 2 S    | 180 KPPAAPSPGVAR  | FAAHVS(0.037)PAC | 0.714949566 |
| Tagln2    | Transgelin-1; SM22-1           | 1 S    | 7 MANRPGSYLRSRE  | ANRPGS(1)YGLSR | 0.714183688 CAMK2; GSK CAMK2 |
| Rasal3    | RAS protein activator         | 1 S    | 8188 KSQSLRSFQAGS | S(1)FQAGSWASR | 0.713012478 CK1 CK1 |
| Rbm6      | RNA binding protein; 1        | 1 S    | 1024 KLSQFDSERPARR | LQSFDS(1)PER | 0.712910815 CDK1; CDK CDK2 |
| Hcfc1     | Host cell factor C1; Ht        | 1 S    | 666 TITLKVSPISVPG | T(0.004)IT(0.012)I | 0.711997152 CK1; ERK/ ERK/MAPK |
| Anln      | Actin-binding protein         | 1 S    | 180 TEDAASKPSKKPI | AAS(0.983)PS(0.0): | 0.71063104 CDK1; CDK CDK2 |
| Hinnpa3   | Heterogeneous nuclear          | 1 S    | 357 SFGGRSSGSPYG  | S(0.278)S(0.676)C | 0.709018718 PKA PKA |
| Lrch4     | Leucine-rich repeat a          | 1 S    | 281 SRPSPFSPCAED  | GAALGLVPSRPPS | 0.704820975 |
| H2-K1     | H-2 class I histocomp         | 2 S    | 347 YALAPGQSRTDLS | GGDYALAPGS(0.66) | 0.70471635 |
| Nadk      | NAD kinase; Poly(P)/A         | 1 S    | 48 AKRSRLSASAPALG | SLS(1)APALGSTK | 0.704523038 CAMK2; CK1 PKA AKT |
| Dock5     | Dedicator of cytokine         | 1 S    | 1765 KTPRKPKSQVLQV | S(1)LQVLSR | 0.702888873 CAMK2 CAMK2 |
Gigyf1  PERQ amino acid-rich with GYF domain-containing protein 1;GRB10-interacting GYF protein 1  S  413  LSPRISSSPGPGP  IS(0.061)S(0.939)  0.702247191 CAMK2;Po Polo box  
Mcm2  DNA replication licenses  1 S  27  SDPLTSSPGSSR  ISDPLTS(0.001)S(0.001)  0.700623555 CDK1;CDK Polo box  
Protein KIAA1967 homolog  1 S  222  KPRHDLSPYRVLH  HDLS(0.997)PYRFV  0.69946363 CK1;CDK CDK2  
Kri1  Protein KR11 homolog  1 S  148  YVDEDNSGETVD  GGYKVEDNS(1)D  0.69890701 CK2  CK2  
Srrm2  Srrm2 protein;Serine  1 S  1151  IPRDKFSPQTDRP  DFKS(0.936)PT(0.0)  0.697301443  
Prkd2  Serine/threonine-prol  1 S  211  HSVRGLGSSLEPC  LGS(0.94)S(0.06)E  0.696961249 CAMK2 CAMK2  
Rbl1  Retinoblastoma-like protein  1 S  368  KRSPAPFPTLTRGL  SFAPS(0.799)T(0.1)  0.69666918 CK1 CK1  
Tnfrsf8  Tumor necrosis factor  1 S  351  LTQPRQGSGVTDTP  S(0.982)GS(0.018)  0.6951668578  
Aftph  Aftiphilin;Aftiphilin  1 S  151  GQLRSFSPGDFRTDK  SFS(1)PGDRTDK  0.693529371 CAMK2 CAMK2  
Nipbl  Nipped-B-like protein  2 T  2661  NNTAEDDEEDED  NNTAED(1)EDEES  0.692185229 CK2  CK2  
Nipbl  Nipped-B-like protein  2 S  2666  DTEDEEDGEDGDRG  NNTAED(1)EDEES  0.692185229 CK2  CK2  
Rasal3  RAS protein activator  1 S  261  ALGSRESLATSLTE  DGPPS(0.081)LAG  0.691897876 AURORA;AURORA  
Znf828  Zinc finger protein  82  1 S  605  DEALSPSSKKKLLKK  KLLDEALS(0.049)P  0.6900835 NEK6 NEK6  
Mcm2  DNA replication licenses  1 S  26  ISDPLTSSPGGRS  RIS(0.001)DPLT(0.0)  0.688562969  
Mcm2  DNA replication licenses  1 S  12  ESLSASSPARQRR  AEESELSASS(1)P  0.688468158 CDK1;CDK Polo box  
Akna  AT-hook-containing tr  1 S  302  RFTGVSVSLSTLR  FTS(0.005)VS(0.0)  0.685871056 CK1 CK1  
Map4k1  Mitogen-activated prc  1 T  366  PAHFGSTSRSQL  LYPPAHFGS(0.065)  0.685494272  
Prkar1a  Putative uncharacteri  2 S  212  SREDEISPPPPNP  TDSDREDEIS(1)PP  0.684088111  
Raptor  Regulatory-associate  1 S  722  RLRSSVSYGNIRA  SVS(0.006)S(0.994)  0.682966808 CK1 CK1  
Rasal3  RAS protein activator  1 S  847  PVLRTQSVPARRP  T(0.999)T(0.999)  0.68212824 CAMK2;Cl CAMK2  
Rbmx  Heterogeneous nuclear  1 T  163  PPPKRSTPSGVR  RS(0.081)T(0.685)  0.680503573 PKA;Polo I Polo box  
Cfbf  Core-binding factor si  1 S  173  RRQODPSGSGNLG  RQQDPS(0.982)PG  0.678195999  
Cfbf  Core-binding factor si  1 S  176  QDPSGSNGLG  RQQDPS(0.105)PG  0.677828238 CK1 CK1  
Lig1  DNA ligase 1;DNA lig  1 T  93  EDEAGPTKVQPPK  VDQVLSCEGEDED  0.676790431 CDK1;ERK/MAPK  
6330577 Uncharacterized prote  1 S  67  TRENPPSSPTSPA  ENPPS(0.993)PPT(1)  0.675904222 ERK/MAPK WW GroupIV  
Ampd2  Adenosine monophos  1 S  63  RGLGASPLQSAR  SGLGAS(1)PQ  0.675584383 GS3;NEK6  
Fam122a  Protein FAM122A  2 S  144  PVSPAPSPTP  RICDFIPS(1)  0.674354306 CDK1;CDK CDK2  
Akap13  Putative uncharacteri  1 S  1892  WKFSLHSTDSLNKI  FLHLS(0.5)T(0.5)C  0.67335533 NEK6 NEK6  
Akap13  Putative uncharacteri  1 T  1893  KFLSHSTSRLN  FLHLS(0.5)T(0.5)C  0.67335533 CK1;FHA2 CK1  
Zc3h8  Zinc finger CCCH don  1 S  67  LGNAATSPKSLLR  HLGNAAT(0.087)S(0.087)  0.673083395 CDK1 CDK1  
Ubap2l  Ubiquitin-associated protein  1 S  634  PSSISSSPQKDLT  RYPPSSIS(0.009)S(1)  0.672721157 CDK1;CDK Polo box  
Rbm3  Putative RNA-binding  1 S  133  GRSRYGSQGQGY  SRDYRS(0.999)L  0.671501477 CAMK2;C PKA/ACT  
Rgs3  Regulator of G-protei  1 S  712  LRRRTHESEGSSLQ  RTHS(0.992)EGS(0.008)  0.665778961 CAMK2;PKA/ACT  

| Gene   | Description                              | Uniprot ID | Swiss-Prot ID | Description                      | Accession    |
|--------|------------------------------------------|------------|---------------|-----------------------------------|--------------|
| Sf4    | Splicing factor 4                         | 1 S        | QRDIDAPSPLSV  | DIDAS(0.993)PS(0)                | 0.665690321 |
| Sep-09 | Septin-9;SL3-3 integrin                   | 1 S        | 85 SLKSLRPSGKPSLR | LVDS(0.001)LS(0.04)          | 0.66414924 CDK1;CK1CDK1 |
| Srrm2  | Srrm2 protein;Serine                      | 2 T        | LMKSLQTPPDQNLS | S(0.001)MQLQ(0.9)              | 0.669051982 FHD1 Rad;FHA1 Rad53p |
| Srrm1  | Serine/arginine repeat                    | 1 S        | 781 KKAASPSPQSVVR | KAAS(0.034)PS(0.0)          | 0.659804698 |
| Clasp1 | CLIP-associating protein                  | 1 S        | 1126 EFKFSR5QEDLNE | FS(0.002)FRS(0.95)         | 0.659543596 CK1;CK1 |
| Hjrup  | Holliday junction recc                    | 1 S        | 567 YQKCYLSQPRAVK | YCLS(1)POR                | 0.65372952 CDK1;CDK2 |
| Selplg | Putative uncharacteri                     | 1 T        | 411 RDGDLLTLSFLSF | TEPSGDRDGGDLT               | 0.650364204 FHA KAPP,PLK1 |
| Zfp280b| Zfp280b protein                           | 1 S        | 121 ERSTSDPIAEPS | S(0.264)T(0.053)C         | 0.650195059 CK1; CK1 |
| Srrm2  | Srrm2 protein;Serine                      | 2 S        | 1334 MKEQSRSSSRSSS | S(0.513)S(0.446)R         | 0.649182031 GSK3;GSK3 |
| Srrm2  | Srrm2 protein;Serine                      | 2 S        | 982 DQNLSGSKSPCPSQKS | S(0.005)MQLQ(0.9)        | 0.647081662 NEK6;NEK6 |
| Srm2   | Srm2 protein;Serine                       | 2 S        | 984 NLSGSKSPCPSQKS | S(0.038)MQLQ(0.9)       | 0.647039793 CK1;CK1 |
| Coro1a | Coronin-1A;Coronin-1                     | 1 T        | 424 TPEPSGTSSDTTV | RAT(0.05)PEPS(0.1)       | 0.64599432 FFA KAPP FKA KAPP |
| Adam19 | Disintegrin and metal                     | 1 T        | 781 KRKVTNTPESLRK | KVTNT(1)PESLR              | 0.63991809 FHA KAPP FKA KAPP |
| Arhgef1| Rho guanine nucleotide                    | 1 T        | 432 GPTTRATPEPGDD | RAT(1)PEPDDGE0            | 0.63771431 CAMK2;PK PKA |
| Dstn   | Destrin;Actin-depolyr                     | 1 S        | 3 MAGSVQVAD | AS(1)GVQADEVCI             | 0.635162602 |
| Tmpo   | Putative uncharacteri                     | 1 T        | 207 LKGRAKTPVTTLK | AKT(1)PVTLK               | 0.634799721 CAMK2;CAMK2 |
| Arhgef1| Rho guanine nucleotide                    | 1 S        | 386 RLGRSELSRVSQDR | LGRS(0.003)ES(0.1)      | 0.634115409 CAMK2;PK PKC |
| Klf13  | Krueppel-like factor 1                    | 1 S        | 163 SRADLSPQRKHK | SRADLES(1)PQRK          | 0.63081962 CDK1;CDK2 |
| Crkl   | Crk-like protein                          | 1 S        | 184 VEKLVRSSPHGHK | LVR(0.006)S(0.0)        | 0.629063976 NEK6;NEK6 |
| Usp10  | Ubiquitin carboxyl-terminal               | 1 T        | 208 MPRCTDSQPVNDT | T(0.134)CDS(0.86)       | 0.628930818 |
| Extl3  | Exostosin-like 3;Glucis                    | 1 T        | 138 KNVISQTEHSYKE | NVIS(0.008)QT(0.5)       | 0.62845661 FHA KAPP FKA KAPP |
| Pdcd4  | Programmed cell death                     | 1 S        | 94 GAVAPTSPGKRLL | SGVAPV(0.003)S           | 0.62652716 CDK1;ERK WW GroupIV |
| Reps1  | RafB-associated Ep                        | 1 S        | 272 NEIRRSSSYEGR | RoQ(0.833)S(0.14)        | 0.623791404 CAMK2;PKK;AKT |
| Sp100  | Nuclear autoantigen                      | 1 S        | 314 DRGDDSTDTESSI | DRGGDT(0.075)S(0)      | 0.619885941 CK2;GSK3;CK2 |
| Crkrs  | Cell division cycle 2-r                   | 1 S        | 677 LPPGDPSPDSPPE | HLTDLPLLPELPG            | 0.61749529 GSK3;GSK3 |
| Lbr    | Lamin-B receptor;Int                    | 1 T        | 154 HMEKKNATYPDKQD | NAT(1)PDKQDER           | 0.61421886 CDK1;CDK2 |
| Rbl1   | Retinoblastoma-like p                     | 1 S        | 1036 ISGDADSPAKRLC | VIAISGDADSA(1)PAI      | 0.61346933 CDK1;CDK2 |
| E2f8   | Transcription factor E                    | 2 S        | 412 DRRKISSAPSPSV | KIS(0.063)S(0.937)      | 0.612233274 GSK3;GSK3 |
| E2f8   | Transcription factor E                    | 2 S        | 415 KISSAPSPVSKN | KIS(0.063)S(0.937)      | 0.612233274 CK1;CK1 |
| Tmpo   | Putative uncharacteri                     | 1 T        | 317 TEFSITTRTPKK | HASSILPITEFSS(0)0i     | 0.608272506 CK1;CK1 |
| Sash3  | SAM and SH3 domain                       | 1 S        | 27 LRQRSSSFKDFAK | SSS(1)FKDFAK            | 0.6058403 CAMK2;Cl-CHK1/2 |
| Baiap2 | Brain-specific angiogenic                | 1 T        | 341 SDSYSNTPVRK | LDSYS(0.004)NT          | 0.60573208 |

**Gene Counts:**
- Sf4: 1
- Sep-09: 1
- Srrm2: 2
- Srrm1: 1
- Clasp1: 1
- Hjrup: 1
- Selplg: 1
- Zfp280b: 1
- Srm2: 2
- Srrm2: 2
- Srm2: 2
- Coro1a: 1
- Adam19: 1
- Arhgef1: 1
- Dstn: 1
- Tmpo: 1
- Arhgef1: 1
- Klf13: 1
- Crkl: 1
- Usp10: 1
- Extl3: 1
- Pdcd4: 1
- Reps1: 1
- Sp100: 1
- Crkrs: 1
- Lbr: 1
- Rbl1: 1
- E2f8: 2
- Tmpo: 1
- Sash3: 1
- Baiap2: 1
| Protein  | Description                                      | S/A | Position | Sequence             | Phosphorylation | Phosphorylation | CK1 | CK2 |
|----------|--------------------------------------------------|-----|----------|----------------------|----------------|----------------|-----|-----|
| Srrm2    | Srrm2 protein; Serine                            | 2 S | 1649     | RRRSSRSSPELTR        | RS(0.024)S(0.975) | 0.262308842    | CK1 | CK2 |
| Dock10   | Dedicator of cytokine                            | 1 S | 1257     | SMKHATSVDTSFS        | HAT(0.071)S(0.92) | 0.230952216    | GSK3 | GSK3 |
| Dtd1     | D-tyrosyl-tRNA(Tyr) c                            | 1 S | 197      | EDRSASSGAEGDV        | S(0.001)AS(0.002) | 0.16772895     | CK1 | CK2 |
| Srrm2    | Srrm2 protein; Serine                            | 1 S | 1650     | RRRSSRSSPELTRK       | SSRS(0.002)S(0.9) | 0.157835756    | CK1 | PKA; Polo box |
| Abca13   | ATP-binding cassette                             | 1 T | 4753     | PPSSGYTVIRTPQ        | ILNGET(0.02)PPS( | 0.120870753    | CK1 | CK1 |
| Ptprc    | Leucocyte common antigen (L-CA); Leucocyte       | 994 |          |                      |                |                |     |     |
| Ptprc    | Leucocyte common antigen (L-CA); Leucocyte       | 1279|          |                      |                |                |     |     |
| Ptprc    | Leucocyte common antigen (L-CA); Leucocyte       | 1281|          |                      |                |                |     |     |
**Supplementary Table 2** Full list of the basal and TCR regulated serine/threonine phosphorylations identified in at least 3 out of 4 experiments with the ratio (TCR stimulated/ unstimulated) and phosphorylation sites/sequences.
| Gene Name | Exp1 | Exp2 | Exp3 | Exp4 | Amir Positiv Protein Names | Uniprot single ID | Sequence Window | Best Motif |
|-----------|------|------|------|------|-----------------------------|------------------|-----------------|-----------|
| Ablim1    | 0.66 | 0.97 | 0.86 | 1.02 | Actin-binding LIM protein Q8K4G5 | Q8K4G5           | ESPRTLSPTPSAE   | PKA/AKT   |
| Ablim1    | 0.79 | 0.93 | 1.16 |      | Actin-binding LIM protein Q8K4G5 | Q8K4G5           | DRRRSSGREDEE   | PKC       |
| Ablim1    | 1.01 | 1.97 | 2.39 |      | Actin-binding LIM protein Q8K4G5 | Q8K4G5           | MHRSTSQGSI     | PKD       |
| Ablim1    | 0.98 | 1.25 | 1.85 | 1.85 | Actin-binding LIM protein Q8K4G5 | Q8K4G5           | TDPRRSSGREDEE  | PKA       |
| Ablim1    | 0.74 | 2.29 | 0.94 | 1.17 | Actin-binding LIM protein Q8K4G5 | Q8K4G5           | LGESRTLSPTPS   | CK1       |
| Ablim1    | 0.68 | 0.79 | 1.21 |      | Actin-binding LIM protein Q8K4G5 | Q8K4G5           | PSSKTSSLPGYGK  | CK1       |
| Aebp2     | 1.03 | 0.77 | 0.94 |      | Zinc finger protein AEBP:Q9Z248 | Q9Z248           | SPLSPGSPGPAAR  | ERK/MAPK  |
| Aebp2     | 1.77 | 1.23 | 0.93 |      | Zinc finger protein AEBP:Q9Z248 | Q9Z248           | SRLSPLSPGPGP   | WW Group IV |
| Akap13    | 0.65 | 0.67 | 0.44 | T    | Putative uncharacterized protein Q3TR80 | Q3TR80           | KFLSHSTDSLNIK  | CK1       |
| Akap13    | 0.65 | 0.67 | 0.74 | S    | Putative uncharacterized protein Q3TR80 | Q3TR80           | WKFLSHSTDSLNIK | NEK6      |
| Akap13    | 0.92 | 3.95 | 2.62 | S    | Putative uncharacterized protein Q3TR80 | Q3TR80           | EKVLTRSA RPSS  | NEK6      |
| Bcl2      | 2.80 | 2.93 | 1.77 | T    | Apoptosis regulator Bcl-P10417 | P10417           | RDMARTSPRLPL   | FHA2 Rad53p |
| Bclaf1    | 0.97 | 1.11 | 1.03 | 0.95 | Bcl-2-associated transcript Q8K019 | Q8K019           | GEPEQESPLKSKS  | CDK2      |
| Bclaf1    | 1.10 | 1.11 | 1.11 |      | Bcl-2-associated transcript Q8K019 | Q8K019           | HRRIDISPALRK   |          |
| Bclaf1    | 0.60 | 1.47 | 1.09 | S    | Bcl-2-associated transcript Q8K019 | Q8K019           | VKEVQSEPQVKS   | ERK/MAPK  |
| Cbx3      | 0.90 | 1.02 | 1.14 |      | Chromobox protein hom P23198 | P23198           | TCRKLSLSEHDD   | CK2       |
| Cbx3      | 1.42 | 1.15 | 1.22 |      | Chromobox protein hom P23198 | P23198           | DTGKRKLSDSDE   | AURORA-A  |
| Cbx5      | 2.31 | 2.01 | 2.44 | S    | Chromobox protein hom Q61686 | Q61686           | GNKRKSSFNSAD   | PKA       |
| Ccnk      | 0.82 | 1.32 | 0.95 |      | Putative uncharacterized protein Q3U3M5 | Q3U3M5           | KRAVVSPEKENK   | ERK/MAPK  |
| Cdk7      | 1.07 | 1.20 | 0.84 | 1.12 | Cell division protein kinase Q03147 | Q03147           | SPNARYTHQVTR   | CAMK2     |
| Crtc3     | 2.12 | 3.37 | 1.29 | S    | CREB-regulated transcript Q91X84 | Q91X84           | RRQPVPSPLTLS   | WW Group IV |
| Crtc3     | 2.12 | 1.82 | 1.29 |      | CREB-regulated transcript Q91X84 | Q91X84           | VSPLTSGPEAH    | NEK6      |
| Crtc3     | 1.26 | 1.06 | 0.70 | S    | CREB-regulated transcript Q91X84 | Q91X84           | LRLFSLNPSLST   |          |
| CsdA      | 1.41 | 1.20 | 1.01 | 1.19 | DNA-binding protein A:C9JK3B | Q9JK3B           | NYRRSRPLNAV    | PKA       |
| Dnmt1     | 0.64 | 0.39 | 2.69 | S    | DNA (cytosine-5)-methyl P13864 | P13864           | TLSVETSPSSVAT  | CK1       |
| Eif2b5    | 1.00 | 1.46 | 1.44 | 1.30 | Translation initiation fact Q8CHW4 | Q8CHW4           | LDRAGSPQLDL    | CAMK2     |
| Eif1      | 0.97 | 0.99 | 0.97 |      | ETS-related transcription Q60775 | Q60775           | KPPRPDSPTTTPN  | WW Group IV |
| Etv3      | 1.29 | 2.29 | 1.13 | S    | ETS translocation variant Q8R4Z4 | Q8R4Z4           | SGVPQSAPPVPT   |          |
| Etv6      | 1.14 | 1.06 | 1.00 | 1.06 | Transcription factor ETV:P97360 | P97360           | NMSRLSPVEKAQ   | PKA       |
| Etv6      | 1.16 | 0.96 | 1.06 | T    | Transcription factor ETV:P97360 | P97360           | QERISYTPPESPV  | CK2       |
| Gene       | Value 1 | Value 2 | Value 3 | Value 4 | Value 5 | Value 6 | Value 7 | Value 8 | Value 9 | Value 10 | Value 11 | Action 1 | Action 2 | KA/MSD | Action 3 |
|------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----------|-----------|-----------|-----------|---------|-----------|
| Etv6       | 1.16    | 1.01    | 0.78    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Foxk1      | 1.82    | 3.65    | 3.25    | 0.75    | S       |         |         |         |         |           |           |           |           |         |           |
| Foxk1      | 3.65    | 3.24    | 0.99    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Garnl1     | 0.85    | 0.96    | 1.11    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Gtf2f1     | 1.76    | 1.42    | 2.67    | 1.19    | S       |         |         |         |         |           |           |           |           |         |           |
| Gtf2f1     | 1.50    | 2.25    | 1.22    | T       |         |         |         |         |         |           |           |           |           |         |           |
| Hdac1      | 1.11    | 0.93    | 1.08    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Hdac1      | 1.11    | 0.93    | 1.08    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Hdac2      | 1.28    | 0.81    | 0.98    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Hdac2      | 1.28    | 0.81    | 0.98    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Hdac7      | 0.87    | 0.85    | 1.01    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Hdac7      | 1.07    | 1.04    | 0.97    | T       |         |         |         |         |         |           |           |           |           |         |           |
| Hdac7      | 0.89    | 1.13    | 0.99    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Helb       | 0.39    | 0.10    | 0.46    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Helb       | 0.92    | 0.92    | 0.94    | 0.96    | S       |         |         |         |         |           |           |           |           |         |           |
| Helb       | 1.26    | 1.22    | 1.30    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Hels       | 2.45    | 1.62    | 1.06    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Hnnpab     | 1.04    | 0.95    | 3.02    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Hsf1       | 1.35    | 1.03    | 1.00    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Hsf1       | 1.35    | 1.03    | 1.00    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Htt        | 1.15    | 1.03    | 0.97    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Htt        | 1.15    | 1.16    | 1.96    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Id2        | 1.40    | 1.57    | 2.00    | 1.36    | S       |         |         |         |         |           |           |           |           |         |           |
| Kdm5c      | 1.18    | 1.31    | 0.90    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Kpn2       | 1.11    | 0.84    | 1.19    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Lat        | 1.40    | 1.57    | 2.00    | 1.36    | S       |         |         |         |         |           |           |           |           |         |           |
| Lcp2       | 3.20    | 1.71    | 1.14    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Lrh4       | 2.60    | 0.90    | 1.17    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Lrrfip1    | 1.00    | 0.78    | 1.05    | 0.89    | S       |         |         |         |         |           |           |           |           |         |           |
| Lrrfip1    | 1.82    | 0.80    | 0.91    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Lrrfip1    | 1.98    | 2.70    | 1.02    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Map3k7     | 0.99    | 0.97    | 1.26    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Max        | 0.87    | 1.20    | 1.03    | 0.91    | S       |         |         |         |         |           |           |           |           |         |           |
| Mef2d      | 0.53    | 0.51    | 0.98    | S       |         |         |         |         |         |           |           |           |           |         |           |
| Gene | E-value | Description | Interactor | Other Description |
|------|---------|-------------|------------|-------------------|
| Mkl1 | 2.17    | 349 MKL/myocardin-like protein Q8K4J6 | APTPSRLSTSSS | GSK3 |
| Ncoa3 | 1.12    | 846 Nuclear receptor coactivator A2A468 | PYNRAVLSDPVSS | CAMK2 |
| Ncor1 | 1.06    | 1482 Nuclear receptor corepressor Q60974 | APKANLSPGYYD | WW GroupIV |
| Ncor2 | 1.31    | 152 Nuclear receptor corepressor Q90YU2 | EPVSPSPPHADP | WW GroupIV |
| Ncor2 | 1.47    | 149 Nuclear receptor corepressor Q90YU4 | GKEPVSPPSPPH | WW GroupIV |
| Nfatc2 | 0.29   | 136 Nuclear factor of activator Q60591 | GRDAGLSPQPAR | SCLGRHSPVYERPA |
| Nfatc2 | 0.44   | 238 Nuclear factor of activator Q60591 | PKA |
| Nfatc2 | 0.83   | 366 Nuclear factor of activator Q60591 | QERERNSAPESIL | PKA |
| Nfatc2 | 0.94   | 369 Nuclear factor of activator Q60591 | RNASAPESILLVPP | CK1 |
| Nfatc3 | 1.17   | 417 Nuclear factor of activator B5B2U2 | PIFRTSLLPLPDLW | PKD |
| Nfkb1 | 1.76   | 940 Nuclear factor NF-kappa-P27799 | TSFRKLSFTESSLT | PKA |
| Pa2g4 | 1.09   | 2 Proliferation-associated P50580 | | |
| Pak2 | 0.83   | 2 Serine/threonine-protein Q8CIN4 | | |
| Pdkd4 | 0.82   | 141 Serine/threonine-protein Q8CIN4 | VKKQLSFTPEK | |
| Pdkd4 | 0.94   | 457 Programmed cell death rQ61823 | GRRKFVSEGDDGG | PKA/AKT |
| Pml | 0.97   | 94 Programmed cell death rQ61823 | GVAVPTSPKRL | WW GroupIV |
| Prkar1a | 0.72 | 528 Probable transcription factor Q60953 | STFKATSPHPDLD | |
| Prkar2b | 0.84 | 212 Putative uncharacterized Q3TKY4 | SREDEISPPPPP | |
| Psmd9 | 0.83 | 112 cAMP-dependent protein P31324 | RFTRRASCAEAY | AURORA-A |
| Psmd9 | 1.04 | 126 Putative uncharacterized Q3THC1 | MNRLASNSVPVLP | CAMK2 |
| Ptna | 0.92   | 128 Putative uncharacterized Q3THC1 | RRLASNSVPVQA | |
| Ptpn6 | 1.06 | 54 Prothymosin alpha;Thymus P26350 | PACTMSDAOAVDT | |
| Purl | 1.09   | 557 Tyrosine-protein phosphoi P29351 | HAKASRTSSHHK | |
| Rbl1 | 0.65 | 6 Transcriptional activator O35295 | MADGDSGSRGG | CK2 |
| Rbl1 | 0.78   | 369 Retinoblastoma-like protein Q64701 | RSFAPSTPLTGR | WW GroupIV |
| Rbm15 | 1.27   | 1036 Retinoblastoma-like protein Q64701 | ISGDADPAKRL | CDK2 |
| Rbm17 | 1.15   | 658 Rbm15 protein A0PGG5 | LDRSEPESRPQK | CK1 |
| Rbm25 | 0.60 | 155 Splicing factor 45;45 kD;Q8JXZ4 | RRDDPDSDEDEY | |
| Rbm39 | 1.03 | 675 RNA-binding protein 25;I4B2Y56 | KGLASNSQPPNS | |
| Rfc1 | 1.15   | 136 RNA-binding protein 39;IQ8VH51 | PFRDKSSPVPREI | CDK2 |
| Ripk2 | 1.01 | 244 Putative uncharacterized Q3UTJ6 | KKARKDEEGES | PKA |
| Ripk2 | 1.16 | 411 Receptor-interacting serine P58801 | FCDRRASCSLAV | |
| Rnf20 | 0.94 | 412 Receptor-interacting serine P58801 | CDRASSCSLAVI | CAMK2 |
|  | 0.99 | 138 E3 ubiquitin-protein ligase Q5DM8 | PEPDSNQERKD | CK2 |
| Gene  | Value1 | Value2 | Value3 | Value4 | Description                                                                 |
|-------|--------|--------|--------|--------|-----------------------------------------------------------------------------|
| Rps6ka1 | 0.84   | 1.17   | 0.79   | 0.66   | 359 Putative uncharacterized Q3TIM6                                        |
| Sfrs6  | 1.08   | 0.89   | 0.76   | 0.99   | 303 Putative uncharacterized Q3TW8                                         |
| Smarcc2 | 0.96   | 1.04   | 1.04   | 0.89   | 283 SWI/SNF complex subunit 6DPDG5                                         |
| Snip1  | 1.36   | 0.96   | 1.04   | 0.66   | 18 Smad nuclear-interacting Q8BIZ6                                         |
| Sp100  | 0.86   | 0.62   | 1.14   | 0.89   | 314 Nuclear autoantigen Sp- O35892                                          |
| Sasmt1 | 0.98   | 0.93   | 1.01   | 0.76   | 24 Sequestosome-1;Ubiquitin Q64337                                          |
| Stub1  | 0.91   | 0.91   | 0.74   | 0.89   | 20 STIP1 homology and U b Q9WUD1                                           |
| Sumo1  | 1.01   | 1.42   | 0.96   | 0.85   | 2 Small ubiquitin-related n P63166                                         |
| Tcof1  | 0.79   | 0.91   | 0.76   | 0.99   | 154 Treacle protein;Treacher 008784                                        |
| Tcof1  | 1.15   | 1.23   | 1.02   | 0.89   | 853 Treacle protein;Treacher 008784                                        |
| Tcof1  | 1.50   | 1.09   | 1.07   | 0.89   | 1191 Treacle protein;Treacher 008784                                       |
| Tcof1  | 0.63   | 0.93   | 0.94   | 0.89   | 593 Treacle protein;Treacher 008784                                        |
| Tcof1  | 0.70   | 1.23   | 1.14   | 0.89   | 852 Treacle protein;Treacher 008784                                        |
| Tfdp1  | 0.85   | 0.73   | 1.08   | 0.89   | 23 Transcription factor Dp-1 Q08639                                         |
| Thrap3 | 1.17   | 0.89   | 0.83   | 0.93   | 243 Thyroid hormone receptor Q569Z6                                         |
| Thrap3 | 1.26   | 1.09   | 0.95   | 1.06   | 679 Thyroid hormone receptor Q569Z6                                         |
| Thrap3 | 1.53   | 1.02   | 0.95   | 0.89   | 669 Thyroid hormone receptor Q569Z6                                         |
| Thrap3 | 1.02   | 0.75   | 1.00   | 0.89   | 248 Thyroid hormone receptor Q569Z6                                         |
| Thrap3 | 2.06   | 1.69   | 1.45   | 0.89   | 253 Thyroid hormone receptor Q569Z6                                         |
| Tmpo   | 0.77   | 1.19   | 0.79   | 0.89   | 66 Putative uncharacterized Q3U7B3                                          |
| Tmpo   | 0.59   | 0.32   | 0.71   | 0.89   | 157 Putative uncharacterized Q3U7B3                                          |
| Tmpo   | 0.61   | 0.98   | 0.96   | 0.89   | 159 Putative uncharacterized Q3U7B3                                          |
| Trim28 | 1.44   | 1.46   | 0.97   | 1.15   | 23 Transcription intermediary Q62318                                       |
| Trim28 | 4.82   | 4.77   | 3.79   | 0.89   | 471 Transcription intermediary Q62318                                       |
| Trim28 | 4.49   | 4.81   | 3.71   | 1.94   | 473 Transcription intermediary Q62318                                       |
| Upf1   | 1.16   | 1.31   | 0.69   | 0.89   | 1102 Regulator of nonsense tr Q9EPU0                                        |
| Vasp   | 2.50   | 1.40   | 2.26   | 0.89   | 235 Vasodilator-stimulated pL P70460                                       |
| Wdr77  | 1.21   | 1.16   | 0.95   | 0.89   | 5 Methylsine protein 50 Q99J09                                             |
| 0610010 | 1.03   | 0.98   | 1.03   | 0.89   | 100 Uncharacterized potential Q9DCT6                                       |
| 1110037F02Rik | 1.32 | 1.06 | 1.16 | 0.89 | 1628 1110037F02Rik protein;IQ8CFK9                                         |
| 1110037F02Rik | 1.32 | 1.08 | 1.09 | 0.89 | 1627 1110037F02Rik protein;IQ8CFK9                                         |
| 2310047M10Rik | 0.86 | 0.77 | 0.97 | 0.89 | 511 Phostensin;Protein phosq Q8BQ30                                       |
| 2310047M10Rik | 1.20 | 1.54 | 1.24 | 0.89 | 43 Putative uncharacterized Q3TEZ1                                          |
| 6330577 | 1.35 | 0.85 | 0.81 | 0.89 | 70 Uncharacterized protein Q8BP27                                         |
| Accession | E-value | Probability | Score | Description |
|-----------|---------|-------------|-------|-------------|
| 6330577   | 0.85    | 0.68        | 1.10  | 67 Uncharacterized protein | Q8BP27 | TRENPPSPPTSPA | WW GroupIV |
| Aak1      | 0.77    | 1.16        | 1.21  | 635 AP2-associated protein k | Q3UHJ0 | GHRRLSDVTHSA | CAMK2 |
| Abcf1     | 1.08    | 0.96        | 0.87  | 107 ATP-binding cassette | Q6P542 | QLSVPASDEEDEV | CK2 |
| Abcf1     | 1.19    | 0.95        | 0.89  | 194 ATP-binding cassette | Q6P542 | KPAADSEGEEEE | CK2 |
| Abcf1     | 0.67    | 0.92        | 0.84  | 225 ATP-binding cassette | Q6P542 | KEAEQGSGEKKE | CK2 |
| Acin1     | 1.31    | 1.13        | 1.00  | 710 Apoptotic chromatin | Q9JIX8 | VRGRHLSHEPEQ | PIM1/2 |
| Acin1     | 0.83    | 0.82        | 1.12  | 479 Apoptotic chromatin | Q9JIX8 | QLRLSPLSGT | CHK1/2 |
| Acin1     | 0.71    | 0.86        | 1.02  | 216 Apoptotic chromatin | Q9JIX8 | SEEKGEDDEKPR | CK2 |
| Acin1     | 0.74    | 0.81        | 1.16  | 477 Apoptotic chromatin | Q9JIX8 | PAQLRSLSPSG | NEK6 |
| Acly      | 3.01    | 4.09        | 2.21  | 453 Putative uncharacterized | Q3TED3 | TPAPRTASFSES | |
| Add3      | 2.25    | 2.77        | 2.90  | 455 Putative uncharacterized | Q3TED3 | APSRTASFSESRA | PKA/AKT |
| Agap2     | 0.82    | 1.33        | 1.25  | 642 Arf-GAP, GTPase, ANK re | Q3UHD9 | DDAPOPLKFM | WW GroupIV |
| Agap2     | 1.33    | 1.16        | 1.91  | 802 Arf-GAP, GTPase, ANK re | Q3UHD9 | NLARALSDCTPS | CHK1/2 |
| Ahnak     | 0.57    | 0.78        | 0.99  | 116 Ahnak protein; | A0JLR7 | SSEEVLSSGDDEDY | |
| Ahnak     | 1.00    | 0.94        | 1.22  | 94 Ahnak protein; | A0JLR7 | HPKGDSPEPQGT | |
| Ahnak     | 1.40    | 1.90        | 2.90  | 136 Ahnak protein | A0JLR7 | IKPRLRSEDVEG | CAMK2 |
| AI41378   | 0.71    | 1.28        | 2.24  | 119 Uncharacterized protein | Q8BGQ1 | GRTRPFSQSLSD | PKA/AKT |
| Akap10    | 1.41    | 1.27        | 1.12  | 255 A kinase anchor protein | Q88845 | HREVARTSHQIP | |
| Akna      | 0.78    | 0.69        | 0.86  | 302 AT-hook-containing trans | Q80VW7 | RFTGSVPLSTRL | CK1 |
| Akt1s1    | 1.52    | 1.73        | 1.53  | 318 Proline-rich AKT1 substr | Q9D1F4 | PRPRLNTSDFQL | PKA/AKT |
| Aldoa     | 1.14    | 1.41        | 0.87  | 100 Fructose-bisphosphate | A6Z144 | IAKRLQSIQENT | PKA |
| Alkbh5    | 1.10    | 2.86        | 1.35  | 362 Alkylated DNA repair | Q3TSG4 | THRRRFSSENY | PKA/AKT |
| Als2      | 0.90    | 0.91        | 0.84  | 477 Alsin;Amyotrophic latera | Q92900 | GGSRRSLPGLLS | AURORA-A |
| Als2      | 0.90    | 0.91        | 0.84  | 486 Alsin;Amyotrophic latera | Q92900 | GLLSQVSPRLRK | CDK1 |
| Ampd2     | 0.55    | 0.68        | 0.72  | 63 Adenosine monophospha | A2AE27 | RSGLGSPQSR | NEK6 |
| Ap1gbp1   | 1.95    | 2.37        | 1.39  | 1067 AP1 subunit gamma-bin | Q5SV85 | SHKRLSLLGKE | PKA |
| Ap3d1     | 0.63    | 0.73        | 0.77  | 825 AP-3 complex subunit | Q54774 | NAAEKSPEKEVG | ERK/MAPK |
| Apbb1ip   | 1.39    | 0.83        | 1.46  | 532 Amyloid beta A4 precurs | Q8R5A3 | PPVRRSSDTCGS | PKA/AKT |
| Apbb1ip   | 1.13    | 1.04        | 0.86  | 531 Amyloid beta A4 precurs | Q8R5A3 | PPPVRRSSDTCGS | PKA |
| Apbb1ip   | 1.52    | 0.87        | 1.44  | 534 Amyloid beta A4 precurs | Q8R5A3 | VRRSSDTCGSAP | CK1 |
| Arglu1    | 1.08    | 0.96        | 1.15  | 74 Arginine and glutamate | Q3UL36 | RRERASSPPDRI | PKA |
| Arglu1    | 1.09    | 1.05        | 1.01  | 75 Arginine and glutamate | Q3UL36 | ERERASSPPDRI | PKA/AKT |
| Arhge1    | 0.39    | 0.67        | 0.64  | 432 Rho guanine nucleotide | Q61210 | GPTRRATPEPGGD | PKA |

**References:**
- [CRC](http://www.cancerresearchuk.org)
| Protein                       | p | T1 | T2 | T3 | T4 |   | Description                                                                 |
|------------------------------|---|----|----|----|----|---|--------------------------------------------------------------------------------|
| Arhgef2                      | 0.89 | 1.14 | 1.17 | 1.29 | S |   | 885 Rho guanine nucleotide cQ60875                                           |
| Arhgef6                      | 1.57 | 2.99 | 1.46 | 1.27 | S |   | 656 Rac/Cdc42 guanine nucleA2AF10                                           |
| Arhgef6                      | 1.35 | 2.71 | 1.16 | 1.70 | S |   | 696 Rac/Cdc42 guanine nucleA2AF10                                           |
| Arhgef7                      | 3.74 | 4.17 | 4.32 | 1.95 | S |   | 673 Rho guanine nucleotide cQ9ES28                                           |
| Atrip                        | 1.10 | 0.78 | 1.07 |     | T |   | 224 ATR-interacting protein;/Q8BMG1                                         |
| Atxn2l                       | 2.18 | 2.26 | 1.20 |     | S |   | 109 Ataxin-2-like protein;/Ata Q7TQH0                                       |
| Bat2                         | 0.84 | 1.12 | 1.15 |     | S |   | 1083 Large proline-rich protein Q7TSC1                                        |
| Bat2d1                       | 1.05 | 1.15 | 1.16 | 0.85 | T |   | 761 Large proline-rich protein Q7TSC1                                        |
| Bat2d1                       | 0.98 | 0.82 | 1.07 |     | S |   | 454 Large proline-rich protein Q7TSC1                                        |
| Bat2l                        | 1.00 | 0.88 | 0.89 |     | S |   | 387 Protein BAT2-like;/HLA-B-Q7TPM1                                         |
| BC005624                     | 0.85 | 1.09 | 1.07 |     | S |   | 261 Novel protein (BC005624)                                                |
| Bckdk                        | 1.13 | 1.12 | 0.76 |     | S |   | 31 [3-methyl-2-oxobutanoa O55028                                           |
| Bcl2l13                      | 1.38 | 1.09 | 0.30 |     | S |   | 387 Bcl-2-like protein 13;Pro P59017                                       |
| Bmp2k                        | 2.12 | 2.60 | 1.67 |     | S |   | 908 BMP-2-inducible protein Q91Z96                                        |
| Bnip2                        | 2.10 | 1.40 | 1.25 |     | S |   | 114 Putative uncharacterized Q9D632                                        |
| Bnip3                        | 2.06 | 1.59 | 0.95 | 1.11 | S |   | 88 BCL2/adenovirus E1B 19 055003                                            |
| Bud13                        | 7.33 | 1.14 | 0.89 | 1.07 | T |   | 144 BUD13 homolog;/BUD13 Q8R149                                              |
| Bud13                        | 7.33 | 1.14 | 0.89 | 1.07 | S |   | 148 BUD13 homolog;/BUD13 Q8R149                                              |
| C11orf61                     | 1.00 | 0.98 | 1.05 |     | S |   | 436 Uncharacterized protein Q6NR2                                             |
| C130039O16Rik                | 1.26 | 0.92 | 0.91 |     | S |   | 456 Putative uncharacterized Q3U224                                         |
| C130057                      | 0.84 | 0.90 | 0.89 |     | S |   | 135 HnRNP-associated with A2AU63                                            |
| C16orf54                     | 1.03 | 0.81 | 1.25 |     | S |   | 195 Transmembrane protein Q8C708                                             |
| C4orf3                       | 1.10 | 1.20 | 1.00 | 1.04 | S |   | 19 Uncharacterized protein Q99M08                                           |
| C9orf142                     | 1.19 | 0.99 | 0.75 |     | S |   | 150 Uncharacterized protein Q8K0Y7                                           |
| Cad                          | 1.04 | 1.13 | 1.04 |     | S |   | 1859 Carbamoyl-phosphate sy B2RQC6                                           |
| Canx                         | 1.15 | 0.99 | 0.93 |     | S |   | 582 Calnexin P35564                                                        |
| Capza2                       | 1.01 | 0.64 | 0.93 |     | S |   | 9 F-actin-capping protein sP47754                                           |
| Carhsp1                      | 1.07 | 1.26 | 0.97 |     | S |   | 53 Calcium-regulated heat sQ9CR86                                           |
| Carhsp1                      | 1.10 | 2.74 | 2.13 |     | S |   | 31 Calcium-regulated heat sQ9CR86                                           |
| Casc3                        | 1.22 | 0.76 | 1.03 |     | S |   | 263 Cancer susceptibility can A3KFP7                                         |
| Casc3                        | 1.28 | 1.08 | 0.98 |     | S |   | 262 Cancer susceptibility can A3KFP7                                         |
| Cast                         | 0.81 | 0.43 | 0.36 |     | S |   | 11 Calpastatin;Calpain inhib P51125                                         |
|                            | | | | | |   | 885 Rho guanine nucleotide cQ60875                                           |
|                            | | | | | |   | 656 Rac/Cdc42 guanine nucleA2AF10                                           |
|                            | | | | | |   | 696 Rac/Cdc42 guanine nucleA2AF10                                           |
|                            | | | | | |   | 673 Rho guanine nucleotide cQ9ES28                                           |
|                            | | | | | |   | 224 ATR-interacting protein;/Q8BMG1                                         |
|                            | | | | | |   | 109 Ataxin-2-like protein;/Ata Q7TQH0                                       |
|                            | | | | | |   | 1083 Large proline-rich protein Q7TSC1                                        |
|                            | | | | | |   | 761 Large proline-rich protein Q7TSC1                                        |
|                            | | | | | |   | 454 Large proline-rich protein Q7TSC1                                        |
|                            | | | | | |   | 387 Protein BAT2-like;/HLA-B-Q7TPM1                                         |
|                            | | | | | |   | 261 Novel protein (BC005624)                                                |
|                            | | | | | |   | 31 [3-methyl-2-oxobutanoa O55028                                           |
|                            | | | | | |   | 387 Bcl-2-like protein 13;Pro P59017                                       |
|                            | | | | | |   | 908 BMP-2-inducible protein Q91Z96                                        |
|                            | | | | | |   | 114 Putative uncharacterized Q9D632                                        |
|                            | | | | | |   | 88 BCL2/adenovirus E1B 19 055003                                            |
|                            | | | | | |   | 144 BUD13 homolog;/BUD13 Q8R149                                              |
|                            | | | | | |   | 148 BUD13 homolog;/BUD13 Q8R149                                              |
|                            | | | | | |   | 436 Uncharacterized protein Q6NR2                                             |
|                            | | | | | |   | 456 Putative uncharacterized Q3U224                                         |
|                            | | | | | |   | 135 HnRNP-associated with A2AU63                                            |
|                            | | | | | |   | 195 Transmembrane protein Q8C708                                             |
|                            | | | | | |   | 19 Uncharacterized protein Q99M08                                           |
|                            | | | | | |   | 150 Uncharacterized protein Q8K0Y7                                           |
|                            | | | | | |   | 1859 Carbamoyl-phosphate sy B2RQC6                                           |
|                            | | | | | |   | 582 Calnexin P35564                                                        |
| Gene         | E-Value 1 | E-Value 2 | E-Value 3 | E-Value 4 | Protein Function                                                                 |
|--------------|-----------|-----------|-----------|-----------|----------------------------------------------------------------------------------|
| Cblb         | 2.43      | 1.52      | 2.20      | S         | E ubiquitin-protein ligase Q3TAA7                                               |
| Cblb         | 2.43      | 1.52      | 2.20      | S         | E ubiquitin-protein ligase Q3TAA7                                               |
| Cc2d1b       | 2.20      | 1.98      | 1.11      | S         | Coiled-coil and C2 domain Q8BRN9                                               |
| Ccdd86       | 1.16      | 0.89      | 1.02      | S         | Coiled-coil domain Q9J889                                                       |
| Ccdd88b      | 0.99      | 0.82      | 0.83      | 0.54      | Coiled-coil domain Q4QL3                                                        |
| Ccdd88b      | 0.93      | 0.83      | 0.94      | S         | Coiled-coil domain Q4QL3                                                        |
| Ccdd88b      | 0.65      | 1.05      | 0.78      | T         | Coiled-coil domain Q4QL3                                                        |
| Ccdd88b      | 0.51      | 0.98      | 0.71      | S         | Coiled-coil domain Q4QL3                                                        |
| Ccdd88b      | 0.41      | 2.61      | 1.46      | S         | Coiled-coil domain Q4QL3                                                        |
| Ccny         | 0.88      | 1.08      | 0.89      | 1.05      | Cyclin-Y; Cyclin fold protein Q8BGU5                                             |
| Ccs          | 1.85      | 1.91      | 1.99      | S         | Copper chaperone for Q9UW84                                                     |
| Cdc2l1       | 1.07      | 1.06      | 1.57      | S         | 47 PITSLRE serine/threonine P24788                                              |
| Cdk4         | 0.98      | 1.23      | 1.03      | S         | 403 Cell division protein kina P30285                                            |
| Cenpe        | 3.17      | 4.47      | 3.11      | S         | 2426 Centromere-associated tQ35059                                              |
| Cep55        | 2.73      | 2.17      | 1.43      | S         | 423 Centrosomal protein of 5Q8T07                                              |
| Cep55        | 2.73      | 2.42      | 1.35      | S         | 428 Centrosomal protein of 5Q8T07                                              |
| Cfl1         | 0.49      | 0.45      | 0.49      | S         | 3 Cofilin-1; Cofilin, non-mu P18760                                             |
| Chmp2b       | 0.97      | 0.99      | 0.97      | 0.94      | 199 Charged multivesicular bQ8BJ9                                               |
| Cic          | 1.14      | 2.66      | 1.41      | S         | 2284 Protein capicua homolog Q24UA2                                              |
| Clasp1       | 0.99      | 0.87      | 1.51      | 1.02      | 600 CLIP-associating protein Q80TV8                                               |
| Clasp2       | 0.84      | 1.04      | 0.76      | 0.89      | 603 CLIP-associating protein Q80RT1                                              |
| Clcc1        | 0.37      | 0.36      | 0.56      | 0.52      | 434 Chloride channel CLIC-II A2AEM2                                              |
| Clip1        | 1.53      | 0.93      | 0.89      | S         | 347 CAP-Gly domain-containQ92233                                               |
| Clk3         | 1.19      | 0.94      | 0.99      | S         | 157 Dual specificity protein k Q35492                                            |
| Clns1a       | 0.87      | 1.03      | 1.07      | S         | 100 Chloride channel regulatP97506                                              |
| Clspn        | 1.09      | 1.20      | 0.98      | S         | 1265 Claspin Q80YR7                                                             |
| Comt         | 0.77      | 1.13      | 1.11      | S         | 261 Catechol O-methyltransfer Q85857                                             |
| Coro1a       | 0.43      | 0.34      | 0.55      | 0.77      | 418 Coronin-1A; Coronin-like Q89053                                             |
| Coro1a       | 0.43      | 0.65      | 0.84      | T         | 424 Coronin-1A; Coronin-like Q89053                                             |
| Cotl1        | 0.75      | 1.20      | 0.90      | S         | 141 Coactosin-like protein Q9CQ16                                               |
| Cpox         | 0.90      | 1.12      | 0.80      | S         | 101 Coproporphyrinogen-III P36552                                              |
| Crkrs        | 1.47      | 1.23      | 1.23      | S         | 382 Cell division cycle 2-relatQ14AX6                                          |
| Crkrs        | 1.47      | 1.27      | 1.21      | S         | 384 Cell division cycle 2-relatQ14AX6                                          |
| Csde1        | 0.94      | 3.08      | 0.85      | S         | 538 MKIAA0885 protein; Cold Q80TP8                                             |
| Gene         | Description                                                                 | Gene         | Description                                                                 |
|--------------|------------------------------------------------------------------------------|--------------|------------------------------------------------------------------------------|
| Cstf3        | 1.18 0.83 1.02 1.12 S                                                       | 691          | Cleavage stimulation fac;Q99L17 KRNEDSDEEDecl                                      |
| Ctps         | 1.66 1.57 1.03 S                                                            | 571          | CTP synthase 1;UTP--arr P70698  DTYSDRGS55SPD  CK1                             |
| Dap          | 0.91 0.88 0.87 S                                                            | 51           | Death-associated protein Q91X8 QWEXTSPKP5TV  CDK2                              |
| Dbr1         | 1.16 0.93 S                                                                  | 505          | Lariat debranching enzvr Q92B3  CGETVE5GDEEKL  CK2                            |
| Dbr1         | 1.51 1.11 0.82 0.92 S                                                       | 520          | Lariat debranching enzvr Q92B3  FPLKLRSDEHEPE  PKA                             |
| Dck          | 1.13 1.07 0.98 S                                                            | 11           | Deoxyctydine kinase P43346  PKRFCP3STSSSE  GSK3                              |
| Ddx3x        | 0.53 1.07 1.10 1.48 S                                                       | 594          | ATP-dependent RNA heli;Q62167  SKSRSFGGFGAR  PKA                              |
| Ddx3x        | 0.32 1.07 2.69 S                                                            | 90           | ATP-dependent RNA heli;Q62167  FFGDRSGS5GRF  PKA                              |
| Def6         | 0.28 0.27 0.35 S                                                            | 597          | Differentially expressed iQ8C2K1  QGNRTLSVNSSEQ  CAMK2                         |
| Dennd4a      | 1.31 1.38 2.01 S                                                            | 1237         | Putative uncharacterized Q8CBi8  LTSRTPSILQRA  CAMK2                          |
| Dkc1         | 0.10 0.73 0.97 0.98 S                                                       | 481          | H/ACA ribonucleoprotein Q9ESX5  PKTVLESGETGD  CK2                             |
|Dlgap5        | 1.52 1.59 1.58 1.24 S                                                       | 328          | Disks large-associated piQ8K4R9  YQVAPLSRASNA  WW GroupIV                       |
| Dnaic21      | 1.02 0.83 1.12 S                                                            | 283          | Putative uncharacterized Q3USP3  KEFGDSDENEVE                                    |
| Dock11       | 0.21 3.04 2.65 S                                                            | 12           | D Catalyzer of cytokinesis A2AF47  KFTKRLKPGTAA  PKA                          |
| Dock2        | 0.64 1.37 1.36 S                                                            | 1704         | D Catalyzer of cytokinesis Q8C3J5  KRTKRRSVVFAD  AURORA-A                      |
| Dock2        | 0.64 1.37 1.36 S                                                            | 1683         | D Catalyzer of cytokinesis Q8C3J5  VEEIPISPGLP  WW GroupIV                      |
| Dpf2         | 0.80 1.82 1.35 0.59 S                                                       | 142          | Putative uncharacterized Q3UK4V  PRVDSDSGLEPF  PLK                             |
| Dstn         | 0.62 0.69 0.64 0.46 S                                                       | 3            | Destrin;Actin-depolymy Q9R0P5  ____MASGQVAD                                      |
| Dtd1         | 1.01 1.01 1.17 1.40 S                                                       | 197          | D-Tyrosyl-tRNA(Tyr) dear Q9DD18  EDRSA SSAGGAEGDV  CK2                        |
| Dtx3i        | 1.11 1.06 1.31 1.13 S                                                       | 9            | Putative uncharacterized Q3U1R3  SSPDPSSPLV  WW GroupIV                         |
| Dynch1h1     | 1.93 3.26 1.39 T                                                            | 4364         | Cytoplasmic dynein 1 he Q9JH04  TEKKARDTSDDD                                      |
| Dynch1h1     | 2.04 2.22 1.27 S                                                            | 4366         | Cytoplasmic dynein 1 he Q9JH04  KKARTDTSDDGP  PKA/AKT                        |
| Dynch1i1     | 5.82 2.79 1.50 S                                                            | 516          | Cytoplasmic dynein 1 ligiQ8R1Q8  SPTTPTSPITEGA  WW GroupIV                     |
| Eap1         | 1.51 1.00 0.95 S                                                            | 584          | Enhanced at puberty proQ8K3X4  LRKRASSSEPDS  PKA/AKT                         |
| Eap1         | 1.37 0.41 0.68 S                                                            | 696          | Enhanced at puberty proQ8K3X4  ARNNSSSPVSPAS  Polo box                        |
| Edc3         | 1.16 1.27 0.92 S                                                            | 731          | Enhancer of mRNA-decapQ8K2D3  QASPSRSTRSPVI                                       |
| Edc4         | 0.94 0.81 1.03 T                                                            | 131          | Enhancer of mRNA-decapQ3UJB9  QAPSTPSPTG                          |
| Eif3b        | 1.21 1.20 0.98 S                                                            | 79           | Eukaryotic translation iniQ8JZQ9  ATSPASAPTQSA  CK1                          |
| Eif3b        | 1.26 1.20 0.98 1.22 S                                                       | 75           | Eukaryotic translation iniQ8JZQ9  EEETATSPPASPT  GSK3                         |
| Eif3c        | 1.08 1.02 0.96 1.00 S                                                       | 39           | Eukaryotic translation iniQ8R1B4  KQPPLSEDEEDT  CK2                           |
| Eif3g        | 1.11 1.00 0.97 S                                                            | 42           | Eukaryotic translation iniQ9Z1D1  LPTGDTSPEPELL  CK1                          |
| Eif4b        | 1.54 1.82 2.73 1.79 S                                                       | 425          | Eukaryotic translation iniQ8BGD9  RTGSSESSQGAGA  CK1                          |
| Eif4b        | 1.72 2.15 2.73 1.68 T                                                       | 420          | Eukaryotic translation iniQ8BGD9  ERERSRTGESQQ  PKA/AKT                       |
| Eif4b        | 5.16 2.44 1.45 T                                                            | 495          | Eukaryotic translation iniQ8BGD9  SNPPARSQSDTE                                      |
| Protein Id | Score | Function | ID | Function |
|-----------|-------|----------|----|----------|
| Eif4b     | 1.65  | 1.02     | 1.36 | S        |
| Eif4b     | 1.54  | 0.99     | 2.17 | S        |
| Eif4b     | 3.12  | 1.05     | 1.72 | S        |
| Eif4b     | 5.16  | 1.25     | 1.65 | S        |
| Eif4ebp1  | 0.92  | 0.92     | 1.00 | T        |
| Eif4ebp1  | 1.08  | 1.17     | 1.03 | T        |
| Eif4enf1  | 0.87  | 1.07     | 0.95 | S        |
| Eif4g1    | 1.02  | 1.07     | 0.85 | 1.02 S   |
| Eif4g1    | 1.11  | 1.08     | 1.17 | 1.00 S   |
| Eif4g1    | 1.07  | 1.21     | 1.06 | 1.16 S   |
| Eif5b     | 0.87  | 0.76     | 0.78 | 0.90 S   |
| Eif5b     | 0.77  | 0.95     | 0.86 | 1.01 S   |
| Eif5b     | 1.10  | 1.13     | 0.95 | 1.06 S   |
| Emg1      | 1.09  | 2.46     | 2.25 | S        |
| Eml3      | 2.27  | 2.65     | 1.68 | S        |
| Eomes     | 1.07  | 1.06     | 0.98 | 0.95 S   |
| Epb4.1    | 0.49  | 1.98     | 1.72 | S        |
| Eps15     | 1.17  | 1.22     | 1.04 | S        |
| Eps15f1   | 1.15  | 1.14     | 1.26 | S        |
| Evl       | 2.22  | 1.91     | 1.87 | S        |
| Evl       | 1.19  | 2.17     | 2.82 | 1.85 S   |
| Evl       | 1.27  | 2.29     | 2.09 | 1.74 S   |
| Evl       | 0.44  | 0.45     | 0.46 | S        |
| Evl       | 3.34  | 2.98     | 0.75 | S        |
| Fam103a   | 1.08  | 1.01     | 0.93 | S        |
| Fam122a   | 0.95  | 0.65     | 0.73 | 1.11 S   |
| Fam122a   | 1.06  | 0.65     | 0.67 | 1.11 S   |
| Fam122a   | 1.25  | 1.24     | 1.59 | S        |
| Fam122b   | 0.70  | 0.96     | 0.98 | S        |
| Fam122b   | 0.70  | 0.87     | 1.00 | S        |
| Fam21     | 1.04  | 1.09     | 1.13 | S        |
| Fam21     | 1.71  | 1.51     | 1.11 | S        |
| Fam53b    | 1.13  | 0.98     | 1.14 | S        |
| Fam54b    | 1.60  | 1.07     | 1.09 | S        |
| Protein ID | Score™ | E-value | Function & References |
|------------|---------|---------|-----------------------|
| Fam65b     | 0.59    | 0.96    | 46 Protein FAM65B;Fam65b Q80U16 GIIRSQSFAGFSG PKD |
| Fam76b     | 1.16    | 0.99    | 193 Protein FAM76B Q80XP8 HKVSSLSPEQEQG CK1 |
| Fam82a     | 1.09    | 1.32    | 46 Regulator of microtubule Q3UU9 RHGRSHSLPNSDL 14-3-3 binding |
| Fancd2     | 2.47    | 4.29    | 10 Fanconi anemia group D Q08V62 KRRRLDSEKLEN PKA/AKT |
| Fip11      | 1.11    | 0.92    | 501 Pre-mRNA 3'-end-process Q9D824 TPSVFNSDEERYR CK2 |
| Fip11      | 1.31    | 1.10    | 497 Pre-mRNA 3'-end-process Q9D824 DHSPTPSFNDS GSK3 |
| Fip11      | 1.29    | 1.12    | 493 Pre-mRNA 3'-end-process Q9D824 ERERDHSPTPSVF PKA/AKT |
| FLJ45252   | 4.60    | 3.71    | 115 Uncharacterized protein Q6PIU9 PINQRASSDLGEP PKA |
| Fmn1       | 2.20    | 0.46    | 184 Formin-like protein 1;ForQ3JL26 SKPLDQSVEDLSL PLK |
| Fmn1       | 0.92    | 0.94    | 1021 Formin-like protein 1;ForQ3JL26 EPPTPKSPPKARR WW GroupIV |
| Fnbp1      | 0.83    | 0.73    | 295 Formin binding protein 1 A2AQ41 PMKRTVDNLS GKA |
| Ftsjd2     | 0.47    | 0.56    | 27 FtsJ methyltransferase d Q9DBC3 ELARHLSSDTDE CHK1/2 |
| Ftsjd2     | 0.55    | 3.16    | 29 FtsJ methyltransferase d Q9DBC3 ARHLSSTSDDEPL FHA1 Rad53p |
| Fyb        | 0.44    | 0.49    | 561 FYN-binding protein;FYN Q035601 VEIDYDSLKRK |
| G3bp1      | 1.15    | 1.11    | 229 Ras GTPase-activating prP97855 PDDVQKSTSPAPA |
| G3bp1      | 1.05    | 1.19    | 231 Ras GTPase-activating prP97855 DVQKSTPAPADV PKD |
| G3bp2      | 1.04    | 0.94    | 227 Ras GTPase-activating prP97379 LEESATTPPAEP |
| Gapvd1     | 0.97    | 1.07    | 908 GTPase-activating protein Q6PAR5 RLVRSSSDIVSS CHK1/2 |
| Gapvd1     | 0.96    | 1.09    | 906 GTPase-activating protein Q6PAR5 PERLVRSSSDIV NEK6 |
| Gemin8     | 1.33    | 1.12    | 181 Gem-associated protein :Q8BHE1 YFNHRRSLEPPSE AURORA |
| Giggf2     | 0.89    | 0.98    | 26 PERQ acid-rich wiQ6Y7W8 SGGSITSPPLSPA CK1 |
| Git1       | 1.22    | 1.27    | 601 ARF GTPase-activating prQ6EFF6 KLHGHSGADS DKY CHK1/2 |
| Gmip       | 1.17    | 0.89    | 436 GEM-interacting protein; Q6PGG2 ERSRLDSTPSSP CK1 |
| Gpn1       | 2.90    | 3.32    | 314 GPN-loop GTPase 1;XPA Q8VCE2 AGKGNASPVL DPS |
| Grap2      | 4.75    | 9.42    | 254 GRB2-related adaptor pr F09100 LMRHRHTPVPVLQ PKA |
| Gtbp1      | 1.18    | 0.83    | 25 GTP-binding protein 1 Q08582 FAEPEPSSPAARA WW GroupIV |
| Gtbp1      | 1.15    | 0.87    | 6 GTP-binding protein 1 Q08582 _MAAERSRSPVDS |
| Gtbp1      | 1.18    | 0.94    | 24 GTP-binding protein 1 Q08582 MFAEPEPSSPAAR |
| Gtse1      | 1.66    | 4.11    | 476 G2 and S phase-express Q8R080 RTHRLQSWTPASR CAMK2 |
| Gtse1      | 1.48    | 2.64    | 311 G2 and S phase-express Q8R080 NLRKSSTSGSAS CHK1/2 |
| Hdgf       | 0.93    | 0.96    | 165 Hepatoma-derived growthP51859 GDVLEDSPKRPE CK2 |
| Hdgf       | 0.95    | 1.15    | 132 Hepatoma-derived growthP51859 KGSAEGSSDEEGK CK2 |
| Hdgf       | 0.95    | 1.15    | 133 Hepatoma-derived growthP51859 GSAEGSSDEEGK CK2 |
| Hdgfrep2   | 0.91    | 0.96    | 375 Hepatoma-derived growthQ3UMU9 RAERGGSSGEELE CAMK2 |
| Gene Symbol | Protein Name | Accession Number |
|-------------|--------------|------------------|
| Hdgfrp2     | Hepatoma-derived growth factor | Q8K039 |
| Heatr6      | HEAT repeat-containing | P11881 |
| Herc1       | Herc1 protein | Q4VBD0 |
| Hirip3      | HIRA-interacting protein | YRRTLDS3EEQPR |
| Hist1h1b    | Histone H1.5 | PAPVEKSPAKKTK |
| Hist1h1b    | Histone H1.5 | ETPAPEAAPAPV |
| Hist1h1d    | Histone H1.3 | PAPVEKTPVKKK |
| Hist1h1e    | Histone H1.4 | GAKRKTSGPVM |
| Hist1h1e    | Histone H1.4 | PAPAEKTPVKKK |
| Hmha1       | Minor histocompatibility protein | KKNRAGSPNV |
| Hn1         | Hetero. nuclear r protein | GTQRNSNEAS |
| Hnnrpa1     | Hetero. nuclear r protein | GGRSSGSPY |
| Hnnrph1     | Hetero. nuclear r protein | KHTGPNSPD |
| Hnnrph1     | Hetero. nuclear r protein | TGPNSPD |
| Hnnrpu      | Hetero. nuclear r protein | FHA1Rad53p |
| Hnnrpu1     | Hetero. nuclear r protein | MSSFVNNKK |
| Hsp90ab     | Heat shock protein | KIEDVGS |
| Hsp91       | Heat shock protein | KIEDVGS |
| Huwel1      | Heat shock protein | KIEDVGS |
| Huwel1      | Heat shock protein | KIEDVGS |
| Ier3        | Radiation-inducible immunoregulatory protein | PELRGS |
| Ifngr1      | Interferon-gamma receptor | TPTQRFS |
| Inpp5d      | Phosphatidylinositol-3'-kinase | PSQPPLS |
| Inpp5d      | Phosphatidylinositol-3'-kinase | QPLHGKST |
| IPI00222    | 83 | SLSRHASAA |
| IPI00381    | 237 | IPI00381495. VPSAPPSPRDISM |
| IPI0080774A | 180 | IPI0080774A. ATLDPSPAPGE |
| IPI00880     | 56 | SQSQPQGS |
| Itpr1       | Inositol 1,4,5-trisphosphatase | NAARRD |
| Jakmip1     | Janus kinase and microtubule regulator | SLKRHTSL |
| Kbtbd11     | Kbtbd11 protein | EAGSEAS |
| KIAA114     | Uncharacterized protein | Q8K039 |

**Hepatoma-derived growth factor**

**HEAT repeat-containing**

**Herc1 protein**

**HIRA-interacting protein**

**Histone H1.5**

**Histone H1.5**

**Histone H1.3**

**Histone H1.4**

**Histone H1.4**

**Minor histocompatibility protein**

**Radiation-inducible immunoregulatory protein**

**Interferon-gamma receptor**

**Phosphatidylinositol-3'-kinase**

**Inositol 1,4,5-trisphosphatase**

**Janus kinase and microtubule regulator**

**Kbtbd11 protein**

**Uncharacterized protein**
| Gene       | Score | Permutation | Fold | Protein Description                                                                 |
|------------|-------|-------------|------|-------------------------------------------------------------------------------------|
| Kif21b     | 1.03  | 1.08        | 1.19 | Kinesin-like protein KIF2 Q9QXL1                                                   |
| Klc3       | 0.80  | 0.54        | 0.67 | Kinesin light chain 3 Q9WJ04                                                       |
| Ksr1       | 0.69  | 0.88        | 0.93 | Kinase suppressor of Ras Q61097                                                     |
| Lag3       | 1.82  | 6.38        | 1.91 | Lymphocyte activation gene Q61790                                                   |
| Larp1      | 0.88  | 0.92        | 1.02 | La-related protein 1;La r Q6ZQ58                                                    |
| Larp1      | 1.05  | 0.99        | 1.02 | La-related protein 1;La r Q6ZQ58                                                    |
| Larp1      | 1.05  | 0.99        | 1.01 | La-related protein 1;La r Q6ZQ58                                                    |
| Larp1      | 1.07  | 0.95        | 1.08 | La-related protein 1;La r Q6ZQ58                                                    |
| Larp7      | 0.95  | 1.51        | 0.99 | La-related protein 1;La r Q0SCL8                                                   |
| Larp7      | 1.14  | 1.51        | 1.01 | La-related protein 1;La r Q0SCL8                                                   |
| Lbr        | 1.45  | 1.22        | 0.92 | Lamin-B receptor;Integr.Q3U9G9                                                    |
| Lbr        | 1.54  | 1.24        | 1.00 | Lamin-B receptor;Integr.Q3U9G9                                                    |
| Lcp1       | 4.62  | 6.31        | 2.31 | Plastin-2;L-plastin;LyphilQ6123                                                   |
| Lig1       | 0.83  | 1.02        | 0.95 | DNA ligase 1;DNA ligase P37913                                                      |
| Lig1       | 0.98  | 1.05        | 0.93 | DNA ligase 1;DNA ligase P37913                                                      |
| Lig1       | 4.77  | 6.80        | 2.08 | DNA ligase 1;DNA ligase P37913                                                      |
| Lig1       | 0.81  | 0.76        | 0.68 | DNA ligase 1;DNA ligase P37913                                                      |
| Lmnb1      | 0.31  | 0.94        | 1.10 | Lamin-B1;Lamin-B2;LamP14733                                                        |
| Lnp        | 2.71  | 1.72        | 1.44 | Protein lunapark;Protein Q7Q95                                                   |
| Lrrc8c     | 1.16  | 0.88        | 0.89 | Leucine-rich repeat-cont.Q8R502                                                    |
| Lrrc8c     | 1.26  | 1.00        | 0.90 | Leucine-rich repeat-cont.Q8R502                                                    |
| Lrrc8c     | 1.37  | 1.14        | 1.04 | Leucine-rich repeat-cont.Q8R502                                                    |
| Lsm14a     | 1.15  | 0.84        | 0.93 | Protein LSM14 homolog .Q8K2F8                                                      |
| Lsm14a     | 1.08  | 0.84        | 0.92 | Protein LSM14 homolog .Q8K2F8                                                      |
| Lsp1       | 1.84  | 2.26        | 1.61 | Lymphocyte-specific prot.P19973                                                   |
| Lsp1       | 1.60  | 2.26        | 1.41 | Lymphocyte-specific prot.P19973                                                   |
| Lsp1       | 0.71  | 0.86        | 0.94 | Lymphocyte-specific prot.P19973                                                   |
| Map1s      | 0.48  | 0.46        | 0.82 | Microtubule-associated pQ8C052                                                    |
| Gene         | Value1 | Value2 | Value3 | Symbol   | Description                                      |
|-------------|--------|--------|--------|----------|-------------------------------------------------|
| Nbn         | 2.35   | 2.74   | 1.64   | S        | 398 Nibrin;Nijmegen breakaç Q9R207               |
| Ncapg       | 0.64   | 1.00   | 1.36   | T        | 1003 Ncapg protein B2RQA7                       |
| Ncapg       | 0.75   | 1.00   | 0.73   | S        | 1004 Ncapg protein B2RQA7                       |
| Ncbp1       | 2.73   | 3.72   | 1.62   | T        | 21 Nuclear cap-binding prot Q3UYV9              |
| Ncbp1       | 3.44   | 3.58   | 1.64   | S        | 22 Nuclear cap-binding prot Q3UYV9              |
| Ndrq1       | 0.98   | 1.07   | 0.95   | 1.16     | 330 Protein NDRG1;N-myc d1Q62433                |
| Ndrq1       | 2.38   | 1.22   | 0.83   | T        | 328 Protein NDRG1;N-myc d1Q62433                |
| Ndrq2       | 1.01   | 1.14   | 0.98   | 0.78     | 332 Protein NDRG2;Protein N9QY4G0               |
| Ndrq3       | 1.44   | 1.70   | 1.46   | S        | 344 N-myc downstream regu Q8VC2V                 |
| Nek1        | 0.95   | 0.74   | 0.92   | 0.95     | 1069 Nek1 protein;MKIAA190:B2RXX0               |
| Nmt1        | 0.77   | 0.98   | 0.89   | S        | 47 Glycylpeptide N-tetradec O70310               |
| Nop58       | 1.09   | 0.88   | 0.96   | S        | 509 Nucleolar protein 58;NucQ6DFW4               |
| Nop58       | 1.11   | 0.88   | 1.02   | S        | 521 Nucleolar protein 58;NucQ6DFW4              |
| Nsfl1c      | 0.96   | 0.95   | 1.03   | 0.90     | 116 NSFL1 cofactor p47;p97 Q9CZ44                |
| Nsfl1c      | 1.16   | 1.06   | 1.00   | 1.16     | 178 NSFL1 cofactor p47;p97 Q9CZ44                |
| Nsfl1c      | 1.17   | 1.07   | 0.93   | S        | 748 tRNA (cytosine-5-)-meth Q1HFZ0               |
| Nsfl1c      | 1.07   | 1.21   | 1.04   | 1.01     | 58 Nuclear ubiquitous casei Q80UX3              |
| Nsfl1c      | 0.85   | 0.95   | 0.97   | S        | 181 Nuclear ubiquitous casei Q80UX3             |
| Nsfl1c      | 0.86   | 0.99   | 1.06   | S        | 19 Nuclear ubiquitous casei Q80UX3              |
| Nsfl1c      | 0.83   | 1.02   | 1.08   | S        | 61 Nuclear ubiquitous casei Q80UX3              |
| Nsfl1c      | 0.83   | 2.27   | 2.29   | 1.32     | 649 Nuclear fragile X mental Q5F2E7             |
| Ogfr        | 1.42   | 1.37   | 1.34   | S        | 403 Opioid growth factor recr Q9RPG2             |
| Otud4       | 1.01   | 1.00   | 1.04   | S        | 1016 Otud4 protein B2RRE7                       |
| Otud4       | 1.01   | 1.00   | 1.05   | S        | 1017 Otud4 protein B2RRE7                       |
| Otud5       | 1.01   | 1.23   | 1.02   | S        | 64 OTU domain containing AA2AES4                |
| Pat1        | 1.21   | 0.86   | 1.08   | S        | 179 Protein PAT1 homolog 1;Q3TC46               |
| Pcbp1       | 1.87   | 1.31   | 1.11   | S        | 173 Poly(rC)-binding protein P60335             |
| Pctl1       | 0.95   | 0.94   | 1.34   | S        | 495 PCT1;Pctl1 protein ASHLW0                    |
| Pdlim2      | 1.00   | 0.87   | 0.84   | 1.03     | 204 PDZ and LIM domain proQ8R1G6                |
| Pdlim2      | 0.98   | 0.88   | 0.88   | 0.96     | 199 PDZ and LIM domain proQ8R1G6                |
| Pdlim2      | 1.15   | 0.84   | 0.80   | S        | 134 PDZ and LIM domain proQ8R1G6                |
| Gene Symbol | Accession | Description |
|-------------|-----------|-------------|
| Pdlim2      | Q9R1C7    | 205 PDZ and LIM domain pro Q8R1G6 |
| Pdpk1       | Q8BZ03    | 244 3-phosphoinositide-depe Q9Z2A0 |
| Pds5a       | Q4VA93    | 1174 Sister chromatid cohesin Q6A026 |
| Pds5b       | Q9EQC8    | 1358 Sister chromatid cohesin Q4VA53 |
| Pdxdc1      | Q5SW28    | 687 Pyridoxal-dependent dec Q99K01 |
| Pea15       | Q8BKC8    | 116 Astrocytic phosphoprotein Q62048 |
| Pgam1       | Q9EQC8    | 14 Phosphoglycerate mutase Q9DBJ1 |
| Pgrmc1      | Q8BKC8    | 181 Membrane-associated pr Q55022 |
| Phactr4     | Q501J7    | 128 Phosphatase and actin rec Q55017 |
| Phf6        | Q8BWW9    | 155 PHD finger protein 6;PHF Q9D4J7 |
| Pi4kb       | Q9D4J7    | 413 Phosphatidylinositol 4-ki Q8BC8 |
| Pi4kb       | Q8BWW9    | 292 Phosphatidylinositol 4-ki Q8BC8 |
| Pik3r5      | Q9D4J7    | 451 Phosphoinositide 3-kinase Q5SW28 |
| Pkn2        | Q8BWW9    | 582 Serine/threonine-protein Q8BW9 |
| Plcg1       | Q8BWW9    | 1248 1-phosphatidylinositol-4, Q62077 |
| Ploc1       | Q8BWW9    | VRAREGSFEARYQ |
| Ploc2       | Q8BWW9    | PKA/akt |
| Plekha2     | Q8BWW9    | Pleckstrin homology dorr Q9ERS5 |
| Plekha2     | Q8BWW9    | Pleckstrin homology dorr Q9ERS5 |
| Plekha2     | Q8BWW9    | Pleckstrin homology dorr Q9ERS5 |
| Plekho2     | Q8BWW9    | Pleckstrin homology dorr Q8K124 |
| Pnn         | Q8BWW9    | Pinin;Purative uncharact Q3TUQ5 |
| Pola1       | Q8BWW9    | DNA polymerase alpha c Q33609 |
| Ppfla1      | Q8BWW9    | 242 Ppfla1 protein;Ppfla1 proc B2RXQ2 |
| Ppp2r5d     | Q5SW28    | 566 Protein phosphatase 2A IQ7TNL5 |
| Ppp4r2      | Q8BWW9    | 226 Serine/threonine-protein Q0VGB7 |
| Prc          | Q8BWW9    | 157 Papillary renal cell carcinoma Q9EQC8 |
| Prc          | Q8BWW9    | 159 Papillary renal cell carcinoma Q9EQC8 |
| Prkaa1      | Q8BWW9    | 486 5'-AMP-activated protein Q5EG47 |
| Prkaa1      | Q8BWW9    | 496 5'-AMP-activated protein Q5EG47 |
| Prkar2a     | Q8BWW9    | 97 Protein kinase, cAMP dep Q8K1M3 |
| Prkca       | Q8BWW9    | 226 Prkca protein;Protein kin Q4VA93 |
| Prkd2       | Q8BWW9    | 711 Serine/threonine-protein Q8BZ03 |
| Prpd2       | Q8BWW9    | 211 Serine/threonine-protein Q8BZ03 |
| Prpf40a     | Q8BWW9    | 34 Pre-mRNA-processing far Q9R1C7 |

Note: Gene descriptions include alternative names and domains where applicable.
| Gene Name | Log2 Fold Change | q-value | P-value |
|-----------|-----------------|---------|---------|
| Prpf4b    | 1.24            | 0.96    | 1.12    |
| Prpf4b    | 1.34            | 1.06    | 1.12    |
| Psmd4     | 1.70            | 1.13    | 1.01    |
| Psme2     | 0.96            | 0.95    | 1.05    |
| Psme2     | 0.99            | 0.95    | 0.94    |
| Ptk2b     | 1.01            | 1.13    | 0.97    |
| Ptpn22    | 0.84            | 1.11    | 1.20    |
| Ptpn7     | 7.94            | 2.78    | 7.33    |
| Ptprc     | 1.08            | 0.95    | 0.96    |
| Pum1      | 1.07            | 0.81    | 0.93    |
| Pum1      | 1.10            | 2.71    | 1.18    |
| Pum2      | 1.10            | 0.79    | 0.97    |
| Pum2      | 1.00            | 0.87    | 0.89    |
| Pum2      | 0.73            | 0.85    | 1.03    |
| Pum2      | 0.95            | 2.37    | 1.45    |
| Pxn       | 1.48            | 1.86    | 1.31    |
| Qsk       | 1.02            | 0.70    | 0.97    |
| Qsk       | 1.14            | 1.03    | 1.46    |
| Qtrt1     | 1.01            | 1.15    | 1.19    |
| Rab11fip  | 1.19            | 0.77    | 0.82    |
| Rab3gap   | 3.54            | 2.62    | 3.70    |
| Raf1      | 2.46            | 3.31    | 1.44    |
| Ran       | 8.96            | 6.50    | 1.99    |
| Ranbp3    | 1.00            | 0.95    | 1.11    |
| Ranbp3    | 1.25            | 1.29    | 1.48    |
| Rangap1   | 0.78            | 1.01    | 0.93    |
| Rapgef6   | 1.20            | 0.94    | 1.03    |
| Rasal3    | 0.40            | 1.90    | 3.18    |
| Rasal3    | 2.28            | 2.93    | 3.82    |
| Rasal3    | 0.51            | 0.28    | 0.49    |
| Rasal3    | 0.67            | 0.71    | 0.61    |
| Rasal3    | 1.09            | 2.99    | 2.73    |
| Rasal3    | 0.64            | 0.55    | 1.12    |
| Rasgrp2   | 0.31            | 17.96   | 0.88    |

437 PRP4 pre-mRNA processing B2RUN6  SPINRWSPTRRRS CDK2
431 PRP4 pre-mRNA processing B2RUN6  ERSKDASPINRWS CK1
250 26S proteasome non-ATF035226  AEAGIATPGTEDS
10 Psme2 protein; Proteasome inhibitor P133807L8  PCGVRSLG4R8R9K PKA
153 Proteasome activator complex subunit 28  EKARANSPR4F PKA
375 Protein tyrosine kinase 2 Q9QP9V9  DKGR3N5L2QIPT AURORA-A
452 Protein tyrosine phosphatase B0V3P7  PVKRTKSTPPFLI PKA
143 Tyrosine-protein phosphatase 488UM3  CLGKAPSQEDS CHK1/2
823 Leucocyte common antigen Q46730  SKHRWPTGDI2H CA MK2
112 Pumilio homolog 1; Pumilio homolog 2  SGSRRDSLTS SADSS PKA/AKT
710 Pumilio homolog 1; Pumilio homolog 2  CKDFNRTPG9QA FPA KAPP
174 Pumilio homolog 2; Pumilio homolog 2  FNRTPGSQAP8T GSK3
177 Pumilio homolog 2; Pumilio homolog 2  DQKGKASPFEEDQ CK2
136 Pumilio homolog 2; Pumilio homolog 2  SATRRESLTS SADSS PKA/AKT
587 Pumilio homolog 2 Q08508  AKHQQPSPLPVS WW GroupIV
83 Paxillin; Paxillin Q8VI36  _MAAVLSPGSLES ERK/MAPK
551 Serine/threonine-protein kinase Q6P456  PLGRARSDGGAN C1H1/2
647 Serine/threonine-protein kinase Q6P456  SPVRFRSDGAASI PKA
662 RAF proto-oncogene 2 Q99N75  ACTLTTTSRPLVF CDK1
135 GTP-binding nuclear protein P62827  RKVKAKSIVFHRK
257 Ran-binding protein 3 Q9CT10  MERSVLSPKLN ERK/MAPK
58 Ran-binding protein 3 Q9CT10  KRERTSSLTHSEE PKA/ATK
444 Ran GTPase-activating protein P46061  TFLSPSPEKLLR CDK2
1102 Rapgef6 protein; Putative B2RUJ6  KRARRSSIGNAKK AURORA-A
885 RAS protein activator like Q8C2K5  RAWTRASALS LPRK PKA
52 RAS protein activator like Q8C2K5  GWGRALSHQEP MV CAMK2
887 RAS protein activator like Q8C2K5  WTRASALSP RKPS PKA
818 RAS protein activator like Q8C2K5  KSQSLRSGGAGS CK1
241 RAS protein activator like Q8C2K5  EKRAKSELGAYT PKA
813 RAS protein activator like Q8C2K5  TPLIKSQSLRSF PKA/AKT
554 RAS guanyl-releasing protein Q9QU9G  CRRAQSVSLEG CAMK2

**Note:** The above table lists some genes and their gene ontology (GO) annotations, along with their log2 fold changes, q-values, and p-values. The genes are related to various cellular processes and pathways, including protein processing, proteasomal activity, and signaling pathways. The table includes genes such as Prpf4b, Psme2, Pumilio, Paxillin, and others, along with their respective annotations and fold changes. The annotations are linked to specific protein functions and cellular components.
| Gene       | Start | End  | Description                                                                 |
|-----------|-------|------|-----------------------------------------------------------------------------|
| Rasgrp2   | 0.80  | 2.57 | RAS guanyl-releasing protein Q9UG9                                           |
| Rassf2    | 0.41  | 2.54 | Ras association domain-Q8BMS9                                                |
| Raver1    | 1.12  | 1.07 | 14 Ribonucleoprotein PTB-b Q9CW4                                             |
| Raver1    | 1.41  | 1.25 | 14 Ribonucleoprotein PTB-b Q9CW4                                             |
| Rbm12ba   | 1.50  | 1.13 | RNA-binding protein 12B Q80YR                                               |
| Rbm3      | 1.22  | 1.33 | Putative RNA-binding protein Q8098                                              |
| Rbm7      | 5.11  | 9.22 | 136 RNA-binding protein 7;RQ9CT2                                             |
| Rcsd1     | 8.89  | 1.31 | 105 Capz-interacting protein Q3UZA1                                            |
| Rcsd1     | 0.87  | 1.60 | 108 Capz-interacting protein Q3UZA1                                            |
| Rcsd1     | 5.23  | 4.69 | 83 Capz-interacting protein Q3UZA1                                            |
| Rcsd1     | 0.52  | 0.35 | 120 Capz-interacting protein Q3UZA1                                            |
| Rcsd1     | 1.44  | 3.39 | 177 Capz-interacting protein Q3UZA1                                            |
| Rcsd1     | 0.88  | 2.74 | 179 Capz-interacting protein Q3UZA1                                            |
| Rdip      | 2.54  | 5.06 | Negative elongation fact P19426                                               |
| Rdip      | 2.18  | 3.91 | Negative elongation fact P19426                                               |
| Rec1l5    | 1.12  | 1.03 | RecQ5 protein Q76MT2                                                         |
| Reps1     | 1.10  | 1.31 | RalBP1-associated Eps d054916                                                |
| Reps1     | 0.71  | 0.62 | RalBP1-associated Eps d054916                                                |
| Rfx7      | 0.94  | 0.97 | Putative uncharacterized Q3TSB6                                               |
| Rgs3      | 1.14  | 0.69 | Regulator of G-protein si Q9DC04                                              |
| Rgs3      | 0.96  | 0.67 | Regulator of G-protein si Q9DC04                                              |
| Ripk1     | 1.40  | 4.07 | Receptor-interacting ser Q60855                                              |
| Rnf12     | 1.09  | 1.26 | Putative uncharacterized Q8CE02                                               |
| Rnf12     | 1.54  | 1.35 | Putative uncharacterized Q8CE02                                               |
| Rnf219    | 0.98  | 0.90 | RING finger protein 219 Q8K2Y0                                               |
| Rnmt      | 0.97  | 1.18 | mRNA cap guanine-N7 rQ9D0L8                                                   |
| Rnmt      | 1.17  | 1.95 | mRNA cap guanine-N7 rQ9D0L8                                                   |
| RP23-26   | 1.29  | 1.21 | Uncharacterized protein Q88Z9R                                                |
| Rpl4      | 1.04  | 1.05 | 60S ribosomal protein L-Q9D8E6                                                |
| Rplp1     | 0.91  | 0.88 | 60S acidic ribosomal pro P47955                                              |
| Rplp1     | 1.07  | 0.88 | 60S acidic ribosomal pro P47955                                              |
| Rplp2     | 0.99  | 1.03 | 60S acidic ribosomal pro P47955                                              |
| Rps10     | 1.28  | 2.42 | 40S ribosomal protein S:P63325                                                |
| Sh3kb1 | 1.51 | 1.69 | 1.45 | S | 27 | SH3 domain-containing; Q8R550 | NCBI ID: Q8R550 | SAMSN1 | 574 | SAMSN1, SH3 domain-containing, expressed in tumorigenic astrocytes }  
| Rps27 | 0.97 | 0.99 | 1.04 | S | 11 | 40S ribosomal protein S; Q6ZWU9 | Uniprot ID: Q6ZWU9 | SAPS1 | 1160 | RPS6KA2 | 51 | RPS6KA2, SH3-containing, expressed in tumorigenic astrocytes }  

**Note:** The table above lists protein names and their features, which are typically used in biological studies to identify and analyze protein functions and interactions.
| Protein Name | Fold Change | Description |
|--------------|-------------|-------------|
| Sipa1        | 0.78        | 53 Signal-induced proliferat P46062 |
| Sipa1        | 2.43        | 72 Signal-induced proliferat P46062 |
| Sit1         | 1.32        | 166 Signaling threshold-regul Q8C503 |
| Slc38a1      | 0.86        | 54 Sodium-coupled neutral Q8K2P7 |
| Slc38a1      | 1.30        | 52 Sodium-coupled neutral Q8K2P7 |
| Slc4a7       | 0.32        | 57 Sodium bicarbonate cotr Q8BY2 |
| Slc4a7       | 0.19        | 60 Sodium bicarbonate cotr Q8BY2 |
| Slc7a6os     | 1.56        | 156 Protein SLC7A6OS;Solut-q7TEP5 |
| Slc9a3r1     | 0.10        | 285 Na(+)/H(+) exchange re P70441 |
| Slc9a3r1     | 1.32        | 283 Na(+)/H(+) exchange re P70441 |
| Slc9a3r1     | 0.85        | 275 Na(+)/H(+) exchange re P70441 |
| Smp          | 1.00        | 15 Small acidic protein;Sid : Q9R0P4 |
| Smp2         | 1.05        | 219 Stromal membrane-asso Q7TN29 |
| Smek1        | 0.92        | 728 Serine/threonine-protein Q6P2K6 |
| Smg1         | 0.91        | 3567 Serine/threonine-protein Q8BKX6 |
| Smg1         | 0.91        | 3570 Serine/threonine-protein Q8BKX6 |
| Smg9         | 1.32        | 7 Protein SMG9;Protein sr Q9DB90 |
| Smm1         | 1.13        | 25 Survival motor neuron piP97801 |
| Snmp70       | 0.96        | 226 U1 small nuclear ribonuc Q62376 |
| Snx2         | 4.73        | 104 Sorting nixin-2 Q9CWK8 |
| Spata5       | 4.73        | 273 Spermatogenesis-associ Q3UMC0 |
| Srp72        | 1.61        | 624 Srp72 protein;Putative u A0JL1N |
| Srp72        | 1.70        | 625 Srp72 protein;Putative u A0JL1N |
| Srrm1        | 1.20        | 461 Serine/arginine repetitiv Q52KI8 |
| Srrm1        | 1.17        | 572 Serine/arginine repetitiv Q52KI8 |
| Srrm1        | 1.17        | 574 Serine/arginine repetitiv Q52KI8 |
| Srrm1        | 1.04        | 427 Serine/arginine repetitiv Q52KI8 |
| Srrm1        | 1.06        | 429 Serine/arginine repetitiv Q52KI8 |
| Srrm1        | 0.98        | 915 Serine/arginine repetitiv Q52KI8 |
| Srrm1        | 1.24        | 913 Serine/arginine repetitiv Q52KI8 |
| Srrm1        | 0.99        | 624 Serine/arginine repetitiv Q52KI8 |

**Signaling Pathways:**
- PKA/AKT
- ERK/MAPK
- CDK1/2
- AURORA
- NEK6

**Protein Functions:**
- Signal-induced proliferation
- Sodium-coupled neutral amino acid transporter
- Na(+)/H(+) exchange regulatory cofactor
- Stromal membrane-associated protein
- Sorting nexin-2
| Protein                          | Value         | Value         | Value         | Description                                                                 | Accession  |
|---------------------------------|---------------|---------------|---------------|-----------------------------------------------------------------------------|------------|
| Srrm1                           | 1.08          | 0.95          | 1.17          | Serine/arginine repetitive matrix protein 2                               | 391        |
| Srrm2                           | 1.10          | 1.05          | 1.10          | Serine/arginine repetitive matrix protein 2                               | 389        |
| Srrm1                           | 1.06          | 1.07          | 0.95          | Serine/arginine repetitive matrix protein 2                               | 424        |
| Srrm1                           | 1.08          | 1.16          | 1.12          | Serine/arginine repetitive matrix protein 2                               | 387        |
| Srrm1                           | 1.07          | 0.90          | 1.00          | Serine/arginine repetitive matrix protein 2                               | 404        |
| Srrm1                           | 1.00          | 0.90          | 1.04          | Serine/arginine repetitive matrix protein 2                               | 412        |
| Srrm1                           | 1.04          | 1.00          | 0.92          | Serine/arginine repetitive matrix protein 2                               | 600        |
| Srrm1                           | 1.04          | 1.00          | 0.92          | Serine/arginine repetitive matrix protein 2                               | 602        |
| Srrm2                           | 1.19          | 0.76          | 0.41          | Serine/arginine repetitive matrix protein 2                               | 448        |
| Srrm2                           | 1.00          | 0.89          | 0.70          | Serine/arginine repetitive matrix protein 2                               | 1151       |
| Srrm2                           | 1.22          | 1.25          | 1.14          | Serine/arginine repetitive matrix protein 2                               | 1360       |
| Srrm2                           | 1.42          | 1.42          | 0.85          | Serine/arginine repetitive matrix protein 2                               | 2646       |
| Srrm2                           | 1.30          | 1.78          | 1.12          | Serine/arginine repetitive matrix protein 2                               | 1339       |
| Srrm2                           | 1.23          | 0.80          | 0.97          | Serine/arginine repetitive matrix protein 2                               | 2360       |
| Srrm2                           | 1.30          | 0.93          | 1.18          | Serine/arginine repetitive matrix protein 2                               | 2535       |
| Srrm2                           | 1.30          | 1.02          | 1.14          | Serine/arginine repetitive matrix protein 2                               | 1269       |
| Srrm2                           | 1.32          | 1.27          | 1.05          | Serine/arginine repetitive matrix protein 2                               | 2537       |
| Srrm2                           | 0.95          | 0.82          | 1.38          | Serine/arginine repetitive matrix protein 2                               | 2648       |
| Srrm2                           | 1.13          | 1.07          | 1.02          | Serine/arginine repetitive matrix protein 2                               | 1372       |
| Srrm2                           | 1.08          | 1.15          | 1.11          | Serine/arginine repetitive matrix protein 2                               | 1153       |
| Srrm2                           | 0.83          | 0.70          | 0.72          | Serine/arginine repetitive matrix protein 2                               | 2656       |
| Srrm2                           | 1.35          | 1.86          | 1.35          | Serine/arginine repetitive matrix protein 2                               | 1068       |
| Srrm2                           | 1.22          | 3.07          | 0.94          | Serine/arginine repetitive matrix protein 2                               | 1077       |
| Srrm2                           | 1.56          | 1.09          | 0.97          | Serine/arginine repetitive matrix protein 2                               | 2054       |
| Srrm2                           | 1.56          | 1.07          | 1.54          | Serine/arginine repetitive matrix protein 2                               | 2056       |
| Ssfa2                           | 1.01          | 0.93          | 1.26          | Sperm-specific antigen 1                                                   | 738        |
| Ssr3                            | 3.19          | 3.52          | 1.45          | Translocon-associated pr                                                    | 105        |
| Stk10                           | 1.27          | 2.02          | 1.53          | Serine/threonine kinase                                                    | 950        |
| Stk11ip                          | 1.21          | 1.07          | 1.08          | Serine/threonine kinase                                                    | 388        |
| Stmn1                           | 1.48          | 1.33          | 1.35          | Stathmin;Phosphoprotein                                                   | 38         |
| Stmn1                           | 1.24          | 1.33          | 1.01          | Stathmin;Phosphoprotein                                                   | 63         |
| Stmn1                           | 3.19          | 2.35          | 1.29          | Stathmin;Phosphoprotein                                                   | 16         |
| Stmn1                           | 4.99          | 3.13          | 7.46          | Stathmin;Phosphoprotein                                                   | 25         |

| Description                      | Accession  |
|---------------------------------|------------|
| RLSPSASPPRRH                    | CDK2       |
| TRRLPSASPPRR                    | NEK6       |
| SNRTRKSRVSVP                    | PKA        |
| RKTRRLPSASPP                    | PKA/AKT    |
| RPSSPATPPKTR                    | WW GroupIV |
| PPKTRHSPTPQQS                   | PKA        |
| PPPRRTPSPPR                    | PKA/AKT    |
| MLDARSRTPPSA                   | CHK1/2     |
| ALKRVPSPTVPK                    | PKA        |
| WSGPQVSPEHEL                   |            |
| KRVPSPTVPKEA                   |            |
| SRSLSYSPVERQ                   | CK2        |
| VQRTPRERSSS                   | CAMK2      |
| FSSQKVSSPVLET                   | CK1        |
| RDKFSPTQRDPES                   |            |
| VERRQPSQPSPR                   | CAMK2      |
| SLSRSSHVTLET                   | CHK1/2     |
| TELTARSPVQDK                   | CDK2       |
| TRNHSGRTPPPVA                   |            |
| NGSRTTPVALS                   |            |
| PLRRQSLPITT                   | 14-3-3 binding |
| EVTRKLEADNKR                   | PKA        |
| AERPRTTPSKASN                   | WW GroupIV |
| VRVRRASIPSSD                   | PKA/AKT    |
| VPDFPLSPPKKD                   | WW GroupIV |
| AEERRKSHAЕВL                   | PKA        |
| ELEKRASGQAEFL                   | PKD        |
| AFELILSPRSKES                   | CDK1       |
| Protein Name                  | Ch1 | Ch2 | Ch3 | Ch4 | Gene Name                  |
|-----------------------------|-----|-----|-----|-----|---------------------------|
| 269 Testis-expressed sequen-Q6ZP0 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 195 Testis-expressed sequen-Q6ZP0 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 265 Testis-expressed sequen-Q6ZP0 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 88 THUMP domain-containir-Q99J36 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 86 THUMP domain-containir-Q99J36 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 8 THUMP domain-containir-Q99J36 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 680 Tnik protein; Tnik protein | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 349 Target of EGR1 protein 1 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 186 Mitochondrial import rec-Q9CGY7 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 189 Tumor protein D52-like | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 737 TPX2, microtubule-associ-A2APB8 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 14 Putative uncharacterized Q3UL4 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 11 Tubulin--tyrosine ligase-lQ3UD2 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 495 Clik-2-Scamp3 protein; Se B2M0S2 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 523 Alpha-taxilin               | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 2 Splicing factor U2AF 65          | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 79 Splicing factor U2AF 65          | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 46 Ubiquitin-like modifier-ac-Q2053 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 634 Ubiquitin-associated prot-Q80X50 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 13 Putative uncharacterized Q3TED7 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 278 Putative uncharacterized Q3UGV7 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 149 Unc-13 homolog D (C. elA2A856 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 298 UFPS057 protein C10orf1Q8R3C0 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 269 UFPS0667 protein C1orf58Q8K155 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 212 Cytochrome b-c1 comple-Q9CZ13 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |
| 205 Ubiquitin carboxyl-termir-P52479 | 1.00 | 0.95 | 0.95 | 0.95 | Q8K1J5                    |

**Notes:**
- **Ch1, Ch2, Ch3, Ch4:** These columns likely represent different testing or experimental conditions.
- **Gene Name:** The gene names correspond to the proteins listed in the first column.

**References:**
- [1] Carabin; TBC1 domain family member Q9C8V1
- [2] TBC1 domain family member Q9C8V1
- [3] TBC1 domain family member Q9C8V1
- [4] TBC1 domain family member Q9C8V1
- [5] TBC1 domain family member Q9C8V1
| Protein          | Accession | 1.56 | 1.08 | 1.01 |
|------------------|-----------|------|------|------|
| Usp15            | P02321    | 1.56 | 1.08 | 1.01 |
| Usp39            | Q9R020    | 1.56 | 1.08 | 1.01 |
| Usp8             | Q71FD5    | 1.56 | 1.08 | 1.01 |
| Usp8             | Q8BHW0    | 1.56 | 1.08 | 1.01 |
| Vim              | Q9DBR1    | 1.56 | 1.08 | 1.01 |
| Wdr26            | Q91XU0    | 1.56 | 1.08 | 1.01 |
| Wipf1            | Q3UPF5    | 1.56 | 1.08 | 1.01 |
| Wnnp1            | Q8K1I7    | 1.56 | 1.08 | 1.01 |
| Xrn2             | Q8K327    | 1.56 | 1.08 | 1.01 |
| Zc3h1a           | Q3TIX9    | 1.56 | 1.08 | 1.01 |
| Zc3h18           | Q8R5H1    | 1.56 | 1.08 | 1.01 |
| Zc3h4            | A2AI52    | 1.56 | 1.08 | 1.01 |
| Zc3hav1          | A2AI52    | 1.56 | 1.08 | 1.01 |
| Zfp361l          | A2AI52    | 1.56 | 1.08 | 1.01 |
| Znf828           | A2AI52    | 1.56 | 1.08 | 1.01 |
| Znf828           | Q8R5H1    | 1.56 | 1.08 | 1.01 |
| Znf2             | Q8R5H1    | 1.56 | 1.08 | 1.01 |
| Zranb2           | Q8R5H1    | 1.56 | 1.08 | 1.01 |

Additional proteins and their corresponding accession numbers are listed below:

| Protein          | Accession | 1.56 | 1.08 | 1.01 |
|------------------|-----------|------|------|------|
| 229 Ubiquitin carboxyl-terminal Q8R5H1 | GPSTPKSPGASNFA | WW GroupIV |
| U4/U6.U5 tri-snRNP-assoc Q3TX9 | READESEPTEVER | CK2 |
| Ubiquitin carboxyl-terminal A2AI52 | PSKLRSSSPPDI | NIMA |
| Ubiquitin carboxyl-terminal A2AI52 | KLKRSSSPDTIQ | 14-3-3 binding |
| Vimentin;Vimentin P02152 | RSLYSSPAGVY | Polo box |
| 101 WD repeat-containing pr Q8C6G8 | KKKKRLSQSDEDD | PKA |
| WAS/WASL-interacting p Q8K117 | LPQRNLSTLSAP | CAMK2 |
| WAS/WASL-interacting p Q8K117 | SAPPLPSGSRGP | CDK2 |
| ATPase WRNIP1;Werner Q91XU0 | AAAGSAPRSWDE | CDK1 |
| 5'-3' exoribonuclease 2;fQ9DBR1 | KAEDSDEPEPED | CDK1 |
| 5'-3' exoribonuclease 2;fQ9DBR1 | KRKAEDSDEPEP | CDK2 |
| Zinc finger CCCH domain Q6NF1 | IJKKEVSPEVRS | PKD |
| Putative uncharacterized Q8BHW0 | IIQKEVSPEVRS | PKD |
| Zinc finger CCCH domain Q0P678 | KLGVSVSPSRARR | CDK2 |
| Zinc finger CCCH domain Q6PZ3 | SPFAGNAPARE | CDK2 |
| Zinc finger CCCH-type ar Q3UPF5 | RNRDSSTSRTSA | CK1 |
| Zinc finger CCCH-type ar Q3UPF5 | SNRDSSTSRTSA | CK1 |
| Zinc finger CCCH-type ar Q3UPF5 | NRSDSSTSRTSA | CK1 |
| Zinc finger CCCH-type ar Q3UPF5 | SSTRTSAAAFPL | PKA |
| Zinc finger CCCH-type ar Q3UPF5 | RSDSRTSAAAG | PKA |
| Zinc finger CCCH-type ar Q3UPF5 | DSSTRTSAAAGFP | FKA KAP |
| Probable palmitoyltransferase ZDHHC5 | RSGGLGPSPEGAG | FHA KAPP |
| Zinc finger, C3H1-type α B2RT4 | NLTRRLSADIVS | PKA/ACT |
| Butyrate response factor P23950 | GFPRHSVTLPSS | PKA/ACT |
| Butyrate response factor P23949 | GFLRHSASNLA | PKA/ACT |
| Zinc finger protein 828 | SSGSWKTPTSPE | CK1 |
| Zinc finger protein 828 | WKTTPTESWKS | WW GroupIV |
| Zinc finger protein 828 | LLDEALSSSKKL | WW GroupIV |
| Zinc finger protein 828 | GRTRAYSGSDLP | PKA/ACT |
| Zinc finger protein 828 | AAPRSRLGLAGAV | CAMK2 |
| Zinc finger Ran-binding c Q9R020 | SRSRPSSPAVRK | PKA/ACT |
Supplementary Table 3 Microarray. Full list of genes with a fold change of 2 fold or more in GFP-ΔP-HDAC7 expressing cells relative to control cells (GFP negative). Data includes Affimetroix probe set ID, Gene Bank accession number, gene symbol, gene name and fold change (GEO Series accession number GSE27092 (http://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE27092)).
| Probe Set ID | REFSEQ_ACC | GENE_SYMBOL | GENE_TITLE | Fold change |
|--------------|------------|-------------|------------|-------------|
| 1437602_at   | NM_00101378 | LOC100044153///OT | hypothetical protein LOC100044153///predicted gene | 0.0740655 |
| 1417216_at   | NM_138606 | Pim2 | proviral integration site 2 | 0.08874479 |
| 1426808_at   | NM_010705 | Lgals3 | lectin, galactose binding, soluble 3 | 0.08956825 |
| 1454685_at   | NM_00103870 | Gpr146 | G protein-coupled receptor 146 | 0.09459464 |
| 1437405_a_at | NM_010517 | Igfbp4 | insulin-like growth factor binding protein 4 | 0.10535389 |
| 1448990_at   | NM_008452 | Klf2 | Kruppel-like factor 2 (lung) | 0.107614405 |
| 1455843_at   | NM_010242 | Fut4 | fucosyltransferase 4 | 0.10871443 |
| 1423632_at   | NM_00103870 | Gpr146 | G protein-coupled receptor 146 | 0.11855165 |
| 1423756_s_at | NM_010517 | Igfbp4 | insulin-like growth factor binding protein 4 | 0.11914482 |
| 1450495_a_at | NM_001083322 | Klrk1 | killer cell lectin-like receptor subfamily K, member 1 | 0.12895209 |
| 1450790_at   | NM_009375 | Tg | thyroglobulin | 0.1359206 |
| 1452367_at   | NM_178893 | Coro2a | corin, actin binding protein 2A | 0.1396474 |
| 1441428_at   | NA | NA | Adult male liver tumor cDNA, RIKEN full-length enrich | 0.14241657 |
| 1428484_at   | NM_027881 | Osbpl3 | oxysterol binding protein-like 3 | 0.16549882 |
| 1452213_at   | NM_198292 | Tex2 | testis expressed gene 2 | 0.16783056 |
| 1460245_at   | NM_010654 | Krld1 | killer cell lectin-like receptor, subfamily D, member 1 | 0.17125887 |
| 1421571_a_at | NM_00109921 | LOC100041546///LOC | lymphocyte antigen 6 complex, locus C1///lymphocyt | 0.17845793 |
| 1441946_at   | NM_172471 | Itih5 | inter-alpha (globulin) inhibitor H5 | 0.17876111 |
| 1453076_at   | NM_030060 | 9130211I03Rik | RIKEN cDNA 9130211I03 gene | 0.18036515 |
| 1417155_at   | NM_008709 | Mycn | v-myc myelocytomatosis viral related oncogene, neur | 0.18058664 |
| 1426001_at   | NM_010136 | Eomes | eomesodermin homolog (Xenopus laevis) | 0.1818782 |
| 1418843_at   | NM_011774 | Slc30a4 | solute carrier family 30 (zinc transporter), member 4 | 0.19413568 |
| 1420691_at   | NM_008367 | Il2ra | interleukin 2 receptor, alpha chain | 0.19640855 |
| 1435172_at   | NM_010136 | Eomes | eomesodermin homolog (Xenopus laevis) | 0.1976554 |
| 1426092_at   | NM_008367 | Il2ra | interleukin 2 receptor, alpha chain | 0.20390797 |
| 1456509_at   | XM_485253///1110032F04Rik | RIKEN cDNA 1110032F04 gene | 0.20936912 |
| 1455161_at   | XR_035122///AI504432 | expressed sequence AI504432 | 0.22470555 |
| 1429159_at   | NM_172471 | Itih5 | inter-alpha (globulin) inhibitor H5 | 0.22996025 |
| 1444203_at   | NA | NA | NA | 0.23090018 |
| 1456126_at   | NM_172833 | Malt1 | mucosa associated lymphoid tissue lymphoma transloc | 0.23407914 |
| 1424981_at   | NM_029447 | Nln | neurolysin (metalloprotease M3 family) | 0.23903333 |
| 1450871_a_at | NM_00102446 | Bcat1 | branched chain aminotransferase 1, cytosolic | 0.24033621 |
| 1425471_x_at | NA | NA | NA | 0.24246974 |
| Gene ID   | Entrez ID | Gene Symbol | Gene Name | Expression Value |
|----------|-----------|-------------|-----------|------------------|
| 1436329_at | NM_018781 | Egr3 | early growth response 3 | 0.24558266 |
| 1460370_at | NM_028404 | Top1mt | DNA topoisomerase 1, mitochondrial | 0.25053072 |
| 1425470_at | NA | NA | NA | 0.25558507 |
| 1449175_at | NM_008152 | Gpr65 | G-protein coupled receptor 65 | 0.2611975 |
| 1424847_at | LOC100045304///NM_028404 | Top1mt | DNA topoisomerase 1, mitochondrial | 0.26517606 |
| 1454659_at | NM_178788 | Dctd | dCMP deaminase | 0.26816025 |
| 1448740_at | NM_021329 | Rangrf | RAN guanine nucleotide release factor | 0.27049327 |
| 1436755_at | NM_172471 | Itih5 | inter-alpha (globulin) inhibitor H5 | 0.27248612 |
| 1456064_at | XR_035122///NM_021329 | Rangrf | RAN guanine nucleotide release factor | 0.27327943 |
| 1425804_at | XM_203393///NM_021329 | Rangrf | RAN guanine nucleotide release factor | 0.27356714 |
| 1428706_at | XM_203393///XM_203393 | Rangrf | RAN guanine nucleotide release factor | 0.27484265 |
| 1418872_at | NM_011075 | Abcb1b | ATP-binding cassette, sub-family B (MDR/TAP), meml | 0.27699004 |
| 1417212_at | NM_026633 | 9530058B02Rik | RIKEN cDNA 9530058B02 gene | 0.27799508 |
| 1438385_s_at | NM_173866 | Gpt2 | glutamic pyruvate transaminase (alanine aminotransferase) 2 | 0.2793044 |
| 1441894_s_at | NM_019518 | Grasp | GRP1 (general receptor for phosphoinositides 1)-assoc | 0.2810972 |
| 1424223_at | NM_026443 | 1700020C11Rik | RIKEN cDNA 1700020C11 gene | 0.2826586 |
| 1419481_at | NM_011346 | Sell | selectin, lymphocyte | 0.28421494 |
| 1434046_at | NM_00100417 | AA467197 | expressed sequence AA467197 | 0.28539267 |
| 1421628_at | NM_008365 | Il18r1 | interleukin 18 receptor 1 | 0.2862488 |
| 1435086_s_at | NM_027117 | Klhdc2 | kelch domain containing 2 | 0.28758034 |
| 1457120_at | NM_010583 | Itk | IL2-inducible T-cell kinase | 0.29066303 |
| 1460768_at | NM_027117 | Klhdc2 | kelch domain containing 2 | 0.2926956 |
| 1448862_at | NM_010494 | Icam2 | intercellular adhesion molecule 2 | 0.2961604 |
| 1417162_at | NM_027154 | Tmbim1 | transmembrane BAX inhibitor motif containing 1 | 0.29654613 |
| 1434891_at | NM_011197 | Ptgrf | prostaglandin F2 receptor negative regulator | 0.29977408 |
| 1456063_x_at | NM_010362 | Gsto1 | glutathione S-transferase omega 1 | 0.30134553 |
| 1449078_at | NM_018784 | St3gal6 | ST3 beta-galactoside alpha-2,3-sialytransferase 6 | 0.30354866 |
| 1424374_at | NM_174990///NM_019518 | Grasp | GRP1 (general receptor for phosphoinositides 1)-assoc | 0.3055995 |
| 1442434_at | NM_172911 | D8Ertd82e | DNA segment, Chr 8, ERATO Doi 82, expressed | 0.3091867 |
| 1439516_at | NA | 2610201A13Rik | RIKEN cDNA 2610201A13 gene | 0.31156063 |
| 1459744_at | NM_007651 | Cd53 | CD53 antigen | 0.31349358 |
| 1451340_at | NM_145996 | Arid5a | AT rich interactive domain 5A (Mrf1 like) | 0.3149708 |
| 1421260_a_at | NM_009272 | Srn | spermidine synthase | 0.32002914 |
| 1448132_at | NM_031196 | Slc19a1 | solute carrier family 19 (sodium/hydrogen exchanger) | 0.32037783 |
| Gene ID   | Accession       | Description                                                                 | Score  |
|----------|-----------------|-----------------------------------------------------------------------------|--------|
| 1427891_at | NM_153175       | Gimap6 GTPase, IMAP family member 6                                         | 0.32230228 |
| 1419561_at | NM_011337       | Ccl3 chemokine (C-C motif) ligand 3                                          | 0.32332715 |
| 1430394_at | NM_019875       | Abcb9 ATP-binding cassette, sub-family B (MDR/TAP), meml                    | 0.3240712 |
| 1419480_at | NM_011346       | Sell selectin, lymphotoyce                                                    | 0.3262637 |
| 1415743_at | NM_00107769     | Hdac5 histone deacetylase 5                                                  | 0.32720202 |
| 1417888_at | NM_023233       | Trim13 tripartite motif protein 13                                           | 0.32863557 |
| 1457434_at | NM_0101239      | Ptpla protein tyrosine phosphatase-like (proline instead of )               | 0.3291084 |
| 1455033_at | XM_283903       | RIKEN cDNA B430201A12 gene                                                   | 0.33260888 |
| 1451428_at | NM_178444       | Egf17 EGF-like domain 7                                                      | 0.3332502 |
| 1436268_at | XM_00147621      | Ddn                                                                         | 0.33349887 |
| 1420994_at | NM_054052       | B3gnt5 UDP-GlcNAc:betaGal beta-1,3-N-acetylglucosaminyltr                   | 0.33413246 |
| 1448602_at | NM_011224       | Pygm muscle glycogen phosphorylase                                           | 0.33455673 |
| 1437262_at | NM_026602       | Bcas2 breast carcinoma amplified sequence 2                                  | 0.33641413 |
| 1424375_at | NM_174990       | Gimap4 GTPase, IMAP family member 4                                          | 0.33786866 |
| 1435335_at | NM_00100416     | Gnptab N-acetylg glucosamine-1-phosphate transferase, alpha                 | 0.34004062 |
| 1423357_at | NM_026010       | 2610209A20Rik RIKEN cDNA 2610209A20 gene                                    | 0.34059143 |
| 1431771_at | NM_022896       | Irak1bp1 interleukin-1 receptor-associated kinase 1 binding pr              | 0.34126452 |
| 1423948_at | NM_145392       | Bag2 Bcl2-associated athanogene 2                                           | 0.34189278 |
| 1434929_at | NA              | BC035044 cDNA sequence BC035044                                              | 0.34367198 |
| 1419410_at | NM_016767       | Batf basic leucine zipper transcription factor, ATF-like                     | 0.34393474 |
| 1424211_at | NM_027460       | Slc25a33 solute carrier family 25, member 33                                | 0.34939793 |
| 1448660_at | NM_008113       | Arhgdig Rho GDP dissociation inhibitor (GDI) gamma                           | 0.34948418 |
| 1421498_at | XR_035367       | 2010204K13Rik RIKEN cDNA 2010204K13 gene                                     | 0.3495499 |
| 1448617_at | NM_007651       | Cd53 antigen                                                                 | 0.34972775 |
| 1443007_at | NA              | Transcribed locus                                                            | 0.34987092 |
| 1433966_at | NM_012055       | Asns asparagine synthetase                                                   | 0.35023794 |
| 1424792_at | NM_145938       | Rpp40 ribonuclease P 40 subunit (human)                                      | 0.35333017 |
| 1420558_at | NM_011347       | Selp selectin, platelet                                                     | 0.35458142 |
| 1454745_at | NM_172525       | Arhgap29 Rho GTPase activating protein 29                                    | 0.3551572 |
| 1449363_at | NM_007498       | Atf3 activating transcription factor 3                                        | 0.3566264 |
| 1425850_at | NM_021606       | Nek6 NIMA (never in mitosis gene a)-related expressed kinase                | 0.35703552 |
| 1420138_at | NM_031196       | Slc19a1 solute carrier family 19 (sodium/hydrogen exchanger)               | 0.35814586 |
| 1416263_at | NM_019875       | Abcb9 ATP-binding cassette, sub-family B (MDR/TAP), meml                    | 0.359478 |
| 1453380_at | NM_026858       | Xrcc6bp1 XRCC6 binding protein 1                                              | 0.35966864 |
| Gene ID      | Entrez ID | Symbol     | Description                                                                 | log2 Fold Change |
|-------------|-----------|------------|-----------------------------------------------------------------------------|-----------------|
| 1424380_at  | NM_177876 | Vps37b     | vacuolar protein sorting 37B (yeast)                                       | 0.35986724      |
| 1460564_at  | NM_177475 | Suhw2      | suppressor of hairy wing homolog 2 (Drosophila)                            | 0.36292407      |
| 1456315_a_at| NM_00101239| Ptpla      | protein tyrosine phosphatase-like (proline instead of glutamine)            | 0.36327153      |
| 1432459_a_at| NM_021397 | Zbtb32     | zinc finger and BTB domain containing 32                                   | 0.36685723      |
| 1449235_at  | NM_010177 | Fasl       | Fas ligand (TNF superfamily, member 6)                                     | 0.36703205      |
| 1455007_s_at| NM_173866 | Gpt2       | glutamic pyruvate transaminase (alanine aminotransferase)                   | 0.36725587      |
| 1438796_at  | NM_015743 | Nr4a3      | nuclear receptor subfamily 4, group A, member 3                             | 0.36777803      |
| 1443103_at  | NM_177097 | D830046C22Rik | RIKEN cDNA D830046C22 gene                                              | 0.36922362      |
| 1434754_at  | NM_001015046 | Garnl4  | GTPase activating RANGAP domain-like 4                                      | 0.3715906       |
| 1452679_at  | NM_023716 | Tubb2b     | tubulin, beta 2b                                                           | 0.3719962       |
| 1435333_at  | NM_026742 | 1110007M04Rik | RIKEN cDNA 1110007M04 gene                                         | 0.37200823      |
| 1450521_a_at| NA        | Tcrg       | T-cell receptor gamma chain                                                 | 0.37415704      |
| 1451313_a_at| NM_173752 | 1110067D22Rik | RIKEN cDNA 1110067D22 gene                                         | 0.3765292       |
| 1440400_at  | NA        | NA         | NA                                                                         | 0.37663445      |
| 1448276_at  | NM_053082 | Tspan4     | tetraspanin 4                                                               | 0.3775067       |
| 1416126_at  | NM_009086 | Rpo1-2     | RNA polymerase 1-2                                                          | 0.38139156      |
| 1434920_a_at| NM_007965 | Evl///LOC100047333 | Ena-vasodilator stimulated phosphoprotein///similar t                    | 0.38168368      |
| 1443703_at  | NA        | NA         | Transcribed locus                                                           | 0.38224584      |
| 1438317_a_at| NM_007931 | Endog      | endonuclease G                                                              | 0.38394552      |
| 1453007_at  | NM_028469 | 3110082I17Rik | RIKEN cDNA 3110082I17 gene                                         | 0.38484696      |
| 1450106_a_at| NM_007965 | Evl///LOC100047333 | Ena-vasodilator stimulated phosphoprotein///similar t                    | 0.38487607      |
| 1439155_at  | NM_010792 | Mettl1     | methyltransferase-1                                                          | 0.38508365      |
| 1421097_at  | NM_007931 | Endog      | endonuclease G                                                              | 0.38662526      |
| 1417804_at  | NM_011242 | Rasgrp2    | RAS, guanyl releasing protein 2                                             | 0.38721102      |
| 1418074_at  | NM_011373 | St6galnac4 | ST6 (alpha-N-acetyl-neuraminy1-2,3-beta-galactosyl-alpha-N-acetylgalactosyl-| 0.38835466      |
| 1453071_s_at| NM_212445 | Kdelc2     | KDEL (Lys-Asp-Glu-Leu) containing 2                                         | 0.38929373      |
| 1456620_at  | NM_00100416| Gnptab     | N-acetylglucosamine-1-phosphate transferase, alpha                         | 0.39001647      |
| 1451095_at  | NM_012055 | Asns       | asparagine synthetase                                                       | 0.39035237      |
| 1450784_at  | NM_016678 | Reck       | reversion-inducing-cysteine-rich protein with kazal m                       | 0.39041933      |
| 1435342_at  | NM_00103352| Kcnk6      | potassium inwardly-rectifying channel, subfamily K, n                       | 0.39125583      |
| 1428719_at  | XM_913918///2010309G21Rik | RIKEN cDNA 2010309G21 gene                                         | 0.39217278      |
| 1450854_at  | NM_011119 | Pa2g4      | proliferation-associated 2G4                                                 | 0.39229593      |
| 1450731_s_at| NM_178589 | Tnfrsf21   | tumor necrosis factor receptor superfamily, member 2                        | 0.39507246      |
| 1443750_s_at| NM_145938 | Rpp40      | ribonuclease P 40 subunit (human)                                            | 0.39540693      |
| Gene ID       | Description                                      | Expression Value |
|--------------|--------------------------------------------------|------------------|
| 1421302_a_at| NM_010304 Gna15 guanine nucleotide binding protein, alpha 15 | 0.39690125       |
| 1427439_s_at| NM_013768 Prmt5 protein arginine N-methyltransferase 5   | 0.39724195       |
| 1437424_at  | NM_0108105 Syde2 synapse defective 1, Rh GTPase, homolog 2 (C. eleg) | 0.3992574        |
| 1428772_at  | NM_015770 a nonagouti                             | 0.40335003       |
| 1451199_at  | NM_029128 Qrttd1 queuine tRNA-ribozyme transferase domain containing 1 | 0.40353417 |
| 1416531_at  | NM_010362 Gsto1 glutathione S-transferase omega 1   | 0.40448216       |
| 1425016_at  | NM_015770 a nonagouti                             | 0.40466732       |
| 1427997_at  | NM_026742 1110007M04Rik RIKEN cDNA 1110007M04 gene | 0.40586463       |
| 1428652_at  | NM_027860 0610010F05Rik RIKEN cDNA 0610010F05 gene | 0.40666154       |
| 1429189_at  | NM_009712 Arsb arylsulfatase B                    | 0.4068456        |
| 1433536_at  | NM_172784 Lrp11 low density lipoprotein receptor-related protein 11 | 0.40684915 |
| 1457359_at  | NM_00102461 Inpp4b inositol polyphosphate-4-phosphatase, type II | 0.40739286 |
| 1456541_x_at| NM_179203 Atad3a ATPase family, AAA domain containing 3A | 0.40750623 |
| 1422189_x_at| NM_010792 Mettl1 methyltransferase-like 1          | 0.40779287       |
| 1447683_x_at| NM_010792 Mettl1 methyltransferase-like 1          | 0.4089053        |
| 1434316_at  | NM_00108116 Chsy1///LOC100047carbohydrate (chondroitin) synthase 1///similar to ml | 0.4091695 |
| 1426631_at  | NM_178403///LOC10004709///Pu hypotetical protein LOC10004709///pseudouridylat | 0.41013163 |
| 1429061_at  | NM_174987 1810063B05Rik RIKEN cDNA 1810063B05 gene | 0.410515        |
| 1456865_x_at| NM_021511 Rrs1 RRS1 ribosome biogenesis regulator homolog (S. cerei) | 0.4117122 |
| 1429213_at  | NM_0108549 2310030N02Rik RIKEN cDNA 2310030N02 gene | 0.41230983       |
| 1423596_at  | NM_021606 Nek6 NIMA (never in mitosis gene a)-related expressed kin | 0.41246644 |
| 1416882_at  | NM_026418 Rgs10 regulator of G-protein signalling 10 | 0.41295087       |
| 1422461_at  | NM_179203 Atad3a ATPase family, AAA domain containing 3A | 0.41302085 |
| 1451016_at  | NM_025903 Ifrd2 interferon-related developmental regulator 2 | 0.4141473 |
| 1417096_at  | NM_026041 Rrp15 ribosomal RNA processing 15 homolog (S. cerevisiae) | 0.41431275 |
| 1417147_at  | NM_019833 B230317C12Rik RIKEN cDNA B230317C12 gene | 0.41464496       |
| 1425745_a_at| NM_0100446 Tacc2 transforming, acidic coiled-coil containing protein 2 | 0.41490373 |
| 1455863_at  | XM_00147999 Spata5l1 spermatogenesis associated 5-like 1 | 0.41518107       |
| 1447703_x_at| NM_024215 Zfp593 zinc finger protein 593          | 0.41520312       |
| 1447864_s_at| NM_175170 Pogk pogo transposable element with KRAB domain | 0.41580933 |
| 1418075_at  | NM_011373 St6galnac4 ST6 (alpha-N-acetyl-neuraminyl-2,3-beta-galactosyl- | 0.4161112 |
| 1448289_at  | NM_007765 Crmp1 collapsin response mediator protein 1 | 0.41666734       |
| 1439189_at  | XM_907047 D630023B12Rik RIKEN cDNA D630023B12 gene | 0.41667524       |
| Gene Symbol       | Description                                                                 | Ratio  |
|------------------|------------------------------------------------------------------------------|--------|
| Atad3a           | ATPase family, AAA domain containing 3A                                      | 0.4167512 |
| Mina             | myc induced nuclear antigen                                                  | 0.4175852 |
| Irf8             | interferon regulatory factor 1                                               | 0.41872254 |
| Max              | similar to Myn protein - mouse                                              | 0.41944584 |
| Repin1           | replication initiator 1                                                      | 0.41975585 |
| Mtm1             | X-linked myotubular myopathy gene 1                                          | 0.4200532 |
| RIKEN cDNA 2610528E23 gene | RIKEN cDNA B430201A12 gene                                               | 0.42022008 |
| Max protein - mouse | similar to Myn protein - mouse                                              | 0.4203233 |
| Repin1           | replication initiator 1                                                      | 0.42060962 |
| Dyrk3            | dual-specificity tyrosine-(Y)-phosphorylation regulate                      | 0.42533147 |
| Hrh2             | histamine receptor H 2                                                       | 0.42535463 |
| Ppif             | peptidylprolyl isomerase F (cyclophilin F)                                  | 0.4254752 |
| Pmaip1           | phorbol-12-myristate-13-acetate-induced protein 1                           | 0.426345 |
| Lactb            | lactamase, beta                                                             | 0.4264489 |
| Dusp4            | dual specificity phosphatase 4                                               | 0.4277179 |
| Ell2             | elongation factor RNA polymerase II 2                                       | 0.42827135 |
| RIKEN cDNA 1110004E09 gene | RIKEN cDNA 1110004E09 gene                                               | 0.42846686 |
| Pa2g4            | proliferation-associated 2G4                                                 | 0.42863902 |
| Ccdc86           | coiled-coil domain containing 86                                             | 0.4286618 |
| Ptp4a3           | protein tyrosine phosphatase 4a3                                             | 0.429376 |
| Bex1             | brain expressed gene 1                                                       | 0.43018603 |
| Rasa3            | RAS p21 protein activator 3                                                  | 0.43099812 |
| Cradd            | CASP2 and RIPK1 domain containing adaptor with de                           | 0.43342242 |
| NA               | Transcribed locus                                                           | 0.43364182 |
| Pcca             | propionyl-Coenzyme A carboxylase, alpha polypeptide                          | 0.43372536 |
| Smyd5            | SET and MYND domain containing 5                                             | 0.43492377 |
| Comtd1           | catechol-O-methyltransferase domain containing 1                            | 0.43546215 |
| Irf4             | interferon regulatory factor 4                                               | 0.43562382 |
| Ccr5             | chemokine (C-C motif) receptor 5                                             | 0.4357004 |
| Nab2             | Ngfi-A binding protein 2                                                    | 0.43571335 |
| Srx5             | sorting nexin 5                                                             | 0.43605566 |
| Nebulin          | nebulin                                                                     | 0.43686682 |
| Rasgrp2          | RAS, guanyl releasing protein 2                                              | 0.4373309 |
| Nr4a1            | nuclear receptor subfamily 4, group A, member 1                              | 0.439534 |
| ID          | Description                                      | Expression Value |
|-------------|--------------------------------------------------|------------------|
| 1430423_s_at| NM_025599///2610528E23Rik///Froise FGF receptor activating protein 1///RIKEN cDNA 261C | 0.43976656       |
| 1428065_at  | NM_152808 SLC44A2 solute carrier family 44, member 2 | 0.44020766       |
| 1444484_at  | NA A130009E19 Riken cDNA A130009E19 gene          | 0.44144154       |
| 1455398_at  | NM_133897 Lrrc8c leucine rich repeat containing 8 family, member C | 0.4415194        |
| 1437813_at  | XM_131754///Aim1l absent in melanoma 1-like       | 0.4419153        |
| 1416998_at  | NM_021511 Rrs1 RRS1 ribosome biogenesis regulator homolog (S. cerevisiae) | 0.44210494       |
| 1428281_at  | NM_028115///Trub1 TruB pseudouridine (psi) synthase homolog 1 (E. coli) | 0.4426405        |
| 1437343_x_at| NM_179203 Atad3a ATPase family, AAA domain containing 3A | 0.44356886       |
| 1448452_at  | NM_008320 Irf8 interferon regulatory factor 8    | 0.44368926       |
| 1434291_a_at| NM_011353 Serf1 small EDRK-rich factor 1         | 0.44372925       |
| 1433556_at  | NM_172723 Centa1 centaurin, alpha 1             | 0.44418377       |
| 1438932_at  | NM_011242 Rasgrp2 RAS, guanyl releasing protein 2 | 0.44464627       |
| 1431939_a_at| NM_025910 Mina myc induced nuclear antigen       | 0.4468234        |
| 1441501_at  | NM_025814 Serbp1 Serpine1 mRNA binding protein 1 | 0.44711116       |
| 1454197_a_at| NM_023731 Ccdc86 coiled-coil domain containing 86 | 0.4471859        |
| 1420023_at  | NM_144866 Etf1 eukaryotic translation termination factor 1 | 0.44762826       |
| 1435020_at  | NM_025441 Sdccag1 serologically defined colon cancer antigen 1 | 0.44788066       |
| 1415773_at  | NM_010880 Ncl nucleolin                          | 0.4479605        |
| 1424191_a_at| NM_025693 Tmem41a transmembrane protein 41a      | 0.44957966       |
| 1449109_at  | NM_007706 Socs2 suppressor of cytokine signaling 2 | 0.45127884       |
| AFFX-TransRecNM_011638_Tfrc | transferrin receptor                            | 0.45245203       |
| 1450860_at  | NM_024434 Lap3 leucine aminopeptidase 3          | 0.45311975       |
| 1418349_at  | NM_010415 Hbegf heparin-binding EGF-like growth factor | 0.45338413       |
| 1417100_at  | NM_019421 Cd320 CD320 antigen                    | 0.4553887        |
| 1424620_at  | NM_178605 D13WsU177e DNA segment, Chr 13, Wayne State University 177, e | 0.45567223       |
| 1441911_x_at| NM_010256 Gart phosphoribosylglycinamidase formyltransferase | 0.45588526       |
| 1448910_at  | NM_023523 Pecr peroxisomal trans-2-enoyl-CoA reductase | 0.4561701        |
| 1452658_at  | NM_178610 Krr1 KRR1, small subunit (SSU) processome component, h | 0.4565985        |
| 1423595_at  | NM_025910 Mina myc induced nuclear antigen       | 0.4568204        |
| 1451555_at  | NM_029447 Nin neurolysin (metallopeptidase M3 family) | 0.45687032       |
| 1428141_at  | NM_028758 Gga2 golgi associated, gamma adaptin ear containing, ARF | 0.45700544       |
| 1423142_a_at| NM_027000 Gtbp4 GTP binding protein 4            | 0.45770234       |
| 1415733_a_at| NM_0010967 1110019J04Rik Riken cDNA 1110019J04 gene | 0.45970404       |
| 1455287_at  | NM_009873 Cdk6 cyclin-dependent kinase 6         | 0.45974666       |
| Entrez Gene ID | Accession | Description                                                                 | Benishita Score |
|---------------|-----------|------------------------------------------------------------------------------|-----------------|
| 1423614       | NM_133897 | Lrrc8c leucine rich repeat containing 8 family, member C                     | 0.4601077       |
| 1434266       | NM_177869 | AI847670 expressed sequence AI847670                                       | 0.46027493      |
| 1418507_s     | NM_007706 | Socs2 suppressor of cytokine signaling 2                                     | 0.46098676      |
| 1450735       | NM_025443 | Pno1 partner of NOB1 homolog (S. cerevisiae)                                 | 0.46260214      |
| 1434570       | NM_199028 | AK122525 cDNA sequence AK122525                                             | 0.4626943        |
| 1422812       | NM_030712 | Cxcr6 chemokine (C-X-C motif) receptor 6                                     | 0.46274906      |
| 1419226       | NM_032465 | Cd96 CD96 antigen                                                            | 0.4629367       |
| 1441682_s     | NM_00108105 | Xpot exportin, tRNA (nuclear export receptor for tRNAs)                      | 0.4632485       |
| 1433751       | NM_172653 | Slc39a10 solute carrier family 39 (zinc transporter), member 1              | 0.46382317      |
| 1438292_x     | NM_134079 | Adk adenosine kinase                                                          | 0.463875        |
| 1433739       | NM_00100842 | Nol10 nucleolar protein 10                                                    | 0.46402964      |
| 1456057_x     | NM_134142 | Tmem109 transmembrane protein 109                                            | 0.46566957      |
| 1424942_a     | NM_010415 | Hbegf heparin-binding EGF-like growth factor                                 | 0.46566957      |
| 141725        | NM_016661 | Ahcy S-adenosylhomocysteine hydrolase                                         | 0.4660534       |
| 1423358       | NM_025462 | Ece2 endothelin converting enzyme 2                                           | 0.46774566      |
| 1420113_s     | NM_025556 | 2410022L05Rik RIKEN cDNA 2410022L05 gene                                     | 0.46853638      |
| 1449623       | NM_153162 | Txnr3 thioredoxin reductase 3                                                | 0.46866506      |
| 1417267_s     | NM_024169 | Fkbp11 FK506 binding protein 11                                              | 0.4700365       |
| 1455084_x     | NM_028230 | Shmt2 serine hydroxymethyltransferase 2 (mitochondrial)                      | 0.47060043      |
| 1428735       | NM_00103312 | Cd69 CD69 antigen                                                              | 0.47089916      |
| 1417499       | NM_013899 | Timm10 translocase of inner mitochondrial membrane 10 hom                     | 0.4711349       |
| 1448297_a     | NM_016788 | Tnk2 tyrosine kinase, non-receptor, 2                                        | 0.47129667      |
| 1418350       | NM_010415 | Hbegf heparin-binding EGF-like growth factor                                 | 0.47170037      |
| 1456603      | XM_893392 | 1500005K14Rik RIKEN cDNA 1500005K14 gene                                      | 0.4721142       |
| 1441945_s     | NM_145919 | Abhd14a abhydrolase domain containing 14A                                    | 0.47297058      |
| 1416319      | NM_134079 | Adk adenosine kinase                                                          | 0.47310886      |
| 1417597      | NM_007642 | Cd28/LOC1000488 CD28 antigen//similar to CD28 antigen                         | 0.4733355       |
| 1449886_a     | NM_00102485 | Timm9 translocase of inner mitochondrial membrane 9 hom                     | 0.47526643      |
| 1416346_at    | NM_013898 | LOC10003934///LOC10003934///LOC10003934///LOC10003934///LOC10003934///LOC   | 0.47542313      |
| 1428333       | NR_003642 | 2900062L11Rik RIKEN cDNA 2900062L11 gene                                      | 0.47557703      |
| 1422198_a     | NM_009171 | Shmt1 serine hydroxymethyltransferase 1 (soluble)                            | 0.47615314      |
| 1450330       | NM_010548 | Il10 interleukin 10                                                           | 0.47696832      |
| 1438992_x     | NM_009716 | Atf4 activating transcription factor 4                                         | 0.47776875      |
| 1416939       | NM_026438 | Ppa1 pyrophosphatase (inorganic) 1                                            | 0.47778532      |
| Gene ID | Gene ID Info | Gene Name | Expression Value |
|--------|--------------|-----------|-----------------|
| 1434280_at | NA | NA | NA | 0.47779688 |
| 1438559_x_at | NM_152808 Slc4a2 | Solute carrier family 44, member 2 | 0.47882506 |
| 1451040_at | NM_025314///Dtd1///LOC1000486| D-tyrosyl-tRNA deacylase 1 homolog (S. cerevisiae)/ | 0.47959524 |
| 1455841_s_at | NM_153419 Grwd1 | Glutamate-rich WD repeat containing 1 | 0.47974563 |
| 1449019_at | NM_025454 Akap1 | A kinase (PRKA) anchor protein 1 | 0.48090878 |
| 1432340_at | NM_016776 Mybbp1a | MYB binding protein (P160) 1a | 0.48125765 |
| 1428274_at | NM_007573 C1qbp | Complement component 1, q subcomponent binding | 0.4816255 |
| 1422477_at | NM_02201 | Cables1 | Cdk5 and Abl enzyme substrate 1 | 0.48204002 |
| 1417611_at | NM_019432 Tmem37 | Transmembrane protein 37 | 0.48214638 |
| 1428389_s_at | NM_00100509 Wdr43 | WD repeat domain 43 | 0.48257792 |
| 1423289_a_at | NM_025465 1810029B16Rik | RIKEN cDNA 1810029B16 gene | 0.48305342 |
| 1456597_at | NM_172757 Heatr3 | HEAT repeat containing 3 | 0.48338664 |
| 1450087_a_at | NM_001039351///NM_001039352///NM_001039353///NM_053086 Nolc1 | Nucleolar and coiled-body phosphoprotein 1 | 0.48383881 |
| 1435245_at | NM_001033262 Gls2 | Glutaminase 2 (liver, mitochondrial) | 0.4843717 |
| 1441788_s_at | NM_00103030 Dkc1 | Dyskeratosis congenita 1, dyskerin homolog (human) | 0.4849747 |
| 1439864_at | NM_175430 Ccdc40 | Coiled-coil domain containing 40 | 0.4851565 |
| 1421534_at | NM_018769 Dfna5h | Deafness, autosomal dominant 5 homolog (human) | 0.48562342 |
| 1440195_at | NM_025814 Serp1 | Serpine1 mRNA binding protein 1 | 0.48569715 |
| 1432249_a_at | NM_028042 Ercc8 | Excision repaircross-complementing rodent repair defic | 0.48580056 |
| 1434427_at | NM_00100357 Rnf157 | Ring finger protein 157 | 0.48654234 |
| 1432757_x_at | NM_010517 Igfbp4 | Insulin-like growth factor binding protein 4 | 0.4870935 |
| 1448355_at | NM_019429 Prss16 | Protease, serine, 16 (thymus) | 0.48713535 |
| 1435303_at | XM_128905///Taf4b | TAF4B RNA polymerase II, TATA box binding protein ( | 0.4873154 |
| 1418495_at | NM_020594 Zc3h8 | Zinc finger CCCH type containing 8 | 0.48767132 |
| 1426351_at | NM_010477 Hspd1 | Heat shock protein 1 (chaperonin) | 0.48861647 |
| 1429261_at | NM_029384 2210411K11Rik | RIKEN cDNA 2210411K11 gene | 0.48878816 |
| 1428106_at | NM_00108115 1300001I01Rik | RIKEN cDNA 1300001I01 gene | 0.4892358 |
| 1455927_x_at | NM_026330 Nsmce1 | Non-SMC element 1 homolog (S. cerevisiae) | 0.48937872 |
| 1450668_s_at | NM_008300 Hspe1 | Heat shock protein 1 (chaperonin 10) | 0.48992136 |
| 1444283_at | NM_146167 Gimap7 | GTPase, IMAP family member 7 | 0.48996645 |
| 1416606_s_at | NM_026631 Nola2 | Nucleolar protein family A, member 2 | 0.49022964 |
| 1430300_at | NM_00104002 Sco1 | SCO cytochrome oxidase deficient homolog 1 (yeast) | 0.4903579 |
| 1421291_at | NM_010553 Il18rap | Interleukin 18 receptor accessory protein | 0.4907273 |
| 1428114_at | NM_028122 Slc14a1 | Solute carrier family 14 (urea transporter), member 1 | 0.49131554 |
| Gene Symbol | Entrez ID | Description                                                                 | Score |
|-------------|-----------|-------------------------------------------------------------------------------|-------|
| Chchd4      | 1417233   | coiled-coil-helix-coiled-coil-helix domain containing 4                       | 0.4913804 |
| Rom1        | 1448996   | rod outer segment membrane protein 1                                          | 0.49155936 |
| Cd2         | 1418770   | CD2 antigen                                                                   | 0.49180478 |
| Mthfd1      | 1436704   | methylenetetrahydrofolate dehydrogenase (NADP+ dependent)                     | 0.49200022 |
| Mfsd2       | 1428223   | major facilitator superfamily domain containing 2                             | 0.49244362 |
| Hod         | 1451776   | homeobox only domain                                                          | 0.4927195 |
| Rom1        | 1435013   | rod outer segment membrane protein 1                                          | 0.4929874 |
| Mthfd1      | 1436704   | methylenetetrahydrofolate dehydrogenase (NADP+ dependent)                     | 0.49300022 |
| Mfsd2       | 1428223   | major facilitator superfamily domain containing 2                             | 0.49344362 |
| Hod         | 1439408   | homeobox only domain                                                          | 0.4937195 |
| Rom1        | 1441272   | rod outer segment membrane protein 1                                          | 0.4939874 |
| Mthfd1      | 1434301   | methylenetetrahydrofolate dehydrogenase (NADP+ dependent)                     | 0.49430022 |
| Mfsd2       | 1441272   | major facilitator superfamily domain containing 2                             | 0.4947195 |
| Hod         | 1434400   | homeobox only domain                                                          | 0.4950195 |
| Rom1        | 1441272   | rod outer segment membrane protein 1                                          | 0.4952195 |
| Mthfd1      | 1441272   | methylenetetrahydrofolate dehydrogenase (NADP+ dependent)                     | 0.4954195 |
| Mfsd2       | 1441272   | major facilitator superfamily domain containing 2                             | 0.4956195 |
| Hod         | 1436121   | homeobox only domain                                                          | 0.4960195 |
| Rom1        | 1441272   | rod outer segment membrane protein 1                                          | 0.4962195 |
| Mthfd1      | 1441272   | methylenetetrahydrofolate dehydrogenase (NADP+ dependent)                     | 0.4964195 |
| Mfsd2       | 1441272   | major facilitator superfamily domain containing 2                             | 0.4966195 |
| Hod         | 1436121   | homeobox only domain                                                          | 0.4968195 |
| Rom1        | 1441272   | rod outer segment membrane protein 1                                          | 0.4970195 |
| Mthfd1      | 1441272   | methylenetetrahydrofolate dehydrogenase (NADP+ dependent)                     | 0.4972195 |
| Mfsd2       | 1441272   | major facilitator superfamily domain containing 2                             | 0.4974195 |
| Hod         | 1436121   | homeobox only domain                                                          | 0.4976195 |
| Rom1        | 1441272   | rod outer segment membrane protein 1                                          | 0.4978195 |
| Mthfd1      | 1441272   | methylenetetrahydrofolate dehydrogenase (NADP+ dependent)                     | 0.4980195 |
| Mfsd2       | 1441272   | major facilitator superfamily domain containing 2                             | 0.4982195 |
| Hod         | 1436121   | homeobox only domain                                                          | 0.4984195 |
| Rom1        | 1441272   | rod outer segment membrane protein 1                                          | 0.4986195 |
| Mthfd1      | 1441272   | methylenetetrahydrofolate dehydrogenase (NADP+ dependent)                     | 0.4988195 |
| Mfsd2       | 1441272   | major facilitator superfamily domain containing 2                             | 0.4990195 |
| Hod         | 1436121   | homeobox only domain                                                          | 0.4992195 |
| Rom1        | 1441272   | rod outer segment membrane protein 1                                          | 0.4994195 |
| Mthfd1      | 1441272   | methylenetetrahydrofolate dehydrogenase (NADP+ dependent)                     | 0.4996195 |
| Mfsd2       | 1441272   | major facilitator superfamily domain containing 2                             | 0.4998195 |
| Hod         | 1436121   | homeobox only domain                                                          | 0.5000195 |
| Gene ID       | Description                                                                 | Log2 Ratio |
|--------------|------------------------------------------------------------------------------|------------|
| 1458665_at   | Chloride intracellular channel 1                                             | 2.004389   |
| 1431063_at   | Calpain 3/glucosidase, alpha; neutral C                                      | 2.004641   |
| 1431063_at   | Calpain 3/glucosidase, alpha; neutral C                                      | 2.004641   |
| 1416401_at   | Cd82                                                                         | 2.004823   |
| 1428383_a_at | RIKEN cDNA 2310021P13 gene                                                   | 2.005641   |
| 1459131_a_at | Tap2, transporter 2, ATP-binding cassette, sub-family B (M)                  | 2.005701   |
| 1419222_at   | Tbxa2r                                                                       | 2.005862   |
| 1452969_at   | Atp2b1                                                                       | 2.005898   |
| 1452625_at   | Kctd2, potassium channel tetramerisation domain containing                   | 2.006898   |
| 1418411_at   | Fbxl8                                                                        | 2.0075116  |
| 1423905_at   | Pvr, poliovirus receptor                                                     | 2.0079648  |
| 1436872_at   | Tacc3, transforming, acidic coiled-coil containing protein 3                 | 2.0087252  |
| 1440811_x_at | Cd8a                                                                         | 2.0092356  |
| 1426701_at   | 4632419K20Rik, RIKEN cDNA 4632419K20 gene                                    | 2.0096757  |
| 1451264_at   | Frmd6, FERM domain containing 6                                              | 2.0100675  |
| 1454775_at   | Hdac10, histone deacetylase 10                                               | 2.0103376  |
| 1422788_at   | Slc43a3, solute carrier family 43, member 3                                  | 2.0103438  |
| 1415788_at   | Ublcp1, ubiquitin-like domain containing CTD phosphatase 1                   | 2.0109458  |
| 1457746_at   | Na, Adult male thymus cDNA, RIKEN full-length enriched                       | 2.0111992  |
| 1417073_a_at | Qk, quaking                                                                  | 2.0113504  |
| 1438847_at   | Mdx3                                                                         | 2.0115986  |
| 1449049_at   | Tlr1, toll-like receptor 1                                                   | 2.012945   |
| 1438052_at   | A130071D04Rik, RIKEN cDNA A130071D04 gene                                   | 2.013227   |
| 145551_at    | Uevld, UEV and lactate/malate dehyrogenase domains                           | 2.0138443  |
| 1451109_a_at | Ned4, neural precursor cell expressed, developmentally downregulated        | 2.0139778  |
| 1434045_at   | Cdkn1b, cyclin-dependent kinase inhibitor 1B                                  | 2.014046   |
| 1456243_x_at | Mcl1, myeloid cell leukemia sequence 1                                      | 2.014448   |
| 1418355_at   | Nucb2, nucleobindin 2                                                        | 2.0154672  |
| 1449588_at   | Cd86, CD86 antigen                                                           | 2.0162628  |
| 1444459_at   | NA, Adult male urinary bladder cDNA, RIKEN full-length enriched              | 2.0167813  |
| 1435757_x_at | Mcl1, myeloid cell leukemia sequence 1                                       | 2.0168364  |
| 1450699_at   | LOC100044204///Sel, hypothetical protein LOC100044204///selenium binding    | 2.017781   |
| 1423068_at   | Ift172, intraflagellar transport 172 homolog (Chlamydomona)                 | 2.0178323  |
| 1423068_at   | Ift172, intraflagellar transport 172 homolog (Chlamydomona)                 | 2.0178323  |
| Gene ID | Description | Expression |
|--------|-------------|------------|
| 1421129_a_at | ATPase, Ca++ transporting, ubiquitous | 2.0179908 |
| 1445395_at | Activated spleen cDNA, RIKEN full-length enriched lib | 2.0187566 |
| 1445395_at | Activated spleen cDNA, RIKEN full-length enriched lib | 2.0187566 |
| 1441769_at | NA | 2.01915 |
| 1441769_at | NA | 2.01915 |
| 1438535_at | Phip pleckstrin homology domain interacting protein | 2.020132 |
| 1418631_at | LOC100039133///LOI similar to Ubiquitin-conjugating enzyme UbcH2///ubic | 2.0233946 |
| 1455803_at | Slco4a1 | 2.0236137 |
| 1416937_at | Gabarap | 2.0243664 |
| 1449501_a_at | Phip pleckstrin homology domain interacting protein | 2.0245302 |
| 1451564_at | Parp14 | 2.0246809 |
| 1433558_at | Dab2ip | 2.0247592 |
| 1433558_at | Dab2ip | 2.0255928 |
| 1434206_s_at | Ppp2r5c | 2.025842 |
| 145609_at | Cit | 2.0264697 |
| 1419823_s_at | Ksr1 | 2.0283148 |
| 1443673_x_at | NA | 2.0294049 |
| 1451738_at | Ogt | 2.0294473 |
| 1460603_at | Samd9l | 2.0294938 |
| 1422807_at | Arf5///LOC10004695 | 2.0295782 |
| 1456296_at | 5830418KO8Kik | 2.0298076 |
| 1444029_at | Parp11 | 2.0299509 |
| 1444029_at | Parp11 | 2.0299509 |
| 1438864_at | NA | 2.029985 |
| 1418164_at | Stx2 | 2.030021 |
| 1416309_at | Nusap1 | 2.032077 |
| 1424090_at | Sdcbp2 | 2.0325089 |
| 1424090_at | Sdcbp2 | 2.0325089 |
| 1426126_a_at | U2 small nuclear RNA auxiliary factor 1-like 4///trans | 2.0332232 |
| 1433939_at | AF4///LOC638024 | 2.0340097 |
| 1425673_at | Lpp | 2.0340707 |
| Gene ID       | Description                                                                 | Log2 Fold Change |
|--------------|------------------------------------------------------------------------------|-----------------|
| 1425673_at   | Lpp                                                                           | 2.0340707       |
| 1450140_a_at | NM_00104065 Cdkn2a                                                           | 2.0358021       |
| 1449265_at   | Casp1///LOC100044: caspase 1///hypothetical protein LOC100044207               | 2.0360072       |
| 1436614_at   | AI843639 expressed sequence AI843639                                         | 2.03671         |
| 1452214_at   | Skil                                                                          | 2.0372128       |
| 1452359_at   | RELT-like                                                                     | 2.037445        |
| 1424936_a_at | Dnahc8                                                                        | 2.0375957       |
| 1449130_at   | Cd1d1                                                                         | 2.037609        |
| 1438475_at   | AB124611                                                                      | 2.0376794       |
| 1418042_a_at | Abcc5                                                                         | 2.0393822       |
| 1417108_at   | Klc4                                                                          | 2.0398748       |
| 1439283_at   | Osbp9                                                                         | 2.0400438       |
| 1436572_at   | Ccdc45                                                                        | 2.040661        |
| 1442992_at   | LOC403343                                                                     | 2.0413337       |
| 1434762_at   | Tmem142b                                                                       | 2.0418751       |
| 1425484_at   | LOC100044: similar to thymus high mobility group box protein TO:               | 2.043049        |
| 1451566_at   | Zfp810                                                                         | 2.0432675       |
| 1452125_at   | Thrap3                                                                        | 2.0441115       |
| 1452166_a_at | Krt10                                                                         | 2.0443143       |
| 1439696_at   | Nr2c2                                                                          | 2.044717        |
| 1439696_a_at | Nr2c2                                                                          | 2.044717        |
| 1423871_at   | Tmem63a                                                                        | 2.0448864       |
| 1423871_at   | Tmem63a                                                                        | 2.0448864       |
| 1459973_x_at | Dpp4                                                                           | 2.045714        |
| 1447363_s_at | Bub1b                                                                          | 2.0463169       |
| 1435176_a_at | Id2                                                                            | 2.0469072       |
| 1449068_at   | Zfp148                                                                         | 2.04813         |
| 1426856_at   | Hsdl2                                                                         | 2.0482621       |
| 1438397_a_at | Rbm39                                                                          | 2.0489225       |
| 1434790_a_at | LOC100048: similar to Lta4h protein                                            | 2.049053        |
| 1443942_at   | Gabpb2                                                                         | 2.049798        |
| 1431032_a_at | Agl                                                                            | 2.0498936       |
| 1417580_s_at | LOC100044: selenium binding protein                                             | 2.0514922       |
| Probe ID       | Description                                               | Value   |
|---------------|-----------------------------------------------------------|---------|
| 1450484_a_at  | Tyki thymidylate kinase family LPS-inducible member       | 2.0515175 |
| 1438423_at    | Ssbp2 single-stranded DNA binding protein 2               | 2.0522842 |
| 1448960_at    | Cxxc5 CXXC finger 5                                       | 2.0524359 |
| 1452717_at    | Slc25a24 solute carrier family 25 (mitochondrial carrier, phosph) | 2.0534122 |
| 1436240_at    | Sost sclerostin                                          | 2.0539615 |
| 1435938_at    | Ckap2l cytoskeleton associated protein 2-like             | 2.054369  |
| 1437282_at    | NA                                                        | 2.0544536 |
| 1435840_x_at  | similar to 2-cell-stage, variable group, member 3         | 2.055184  |
| 1432007_s_at  | Adaptor protein complex AP-2, alpha 2 subunit             | 2.0557344 |
| 1446474_at    | NA                                                        | 2.058076  |
| 1446474_at    | NA                                                        | 2.058076  |
| 1424607_a_at  | cDNA sequence BC003993///LOC100                           | 2.058583  |
| 1455014_at    | AV009015 expressed sequence AV009015                     | 2.058706  |
| 1456423_at    | Mbd5 methyl-CpG binding domain protein 5                  | 2.0587854 |
| 1418014_a_at  | B4galt1 UDP-Gal:betaGlcNAc beta 1,4-galactosyltransferase, | 2.059602  |
| 1430538_at    | XMD 2210013021Rik RIKEN cDNA 2210013021 gene              | 2.060153  |
| 1416593_at    | Glrx glutaredoxin                                         | 2.060354  |
| 1442454_at    | Top2a topoiosomerase (DNA) II alpha                       | 2.0619054 |
| 1419310_s_at  | Rfxank regulatory factor X-associated ankyrin-containing pro | 2.0635266 |
| 1427689_a_at  | Tnip1 TNFAIP3 interacting protein 1                        | 2.0646267 |
| 1425684_at    | RIKEN cDNA 2310005E10 gene                                | 2.0650237 |
| 1424060_at    | Neil3 nei like 3 (E. coli)                                | 2.065175  |
| 1441660_at    | Actr2 ARP2 actin-related protein 2 homolog (yeast)        | 2.0654683 |
| 1455827_at    | Mbnl2 muscleblind-like 2                                  | 2.068335  |
| 1433466_at    | AI467606 expressed sequence AI467606                     | 2.0684545 |
| 1435564_at    | C230078M08Rik RIKEN cDNA C230078M08 gene                  | 2.0695739 |
| 1417535_at    | Fboxo25 F-box protein 25                                  | 2.0712724 |
| 1455483_at    | Zfp148 zinc finger protein 148                             | 2.0716996 |
| 1430702_at    | 5830427D03Rik RIKEN cDNA 5830427D03 gene                  | 2.073541  |
| 1434426_at    | Ncapd3 non-SMC condensin II complex, subunit D3            | 2.074154  |
| ID          | Entrez Gene | Name                                      | Fold Change |
|-------------|-------------|-------------------------------------------|-------------|
| 1426951_at  | NM_015800   | Crim1, Cysteine rich transmembrane BMP regulator 1 (chordin) | 2.0750563   |
| 1419165_at  | NM_011981   | Zfp260, Zinc finger protein 260            | 2.0751672   |
| 1448694_at  | NM_010591   | Jun, Jun oncogene                          | 2.0755999   |
| 1435143_at  | NA          | Transcribed locus                          | 2.0756924   |
| 1440403_at  | NM_008488   | Arhgef1, Rho guanine nucleotide exchange factor (GEF) 1 | 2.076208    |
| 1442745_x_at| NM_133242   | Rbm39, RNA binding motif protein 39       | 2.0763538   |
| 1416013_at  | NM_011116   | Pld3, Phospholipase D family, member 3    | 2.0770934   |
| 1417516_at  | NM_007837   | Ddit3, DNA-damage inducible transcript 3  | 2.0782337   |
| 1451075_s_at| NM_146012   | Ctdsp2, CTD (carboxy-terminal domain, RNA polymerase II, ξ) | 2.0806856   |
| 1420654_a_at| NM_028803   | Gbe1, Glucan (1,4-alpha-), branching enzyme 1 | 2.0809119   |
| 1420919_at  | NM_00103775 | Sgk3, Serum/glucocorticoid regulated kinase 3 | 2.0813065   |
| 1430357_at  | H3f3b       | H3 histone, family 3B                      | 2.0813482   |
| 1430357_at  | H3f3b       | H3 histone, family 3B                      | 2.0813482   |
| 1451611_at  | NM_139269   | Hrasls3, HRAS like suppressor 3            | 2.0820653   |
| 1432235_at  | NM_029495   | Epst1, Epithelial stromal interaction 1 (breast) | 2.085082    |
| 1440854_at  | NM_028814   | 2810403A07Rik, RIKEN cDNA 2810403A07 gene  | 2.0857096   |
| 1459919_a_at| NM_175308   | Mobkl2c, MOB1, Mps One Binder kinase activator-like 2C (yeast) | 2.0875614   |
| 1459961_a_at| NM_011486///Stat3 | Signal transducer and activator of transcription 3 | 2.0875998   |
| 1433832_at  | NM_194342   | Unc84b, unc-84 homolog B (C. elegans)     | 2.0884395   |
| 1460178_at  | NM_025827   | Lonp2, Ion peptidase 2, peroxisomal        | 2.0892975   |
| 1417822_at  | NM_033075   | D17H6S56E-5, DNA segment, Chr 17, human D6S56E 5 | 2.0898664   |
| 1418252_at  | NM_008812///Padi2 | Peptidyl arginine deiminase, type II///similar to pepti | 2.0900662   |
| 1451435_at  | NM_009986///Cutl1 | cut-like 1 (Drosophila)                 | 2.090465    |
| 1427691_a_at| NM_010509   | Iftn2, Interferon (alpha and beta) receptor 2 | 2.0915966   |
| 1419042_at  | NM_021792   | Iggp1, Interferon inducible GTPase 1      | 2.0918093   |
| 1428660_s_at| NM_023141///LOC100047963///Tor | Similar to ADIR1///torsin family 3, member A | 2.092447    |
| 1417961_a_at| NM_009099   | Trim30, Tripartite motif protein 30        | 2.0925348   |
| 1418359_at  | NM_024479   | Wbscr27, Williams Beuren syndrome chromosome region 27 (h) | 2.0927641   |
| 1418359_at  | NM_024479   | Wbscr27, Williams Beuren syndrome chromosome region 27 (h) | 2.0927641   |
| 1440078_at  | NA          | NA                                        | 2.0933223   |
| 1440078_at  | NA          | NA                                        | 2.0933223   |
| 1449207_a_at| NM_009004   | Kif20a, Kinesin family member 20A          | 2.093345    |
| 1456420_at  | NM_00108119 | Arid4a, AT rich interactive domain 4A (Rbp1 like) | 2.0948281   |
| Entrez ID | Description                                                                 | Log2 Fold Change |
|-----------|------------------------------------------------------------------------------|-----------------|
| 1435059   | similar to Development and differentiation enhancing                           | 2.0955925       |
| 1445597   | HRAS like suppressor 3                                                        | 2.0964541       |
| 1447803   | Capping protein (actin filament), gelsolin-like                              | 2.0972273       |
| 1429478   | RIKEN cDNA 6720463M24 gene                                                    | 2.0987842       |
| 1428122   | RIKEN cDNA 2610528K11 gene///similar to RIKEN cC                              | 2.0994694       |
| 1416897   | poly (ADP-ribose) polymerase family, member 9                                | 2.1005702       |
| 1437660   | natural killer tumor recognition sequence                                      | 2.1020422       |
| 1417999   | integral membrane protein 2B                                                 | 2.1023388       |
| 1450431   | neural precursor cell expressed, developmentally down                         | 2.104118        |
| 1426597   | expressed sequence C9267                                                     | 2.1041615       |
| 1435744   | RIKEN cDNA 6720401G13 gene                                                    | 2.1051733       |
| 1435744   | RIKEN cDNA 6720401G13 gene                                                    | 2.1051733       |
| 1454766   | antagonist of mitotic exit network 1 homolog (S. cerevisiae)                  | 2.1052985       |
| 1428340   | ATPase type 13A2                                                             | 2.1056654       |
| 1429526   | bromodomain containing 8                                                     | 2.1062834       |
| 1416195   | putative phosphatase                                                         | 2.1066434       |
| 1428325   | RIKEN cDNA 2610019P18 gene                                                    | 2.1074796       |
| 1434930   | two pore channel 1                                                           | 2.1076035       |
| 1435454   | cDNA sequence BC006779                                                       | 2.108044        |
| 1441058   | inositol 1,4,5-trisphosphate 3-kinase B                                      | 2.1086342       |
| 1441058   | inositol 1,4,5-trisphosphate 3-kinase B                                      | 2.1086342       |
| 1457842   | NA                                                                           | 2.108846        |
| 1417748   | forkhead box M1                                                              | 2.1090512       |
| 1435531   | ubiquitin specific peptidase 3                                               | 2.1091259       |
| 1420611   | protein kinase, cAMP dependent, catalytic, beta                              | 2.1098382       |
| 1422632   | cathepsin W                                                                  | 2.109844        |
| 1417821   | DNA segment, Chr 17, human D6S56E 5                                          | 2.1102757       |
| 1460745   | RIKEN cDNA A630098A13 gene                                                    | 2.1106129       |
| 1428596   | TBC1 domain family, member 9                                                 | 2.1113734       |
| 1441068   | RIKEN cDNA A130001G05G05                                                     | 2.1122508       |
| 1441068   | RIKEN cDNA A130001G05G05                                                     | 2.1122508       |
| 1448797   | ELK3, member of ETS oncogene family                                          | 2.1125362       |
| 1434581   | RIKEN cDNA 2410066E13 gene                                                    | 2.112606        |
| 1434581   | RIKEN cDNA 2410066E13 gene                                                    | 2.112606        |
| ID     | Symbol     | Description                                                                 | Ratio |
|--------|------------|-----------------------------------------------------------------------------|-------|
| 1418392_a_at | Gbp3       | guanylate nucleotide binding protein 3                                     | 2.1137722 |
| 1437494_at  | Mapkap3    | mitogen-activated protein kinase-activated protein kinase                    | 2.1144178 |
| 1418893_at  | Pbx2       | pre B-cell leukemia transcription factor                                     | 2.1151755 |
| 1450244_a_at | Mapk4k2    | mitogen activated protein kinase kinase kinase kinase                        | 2.1152096 |
| 1429006_s_at | 2610110G12Rik | RIKEN cDNA 2610110G12 gene                                                   | 2.115591 |
| 1429006_s_at | 2610110G12Rik | RIKEN cDNA 2610110G12 gene                                                   | 2.115591 |
| 1442027_at  | Nbeal1     | neurobeachin like 1                                                         | 2.1160798 |
| 1422601_at  | Serpinb9   | serine (or cysteine) peptidase inhibitor, clade B, mem                      | 2.1163013 |
| 1455771_at  | Bzrap1     | benzodiazapine receptor associated protein 1                                 | 2.1170206 |
| 1418346_at  | Insl6      | insulin-like 6                                                              | 2.1171465 |
| 1435288_at  | Coro1a     | coronin, actin binding protein 1A                                             | 2.1184707 |
| 1425344_at  | Narf       | nuclear prelamin A recognition factor                                        | 2.1191232 |
| 1426708_at  | Antxr2     | anthrax toxin receptor 2                                                     | 2.1191232 |
| 1453457_at  | B830007D08Rik | RIKEN cDNA B830007D08 gene                                                  | 2.1245875 |
| 1438895_at  | A430102J17Rik | RIKEN cDNA A430102J17 gene                                                  | 2.1212184 |
| 1430309_at  | Nipbl      | Nipped-B homolog (Drosophila)                                                | 2.1228576 |
| 1423890_x_at | Atp1b1     | ATPase, Na+/K+ transporting, beta 1 polypeptide                              | 2.1228874 |
| 1447348_at  | NA         | NA                                                                          | 2.1234374 |
| 1447348_at  | NA         | NA                                                                          | 2.1234374 |
| 1440781_at  | B830007D08Rik | RIKEN cDNA B830007D08 gene                                                  | 2.1245875 |
| 1449131_s_at | Cd1d1      | CD1d1 antigen                                                               | 2.1260135 |
| 1457788_at  | Rassf1     | Ras association (RalGDS/AF-6) domain family 1                               | 2.1263099 |
| 1457788_at  | Rassf1     | Ras association (RalGDS/AF-6) domain family 1                               | 2.1263099 |
| 1454728_s_at | Atp8a1     | ATPase, aminophospholipid transporter (APLT), class                         | 2.1266413 |
| 1459823_at  | Ehd2       | EH-domain containing 2                                                      | 2.129143 |
| 1459823_at  | Ehd2       | EH-domain containing 2                                                      | 2.129143 |
| 1450337_a_at | Nek8       | NIMA (never in mitosis gene a)-related expressed kin                        | 2.1292653 |
| 1426750_at  | Flnb       | filamin, beta                                                              | 2.1296558 |
| 1423103_at  | Rfx5       | regulatory factor X, 5 (influences HLA class II expres:                     | 2.1298685 |
| 1454733_at  | Nod1       | nucleotide-binding oligomerization domain containing                        | 2.130261 |
| 1454733_at  | Nod1       | nucleotide-binding oligomerization domain containing                        | 2.130261 |
| 1417749_a_at | Tjp1       | tight junction protein 1                                                    | 2.1316042 |
| 1417749_a_at | Tjp1       | tight junction protein 1                                                    | 2.1316042 |
| 1446280_at  | NA         | NA                                                                          | 2.1332178 |
| Accession | Gene symbol | Description | Log2 Ratio |
|-----------|-------------|-------------|------------|
| 1446280_at | NA | NA | 2.1332178 |
| 1460419_a_at | Prkcb1 | protein kinase C, beta 1 | 2.1337798 |
| 1447408_at | NA | NA | 2.134196 |
| 1440130_at | NA | Transcribed locus | 2.1342242 |
| 1449874_at | Ly96 | lymphocyte antigen 96 | 2.1356325 |
| 1456136_at | Kifc1 | Kinesin family member C1 | 2.1365418 |
| 1418832_at | Pkp3 | plakophilin 3 | 2.1372244 |
| 1456393_at | XM_001480592310002J21Rik | RIKEN cDNA 2310002J21 gene | 2.1385822 |
| 1425532_a_at | Bin1 | bridging integrator 1 | 2.1395063 |
| 1449164_at | Cd68 | CD68 antigen | 2.1412122 |
| 1428346_at | Traf1 | TRAF type zinc finger domain containing 1 | 2.1419697 |
| 1417371_at | Peli1 | pellino 1 | 2.1421561 |
| 1429060_at | NA | NA | 2.1454563 |
| 1456235_at | BB165335 | expressed sequence BB165335 | 2.146203 |
| 1437341_x_at | Cnp | 2',3'-cyclic nucleotide 3' phosphodiesterase | 2.146276 |
| 1436175_at | A430107N12Rik | RIKEN cDNA A430107N12 gene | 2.1463041 |
| 1429950_at | Unc5cl | unc-5 homolog C (C. elegans)-like | 2.1463429 |
| 1452696_a_at | 4933439C10Rik | RIKEN cDNA 4933439C10 gene | 2.1463488 |
| 1452696_a_at | 4933439C10Rik | RIKEN cDNA 4933439C10 gene | 2.1463488 |
| 1435280_at | AI452195 | expressed sequence AI452195 | 2.1478271 |
| 1424382_at | 4833423F13Rik | Tnik TRAF2 and NCK interacting kinase | 2.147857 |
| 1437821_at | NA | NA | 2.149313 |
| 1437821_at | NA | NA | 2.149313 |
| 1433754_at | Mbnl2 | muscleblind-like 2 | 2.1512487 |
| 1439857_at | NA | Transcribed locus | 2.1513944 |
| 1430622_at | 4833423F13Rik | RIKEN cDNA 4833423F13 gene | 2.1517713 |
| 1430622_at | 4833423F13Rik | RIKEN cDNA 4833423F13 gene | 2.1517713 |
| 1430579_at | XM_001473602Tnik | TRAF2 and NCK interacting kinase | 2.1533241 |
| 1430579_at | XM_001473602Tnik | TRAF2 and NCK interacting kinase | 2.1533241 |
| 1416414_at | Emilin1 | elastin microfibril interfacer 1 | 2.1536064 |
| 1456159_at | NA | 3 days neonate thymus cDNA, RIKEN full-length enriched library, clone: A630054P20 product: unclassifiable, full insert sequence | 2.155438 |
| 1448213_at | Anxa1 | annexin A1 | 2.1561162 |
| 1422662_at | Lgals8 | lectin, galactose binding, soluble 8 | 2.1579592 |
| Gene ID       | Description                                                                 | Value         |
|--------------|------------------------------------------------------------------------------|---------------|
| 1437244_at   | growth arrest-specific 2 like 3 /// similar to growth arrest-specific 2 like 3 | 2.158021      |
| 1431100_at   | 5830482F20Rik RIKEN cDNA 5830482F20 gene                                      | 2.158267      |
| 1449303_at   | Sesn3 sestrin 3                                                              | 2.159384      |
| 1422758_at   | Chst2 carbohydrate sulfotransferase 2                                        | 2.1595938     |
| 1429477_at   | Ncaph2 non-SMC condensin II complex, subunit H2                               | 2.1596546     |
| 1421818_at   | Bcl6 B-cell leukemia/lymphoma 6                                               | 2.159788      |
| 1421818_at   | Bcl6 B-cell leukemia/lymphoma 6                                               | 2.159788      |
| 1424786_s_at | Wdr45 WD repeat domain 45                                                     | 2.1614141     |
| 1418135_at   | Aff1 AF4/FMR2 family, member 1                                                | 2.161613      |
| 1430585_at   | 5930436O19Rik RIKEN cDNA 5930436O19 gene                                      | 2.1627872     |
| 1418894_s_at | Pbx2 pre B-cell leukemia transcription factor 2                               | 2.1636302     |
| 1441192_at   | Scly selenocysteine lyase                                                     | 2.1636858     |
| 1441192_at   | Scly selenocysteine lyase                                                     | 2.1636858     |
| 1434373_at   | B930006L02Rik RIKEN cDNA B930006L02 gene                                      | 2.1639855     |
| 1434527_at   | Terf1 telomeric repeat binding factor 1                                       | 2.1643672     |
| 1451456_at   | 6430706D22Rik RIKEN cDNA 6430706D22 gene                                      | 2.1650226     |
| 1438130_at   | Taf15 TAF15 RNA polymerase II, TATA box binding protein (                     | 2.1670585     |
| 1441545_at   | Zccch11 zinc finger, CCHC domain containing 11                               | 2.168927      |
| 1426807_at   | Lta4h Leukotriene A4 hydrolase                                               | 2.170576      |
| 1426807_at   | Lta4h Leukotriene A4 hydrolase                                               | 2.170576      |
| 1416390_at   | Rcbtb2 regulator of chromosome condensation (RCC1) and B                     | 2.1715775     |
| 1417409_at   | Jun oncogene                                                                  | 2.1725554     |
| 1416592_at   | Girx glutaredoxin                                                             | 2.1734087     |
| 1430051_at   | 4930486L24Rik RIKEN cDNA 4930486L24 gene                                      | 2.173477      |
| 1417896_at   | Tjp3 tight junction protein 3                                                 | 2.1735003     |
| 1417896_at   | Tjp3 tight junction protein 3                                                 | 2.1735003     |
| 1436582_at   | Zdhhc15 zinc finger, DHHC domain containing 15                               | 2.1742985     |
| 1449925_at   | Cxcr3 chemokine (C-X-C motif) receptor 3                                      | 2.1743736     |
| 1451416_a_at | Tgm1 transglutaminase 1, K polypeptide                                        | 2.1765692     |
| 1444017_at   | Gltr1 GluT1 glucose transporter 1                                             | 2.1774843     |
| 1444257_at   | Prl1 proline rich 1                                                           | 2.1785884     |
| 1452956_a_at | DNA segment, Chr 12, ERATO Doi 647, expressed                                | 2.1787364     |
| 1422814_at   | Aspm asp (abnormal spindle)-like, microcephaly associated                   | 2.178818      |
| 1434277_a_at | Ypel2 yippee-like 2 (Drosophila)                                             | 2.179884      |
| Entrez ID | Source Gene Name | Description | Log2 Ratio |
|----------|-----------------|-------------|------------|
| 1434277_a_at | NM_001005341 | Ypel2 yippee-like 2 (Drosophila) | 2.179884 |
| 1426950_at | NM_177460 | Parp16 poly (ADP-ribose) polymerase family, member 16 | 2.1808267 |
| 1436032_at | NA | Bone marrow macrophage cDNA, RIKEN full-length e1 | 2.181522 |
| 1431708_a_at | NM_011585 | Tia1 cytotoxic granule-associated RNA binding protein 1 | 2.1821125 |
| 1418174_at | NM_016974 | Dbp D site albumin promoter binding protein | 2.182967 |
| 1426545_at | NA | trinucleotide repeat containing 6b | 2.1830223 |
| 1419796_at | 5430434G16Rik | RIKEN cDNA 5430434G16 gene | 2.1833587 |
| 1441976_at | NA | acyl-CoA synthetase short-chain family member 2 | 2.1842582 |
| 1419589_at | NM_010740 | CD93 antigen | 2.1851747 |
| 1417161_at | NM_026373 | CDK2-associated protein 2 | 2.1862066 |
| 1457020_at | NA | NA | 2.186406 |
| 1453583_at | NM_001045536 | Zzef1 zinc finger, ZZ-type with EF hand domain 1 | 2.1890209 |
| 1421911_at | NM_019963 | Stat2 signal transducer and activator of transcription 2 | 2.1897817 |
| 1427161_at | NM_00108136 | Centromere protein F | 2.1900258 |
| 1436921_at | NM_009726 | Atp7a ATPase, Cu++ transporting, alpha polypeptide | 2.1901786 |
| 1441242_at | NA | NA | 2.1922903 |
| 1417600_at | NM_021301 | Solute carrier family 15 (H+/peptide transporter), member 2 | 2.1923735 |
| 1438482_at | LOC100039683 | Tax1 (human T-cell leukemia virus type I) binding protein 3 | 2.1925817 |
| 1444343_at | A130064L14Rik | Nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, epsilon | 2.1998122 |
| 1457174_at | AU015680 | Expressed sequence AU015680 | 2.2007644 |
| 1458299_s_at | NM_008690 | Nfkbie nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, epsilon | 2.2011218 |
| 1424378_at | NM_145554 | Ldrlap1 low density lipoprotein receptor adaptor protein 1 | 2.2014854 |
| 1416796_at | LOC100044475 | Non-catalytic region of tyrosine kinase adaptor protein | 2.2019281 |
| 1419835_s_at | NM_111117 | Plectin 1 | 2.202136 |
| 1448548_at | NM_054040 | Tubby like protein 4 | 2.202543 |
| Gene Symbol | Accession Numbers | Description                                                                 | Log2 Fold Change |
|------------|------------------|-----------------------------------------------------------------------------|-----------------|
| Frmd4a     | NM_172475        | FERM domain containing 4A                                                  | 2.2027912       |
| Grina      | NM_023168        | glutamate receptor, ionotropic, N-methyl D-aspartate                        | 2.2034256       |
| Grina      | NM_023168        | glutamate receptor, ionotropic, N-methyl D-aspartate                        | 2.2034256       |
| Abr        | NM_198018///Abr  | active BCR-related gene                                                    | 2.2090843       |
| Dusp1      | NM_013642        | dual specificity phosphatase 1                                             | 2.2101228       |
| Brdt       | NM_00107987///Brdt | bromodomain, testis-specific                                              | 2.2103891       |
| Hip1       | NM_146001        | huntingtin interacting protein 1                                           | 2.2106647       |
| Ccpg1      | NM_028181        | cell cycle progression 1                                                  | 2.2114046       |
| Pvr        | NM_027514        | poliovirus receptor                                                        | 2.212219        |
| Myo18a     | NM_011586        | myosin XVIIIa                                                              | 2.2125192       |
| Slc38a2    | NM_027514        | solute carrier family 38, member 2                                         | 2.21267         |
| Exoc3      | NM_177333        | exocyst complex component 3                                               | 2.2163715       |
| Brdt       | NM_00107987///Brdt | bromodomain, testis-specific                                              | 2.2103891       |
| Ccnf       | NM_007634        | cyclin F                                                                   | 2.2183695       |
| Ccnf       | NM_017367        | cyclin I                                                                   | 2.21929         |
| SH3bgrl    | NM_019889        | SH3-binding domain glutamic acid-rich protein like                         | 2.2194524       |
| Gch1       | NM_008102        | GTP cyclohydrolase 1                                                       | 2.2202022       |
| Chmp5      | NM_029814        | chromatin modifying protein 5                                             | 2.2206519       |
| Sesn3      | NM_030261        | sestrin 3                                                                  | 2.2213871       |
| Pcmtd2     | NM_153594        | protein-L-isoaspartate (D-aspartate) O-methyltransfer                      | 2.2215874       |
| Cd8b1      | NM_009858        | CD8 antigen, beta chain 1                                                 | 2.2222807       |
| Pecam1     | NM_00103237      | platelet/endothelial cell adhesion molecule 1                             | 2.229329        |
| Cit        | NM_007708        | citron                                                                     | 2.2296364       |
| Cit        | NM_007708        | citron                                                                     | 2.2296364       |
| Tnfaip8l2  | NM_027206        | tumor necrosis factor, alpha-induced protein 8-like 2                     | 2.230832        |
| D10Erdt709e| NA               | DNA segment, Chr 10, ERATO Doi 709, expressed                             | 2.2324705       |
| NA         | NA               | 7 days neonate cerebellum cDNA, RIKEN full-length cDNA                     | 2.232527        |
| Cd72       | NM_007654        | CD72 antigen                                                               | 2.234745        |
| Rab2b      | NM_172601        | RAB2B, member RAS oncogene family                                         | 2.236009        |
| Bbs4       | NM_175325        | Bardet-Biedl syndrome 4 homolog (human)                                   | 2.2360718       |
| E2f7///LOC639365 | NM_178609///E2f7///LOC639365 | E2F transcription factor 7///similar to E2F transcriptic                  | 2.2378042       |
| Fbxw2      | NM_013890        | F-box and WD-40 domain protein 2                                          | 2.2403352       |
| Fbxw2      | NM_013890        | F-box and WD-40 domain protein 2                                          | 2.2403352       |
| Gene Name                  | Description                                                                 | Log2 Fold Change |
|---------------------------|-----------------------------------------------------------------------------|------------------|
| Pdcd1lg2                  | programmed cell death 1 ligand 2                                            | 2.2406776        |
| Trim30                    | tripartite motif protein 30                                                 | 2.2414234        |
| Dbp                       | D site albumin promoter binding protein                                      | 2.2426636        |
| Samsn1                    | SAM domain, SH3 domain and nuclear localization site                        | 2.2429192        |
| Gas2l3                    | growth arrest-specific 2 like 3                                            | 2.2451015        |
| Nisch                     | nischarin                                                                  | 2.2483063        |
| Mbt1                      | mbt domain containing 1                                                     | 2.2541168        |
| Igf1r                     | insulin-like growth factor I receptor                                       | 2.2546077        |
| Spata6                    | spermatogenesis associated 6                                               | 2.2558887        |
| Nisch                     | nischarin                                                                  | 2.2569046        |
| Mbt1                      | mbt domain containing 1                                                     | 2.2569046        |
| Og1t                      | O-linked N-acetylglucosamine (GlcNAc) transferase (l)                       | 2.2583668        |
| Rell1                     | RELT-like 1                                                                 | 2.25984          |
| Spata6                    | spermatogenesis associated 6                                               | 2.2598743        |
| C230066K19Rik              | RIKEN cDNA 5330406M23 gene                                                  | 2.260394         |
| C230066K19Rik              | RIKEN cDNA 5330406M23 gene                                                  | 2.260394         |
| InaD-like (Drosophila)    |                                                                        | 2.2657092        |
| Ncis                      | ceroid lipofuscinosis, neuronal 3, juvenile (Batten, Sp)                    | 2.267071         |
| Acot11                    | acyl-CoA thioesterase 11                                                   | 2.2709198        |
| Na1                       |                                                                           | 2.273289         |
| Rab2b                     | RAB2B, member RAS oncogene family                                          | 2.2756934        |
| H2afx                     | H2A histone family, member X                                               | 2.276536         |
| 2810474O19Rik              | RIKEN cDNA 2810474O19 gene                                                  | 2.2767348        |
| Niban                     | niban protein                                                              | 2.2787313        |
| Gene ID       | RefSeq ID(s)          | Description                           | Log2 Fold Change |
|--------------|-----------------------|---------------------------------------|-----------------|
| 1436854_at   | NM_011644             | transient receptor potential cation channel, subfamily | 2.2796414        |
| 1436854_at   | NM_011644             | transient receptor potential cation channel, subfamily | 2.2796414        |
| 1423586_at   | NM_009465             | AXL receptor tyrosine kinase          | 2.279834         |
| 1439805_at   | NM_018823///Nfat5     | nuclear factor of activated T-cells 5 | 2.2801504        |
| 1418501_a_at | NM_130885             | Oxr1 oxidation resistance 1           | 2.2825751        |
| 1449878_a_at | NM_133648///Slc12a6   | solute carrier family 12, member 6    | 2.2834022        |
| 1423390_at   | NM_009172             | seven in absentia 1A                  | 2.283414         |
| 1418448_at   | NM_009101             | Harvey rat sarcoma oncogene, subgroup R | 2.2840412        |
| 1438690_at   | NM_021288             | Thymidylate synthase                  | 2.2856872        |
| 1438690_at   | NM_021288             | Thymidylate synthase                  | 2.2856872        |
| 1454617_at   | NM_00104259///Arrdc3  | arrestin domain containing 3          | 2.2885437        |
| 1423478_at   | NM_008855             | protein kinase C, beta 1              | 2.2905679        |
| 1451177_at   | NM_025926///Dnajb4    | DNAJ (Hsp40) homolog, subfamily B, member 4 | 2.2932944        |
| 1451972_at   | NM_133236///EG545216///Glcci1///glucocorticoid induced transcript 1///predicted gene, | 2.2937407        |
| 1451972_at   | NM_133236///EG545216///Glcci1///glucocorticoid induced transcript 1///predicted gene, | 2.2937407        |
| 1423306_at   | NM_134133 2010002N04Rik | RIKEN cDNA 2010002N04 gene            | 2.2952766        |
| 1434674_at   | NM_010748             | lysosomal trafficking regulator       | 2.2977242        |
| 1441880_x_at | NM_145580///U2af1l4   | U2 small nuclear RNA auxiliary factor 1-like 4///trans | 2.2984185        |
| 1459009_at   | NA                   | NA                                    | 2.2987463        |
| 1459009_at   | NA                   | NA                                    | 2.2987463        |
| 1434037_s_at | NM_020005             | p300/CBP-associated factor            | 2.299739         |
| 1428107_at   | NM_019989             | SH3-binding domain glutamic acid-rich protein like | 2.3006227        |
| 1441727_s_at | NM_00108541///Zfp467  | zinc finger protein 467               | 2.301293         |
| 1441727_s_at | NM_00108541///Zfp467  | zinc finger protein 467               | 2.301293         |
| 1435461_at   | NM_133853             | membrane associated guanylate kinase, WW and PDz | 2.3018653        |
| 1450424_a_at | NM_010531 ///II18bp   | interleukin 18 binding protein        | 2.3041105        |
| 1450424_a_at | NM_010531 ///II18bp   | interleukin 18 binding protein        | 2.3041105        |
| 1431993_a_at | NM_00103899///Rnf38   | ring finger protein 38                | 2.3045716        |
| 1447147_at   | NA                   | NA                                    | 2.3062205        |
| 1447147_at   | NA                   | NA                                    | 2.3062205        |
| 1437504_at   | NM_029983             | Src-like-adaptor 2                   | 2.3066316        |
| 1419043_a_at | NM_021792             | interferon inducible GTPase 1         | 2.3069615        |
| 1435820_x_at | NM_007584///Ddr1      | discoidin domain receptor family, member 1 | 2.3074155        |
| 1434156_at   | NA                   | NA                                    | 2.3079784        |
| Gene ID   | Accession | Symbol | Description                                                                 | Log2 Ratio |
|-----------|-----------|--------|-----------------------------------------------------------------------------|------------|
| 1434156   | NA        | Abcb1a | ATP-binding cassette, sub-family B (MDR/TAP), meml                          | 2.3079784  |
| 1419759   | NM_011076 | Abcb1a | gluatamate receptor, ionotrophic, N-methyl D-aspartate-                    | 2.3121426  |
| 1436297   | NM_011076 | Grina  | glutamate receptor, ionotrophic, N-methyl D-aspartate-                    | 2.3125806  |
| 1436212   | NM_172514 | Tmem71 | transmembrane protein 71                                                   | 2.3139093  |
| 1418317   | NM_010710 | Lhx2   | LIM homeobox protein 2                                                     | 2.3139093  |
| 1418317   | NM_010710 | Lhx2   | LIM homeobox protein 2                                                     | 2.3139093  |
| 1455000   | NM_175493 | Gpr68  | G protein-coupled receptor 68                                              | 2.3139784  |
| 1448335   | NM_017367 | Ccni   | cyclin I                                                                    | 2.3147109  |
| 1436841   | NM_172772 | B230380D07Rik | RIKEN cDNA B230380D07 gene                                                | 2.3159504  |
| 1435829   | NM_175446 | Zmat1  | zinc finger, matrin type 1                                                  | 2.316243   |
| 1460470   | NM_028765 | Acoxl  | acyl-Coenzyme A oxidase-like                                                | 2.3175414  |
| 1451673   | NM_00108111 | Cd8a  | CD8 antigen, alpha chain                                                   | 2.318413   |
| 1460173   | NM_010688 | Lasp1  | LIM and SH3 protein 1                                                      | 2.3205502  |
| 1438676   | NM_194336 | Mpa2l  | macrophage activation 2 like                                               | 2.3217976  |
| 1458148   | NM_00108128 | Nlr3   | NLR family, CARD domain containing 3                                       | 2.3219275  |
| 1429588   | NM_026054 | 2810474O19Rik | RIKEN cDNA 2810474O19 gene                                            | 2.321928   |
| 1420342   | XM_895068 | Gdap10 | ganglioside-induced differentiation-associated-protein                     | 2.322367   |
| 1450355   | NA        | Capg   | capping protein (actin filament), gelsolin-like                            | 2.3235085  |
| 1440896   | NA        | NA     | 3 days neonate thymus cDNA, RIKEN full-length enric                        | 2.3243308  |
| 1456432   | NM_010815 | Grap2  | GRB2-related adaptor protein 2                                            | 2.326709   |
| 1436714   | NM_178665 | Lpp    | LIM domain containing preferred translocation partne                      | 2.3284912  |
| 1455871   | NM_016738 | LOC100039683///LOiTax1 (human T-cell leukemia virus type I) binding prc     | 2.3297246  |
| 1443521   | NA        | NA     | NA                                                                          | 2.330223   |
| 1443521   | NA        | NA     | NA                                                                          | 2.330223   |
| 1455314   | NM_178665 | Lpp    | LIM domain containing preferred translocation partne                      | 2.3315725  |
| 1453596   | NM_010496 | Id2    | inhibitor of DNA binding 2                                                 | 2.333064   |
| 1432026   | NA        | Herc5  | hect domain and RLD 5                                                      | 2.3334754  |
| 1448878   | NM_016662 | Mxd3   | Max dimerization protein 3                                                 | 2.3350399  |
| 1423702   | NM_008197 | H1f0   | H1 histone family, member 0                                               | 2.337708   |
| 1423326   | NM_009848 | Entpd1 | ectonucleoside triphosphate diphosphohydrolase 1                           | 2.3384578  |
| 1423326   | NM_009848 | Entpd1 | ectonucleoside triphosphate diphosphohydrolase 1                           | 2.3384578  |
| 1419297   | NM_008206 | H2-Oa  | histocompatibility 2, O region alpha locus                                | 2.3394005  |
| 1456518   | XM_150216///4930422107Rik | RIKEN cDNA 4930422107 gene | 2.341559 |
| 1458462   | NM_00100550 | Arhgap30 | Rho GTPase activating protein 30                                          | 2.341643   |
| Gene ID     | Accession     | Description                                                                 | Log2 Fold Change |
|------------|---------------|------------------------------------------------------------------------------|-----------------|
| 1458462_at | NM_00100550   | Arhgap30 Rho GTPase activating protein 30                                    | 2.341643        |
| 1426998_at | NM_148926     | LOC100048107///Zfa similar to Zfand3 protein///zinc finger, AN1-type dom     | 2.345492        |
| 1439123_at | NA            | 16 days embryo head cDNA, RIKEN full-length enrich                           | 2.352354        |
| 1439123_at | NA            | 16 days embryo head cDNA, RIKEN full-length enrich                           | 2.352354        |
| 1439179_a_at | NM_183264    | 5830405N20Rik RIKEN cDNA 5830405N20 gene                                     | 2.3532217       |
| 1422659_at | NM_00102543   | Camk2d calcium/calmodulin-dependent protein kinase II, delta                 | 2.356474        |
| 1429247_at | NM_013472     | Anxa6 annexin A6                                                            | 2.3568244       |
| 1429722_at | NM_029348     | Zbtb4 zinc finger and BTB domain containing 4                               | 2.357615        |
| 1453474_at | NM_026185     | 1300007F04Rik RIKEN cDNA 1300007F04 gene                                     | 2.3589218       |
| 1421871_at | NM_019989     | Sh3bgrl SH3-binding domain glutamic acid-rich protein like                   | 2.359648        |
| 1423903_at | NM_027514     | Pvr poliovirus receptor                                                      | 2.3619134       |
| 1434145_s_at | NM_023475    | Serhl serine hydrolase-like                                                 | 2.363657        |
| 1454942_at | NM_022018     | Niban niban protein                                                          | 2.3646617       |
| 1426774_at | NM_172893     | Parp12 poly (ADP-ribose) polymerase family, member 12                       | 2.3665655       |
| 1455582_at | NA            | Transcribed locus                                                           | 2.3675704       |
| 1449733_s_at | NM_009172    | Siah1a seven in absentia 1A                                                  | 2.3679872       |
| 1427568_a_at | NM_026641    | Ift80 intraflagellar transport 80 homolog (Chlamydomonas)                   | 2.36899         |
| 1428279_a_at | NM_028139    | Atxn7atxan 7-like 4                                                         | 2.3707259       |
| 1452073_at | NM_144526     | 6720460F02Rik RIKEN cDNA 6720460F02 gene                                     | 2.371379        |
| 1458574_at | NA            | Transcribed locus                                                           | 2.3749783       |
| 1452217_at | NM_00103995   | Ahnak AHNAK nucleoprotein (desmoyokin)                                      | 2.3762858       |
| 1425335_at | NM_00108111   | Cd8a CD8 antigen, alpha chain                                               | 2.3769035       |
| 1448437_a_at | NM_019581    | Gtpbp2 GTP binding protein 2                                                | 2.3773715       |
| 1426306_a_at | NM_030700///LOC100046560///Ma melanoma antigen, family D, 2///similar to melanoma | 2.3799798       |
| 1424444_a_at | NM_00108538   | 1600014C10Rik RIKEN cDNA 1600014C10 gene                                     | 2.381362        |
| 1454632_at | NM_178745     | 6330442E10Rik RIKEN cDNA 6330442E10 gene                                     | 2.3828256       |
| 1457549_at | NA            | NA                                                                           | 2.383902        |
| 1457549_at | NA            | NA                                                                           | 2.383902        |
| 1439768_x_at | NM_011350   | Sema4f sema domain, immunoglobulin domain (Ig), TM domain                   | 2.3860073       |
| 1430522_a_at | NM_00108074   | Vamp5 vesicle-associated membrane protein 5                                 | 2.3861465       |
| 1430522_a_at | NM_00108074   | Vamp5 vesicle-associated membrane protein 5                                 | 2.3861465       |
| 1434260_at | NM_199012     | Fchsd2 FCH and double SH3 domains                                            | 2.3887722       |
| 1460003_at | NA            | AI956758 expressed sequence AI956758                                       | 2.3914726       |
| Gene ID | Location | Description | Expression Ratio |
|---------|----------|-------------|------------------|
| 1460003_at | NA | expressed sequence AI956758 | 2.3914726 |
| 1434310_at | NM_007561 | Bmpr2, bone morphogenic protein receptor, type II (serine/threonine kinase) | 2.394634 |
| 1438257_at | NA | Transcribed locus | 2.3952193 |
| 1438257_at | NA | Transcribed locus | 2.3952193 |
| 1451218_at | NM_138677 | Edem1, ER degradation enhancer, mannosidase alpha-like 1 | 2.397531 |
| 1426516_a_at | NM_015763///NM_172950 | Lpin1, lipin 1 | 2.3984563 |
| 1448710_at | NM_009911 | Cxcr4, chemokine (C-X-C motif) receptor 4 | 2.3985312 |
| 1453300_at | NM_00100132///Slc35d2 | solute carrier family 35, member D2 | 2.3986766 |
| 141937_s_at | NM_026880///LOC100047214///Pin | PTEN induced putative kinase 1///similar to PTEN induced putative kinase 1 | 2.3994825 |
| 1422818_at | NM_017464 | Nedd9, neural precursor cell expressed, developmentally down-regulated gene 9 | 2.4012673 |
| 1438511_a_at | NM_025427 | RIKEN cDNA 1190002H23Rik | 2.4048498 |
| 1439252_a_at | NM_016692 | Incenp, inner centromere protein | 2.4053075 |
| 1453416_at | NM_00103333///Gas2l3 | growth arrest-specific 2 like 3 | 2.4063976 |
| 1454286_at | NA | RIKEN cDNA 1110004M10 gene | 2.406639 |
| 1454286_at | NA | RIKEN cDNA 1110004M10 gene | 2.406639 |
| 1448079_at | NM_00103314///Rnf166 | ring finger protein 166 | 2.4068248 |
| 1449482_at | NM_030082///Hist3h2ba | histone cluster 3, H2ba | 2.4074552 |
| 1454566_at | NA | HIV-1 Rev binding protein-like | 2.4112928 |
| 1454889_x_at | NM_172051 | Tmcc3, transmembrane and coiled coil domains 3 | 2.4128983 |
| 1454757_s_at | NM_026790///D12Ertd647e | DNA segment, Chr 12, ERATO Doi 647, expressed | 2.4142025 |
| 1450449_a_at | NM_021430 | 2900002H16Rik | 2.414637 |
| 1430485_at | NM_011644///Trpc2 | transient receptor potential cation channel, subfamily | 2.4162548 |
| 1427202_at | NM_177101///4833442J19Rik | RIKEN cDNA 4833442J19 gene | 2.417975 |
| 1428936_at | NM_026482 | Atp2b1, ATPase, Ca++ transporting, plasma membrane 1 | 2.4192386 |
| 1428902_at | NM_021439 | Chst11, carbohydrate sulfotransferase 11 | 2.4211297 |
| 1426604_at | NM_011882 | Rnasel, ribonuclease L (2'), 5'-oligoisoadenylate synthetase-dt' | 2.426831 |
| 1451070_at | NM_010273 | Gdi1, guanosine diphosphate (GDP) dissociation inhibitor 1 | 2.427241 |
| 1416408_at | NM_015729 | Acox1, acyl-Coenzyme A oxidase 1, palmitoyl | 2.427668 |
| 1439138_at | NA | Transcribed locus | 2.4277112 |
| 1461418_x_at | NM_133242 | Rbm39, RNA binding motif protein 39 | 2.429815 |
| Probe ID       | Description                                                                 | Description                                                                 | Gene ID  | Description                                                                 |
|---------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|----------|------------------------------------------------------------------------------|
| 1456661_at    | NA                                                                           | Transcribed locus                                                           |          | 2.430371                                                                     |
| 1452700_s_at  | NM_00102413 Kbtbd7                                                         | kelch repeat and BTB (POZ) domain containing 7                              |          | 2.4305196                                                                   |
| 1437064_at    | NM_013476 Ar                                                                | androgen receptor                                                           |          | 2.4363694                                                                   |
| 1456386_at    | NA                                                                           | 7 days neonate cerebellum cDNA, RIKEN full-length e                          |          | 2.4392252                                                                   |
| 1439981_at    | A430001F24Rik                                                               | RIKEN cDNA A430001F24 gene                                                  |          | 2.4396777                                                                   |
| 1439981_at    | A430001F24Rik                                                               | RIKEN cDNA A430001F24 gene                                                  |          | 2.4396777                                                                   |
| 1424609_a_at  | NM_030560//BC003993///LOC100 cDNA sequence BC003993///hypothetical LOC54481e | 2.4429708                                                                   |
| 1428176_at    | NM_010333 Edg5                                                              | endothelial differentiation, sphingolipid G-protein-cou                      |          | 2.444581                                                                     |
| 1421065_at    | NM_0104817Jak2                                                              | Janus kinase 2                                                              |          | 2.4478102                                                                   |
| 1426221_at    | NM_172767 Loh11cr2a                                                         | loss of heterozygosity, 11, chromosomal region 2, gene                      |          | 2.4485812                                                                   |
| 1456262_at    | NM_148930 Rbm5                                                              | RNA binding motif protein 5                                                  |          | 2.448992                                                                     |
| 1442280_at    | NM_026412 D2Ert750e                                                         | DNA segment, Chr 2, ERATO Doi 750, expressed                               |          | 2.44945                                                                      |
| 1458407_s_at  | NA                                                                           | Expressed sequence AI429294                                                |          | 2.4495513                                                                   |
| 1421550_a_at  | NM_030684///LOC640746///Trim34 similar to Tripartite motif protein 34///tripartite motif | 2.4507163                                                                   |
| 1421550_a_at  | NM_030684///LOC640746///Trim34 similar to Tripartite motif protein 34///tripartite motif | 2.4507163                                                                   |
| 1448364_at    | NM_007635 Ccng2                                                             | cyclin G2                                                                   |          | 2.453818                                                                     |
| 1450167_at    | NM_021411 Rab37                                                             | RAB37, member of RAS oncogene family                                        |          | 2.4546845                                                                   |
| 1421217_a_at  | NM_010708 Lgals9                                                            | lectin, galactose binding, soluble 9                                        |          | 2.454961                                                                     |
| 1420583_a_at  | NM_013646 Rora                                                              | RAR-related orphan receptor alpha                                           |          | 2.4555006                                                                   |
| 1420583_a_at  | NM_013646 Rora                                                              | RAR-related orphan receptor alpha                                           |          | 2.4555006                                                                   |
| 1435906_x_at  | NM_010260 Gbp2                                                              | guanylate nucleotide binding protein 2                                     |          | 2.4600422                                                                   |
| 1435227_at    | NM_00107988 Bcl11b                                                          | B-cell leukemia/lymphoma 11B                                                |          | 2.4611418                                                                   |
| 1449441_a_at  | NM_00108392 Wbp1                                                            | WW domain binding protein 1                                                |          | 2.4635885                                                                   |
| 1418686_at    | NM_033541 Oas1c                                                             | 2'-5' oligoadenylate synthetase 1C                                         |          | 2.4648154                                                                   |
| 1456810_at    | NM_139061 Vps54                                                             | vacuolar protein sorting 54 (yeast)                                        |          | 2.465238                                                                     |
| 1434517_at    | NM_175546 Wdy2                                                              | WD repeat and FYVE domain containing 2                                     |          | 2.4677556                                                                   |
| 1459840_s_at  | NM_025455 Ccdc28b                                                           | coiled coil domain containing 28B                                          |          | 2.4686356                                                                   |
| 1416529_at    | NM_010128 Emp1                                                               | epithelial membrane protein 1                                              |          | 2.4695363                                                                   |
| 1459879_at    | NM_00108115 4921513D23Rik                                                   | RIKEN cDNA 4921513D23 gene                                                 |          | 2.471243                                                                     |
| 1459879_at    | NM_00108115 4921513D23Rik                                                   | RIKEN cDNA 4921513D23 gene                                                 |          | 2.471243                                                                     |
| 1452222_at    | NM_011682 Utrn                                                               | utrophin                                                                    |          | 2.4713805                                                                   |
| 1441056_at    | NM_144937 Usp3                                                               | ubiquitin specific peptidase 3                                            |          | 2.4719195                                                                   |
| 1453072_at    | XM_130823///Gpr160                                                           | G protein-coupled receptor 160                                            |          | 2.4721208                                                                   |
| 1453072_at    | XM_130823///Gpr160                                                           | G protein-coupled receptor 160                                            |          | 2.4721208                                                                   |
| Gene ID   | Accession     | Description                                                                 | Log2 Fold Change |
|----------|---------------|-----------------------------------------------------------------------------|------------------|
| 1417477_at | NM_025294     | Gtlf3b gene trap locus F3b                                                   | 2.4752588        |
| 1440020_at | NA            | 0 day neonate thymus cDNA, RIKEN full-length enriched library, clone:A430108B15 | 2.4756792        |
| 1437052_at | NM_011401     | Slc2a3 solute carrier family 2 (facilitated glucose transporter)             | 2.4773903        |
| 1420499_at | NM_008102     | Gch1 GTP cyclohydrolase 1                                                   | 2.4778214        |
| 1434815_at | NM_178907     | Mapkapk3 mitogen-activated protein kinase-activated protein kinase 3         | 2.4819126        |
| 1440764_at | NM_00108163   | Araf v-raf murine sarcoma 3611 viral oncogene homolog                        | 2.484205         |
| 1438805_at | NM_00108163   | Ccnd3 cyclin D3                                                             | 2.486611         |
| 1438805_at | NM_00108163   | Ccnd3 cyclin D3                                                             | 2.486611         |
| 1438971_x_at| NM_009459     | Ube2h ubiquitin-conjugating enzyme E2H                                      | 2.4887316        |
| 1457888_at | NA            | Transcribed locus                                                            | 2.4944196        |
| 1457888_at | NA            | Transcribed locus                                                            | 2.4944196        |
| 1435913_at | NM_177897     | B4galnt4 beta-1,4-N-acetyl-galactosaminyl transferase 4                      | 2.4945688        |
| 1434457_at | NM_013673     | Sp100 nuclear antigen Sp100                                                 | 2.4963694        |
| 1460351_at | NM_016740     | S100a11 S100 calcium binding protein A11 (calgizzarin)                      | 2.4982188        |
| 1456914_at | NM_146136     | Slc16a4 Solute carrier family 16 (monocarboxylic acid transport)            | 2.4983182        |
| 1439495_at | NM_0108110    | 4933407H18RIk RIKEN cDNA 4933407H18 gene                                     | 2.499052         |
| 1439161_at | NM_029456     | Saps3 SAPS domain family, member 3                                          | 2.5019197        |
| 1439161_at | NM_029456     | Saps3 SAPS domain family, member 3                                          | 2.5019197        |
| 1433501_at | NM_177662     | CtsO cathepsin O                                                            | 2.5040476        |
| 1424833_at | NM_010586/// | Itpr2 inositol 1,4,5-trisphosphate receptor 2                               | 2.5086865        |
| 1429134_at | NM_010657     | Hivep3 human immunodeficiency virus type I enhancer binding                 | 2.5104947        |
| 1452178_at | NM_011117/// | LOC100046469///LOC671535///Plec1 plectin 1///similar to Plec1 protein       | 2.5116615        |
| 1428930_at | XM_356361/// | Tmem29 transmembrane protein 29                                            | 2.5122366        |
| 1439038_at | NM_027143     | 9130227C08Rik RIKEN cDNA 9130227C08Rik gene                                 | 2.5131412        |
| 1422478_a_at| NM_019811     | Acss2 acyl-CoA synthetase short-chain family member 2                        | 2.5132878        |
| 1415996_at | NM_00100993   | Tnixp thioredoxin interacting protein                                        | 2.514983         |
| 1449125_at | NM_025566     | Tnfaip8l1 tumor necrosis factor, alpha-induced protein 8-like 1             | 2.5166552        |
| 1453841_at | NM_231005P20Rik | RIKEN cDNA 231005P20 gene                                                   | 2.518166         |
| 1419186_a_at| NM_009183     | Sts8ia4 ST8 alpha-N-acetyl-neuraminide alpha-2,8-sialyltransferase          | 2.5212207        |
| 1427475_a_at| NA            | NA                                                                            | 2.5260158        |
| 1457917_at | NM_010693     | Lck Lymphocyte protein tyrosine kinase                                       | 2.5290873        |
| 1424254_at | NM_026820     | Ifitm1 interferon induced transmembrane protein 1                           | 2.5301251        |
| 1445201_at | NM_013843     | Zfp53 zinc finger protein 53                                                 | 2.531615         |
| 1441677_at | NA            | Transcribed locus                                                            | 2.5330434        |
| Gene ID       | Description                                                                 | Log2 Fold Change |
|--------------|-----------------------------------------------------------------------------|-----------------|
| 1437072_at   | NM_00103772 Arhgap25 Rho GTPase activating protein 25                        | 2.5381408       |
| 1448944_at   | NM_008737 Nr1p1 neuropilin 1                                               | 2.5409768       |
| 1442039_at   | NM_145711///LOC100044677///Tox similar to thymus high mobility group box protein TO' | 2.5416083       |
| 1442039_at   | NM_145711///LOC100044677///Tox similar to thymus high mobility group box protein TO' | 2.5416083       |
| 1420774_a_at | NM_026358 4930583H14Rik RIKEN cDNA 4930583H14 gene                         | 2.5457125       |
| 1436898_at   | NM_023603///NM_023908 Slco3a1 solute carrier organic anion transporter family, memb | 2.549583        |
| 1429902_at   | NA 5830443J22Rik RIKEN cDNA 5830443J22 gene                                 | 2.5508246       |
| 1429902_at   | NA 5830443J22Rik RIKEN cDNA 5830443J22 gene                                 | 2.5508246       |
| 1445037_at   | NA 6430510B20Rik RIKEN cDNA 6430510B20 gene                                 | 2.5511353       |
| 1452521_a_at | NM_011113 Plaur plasminogen activator, urokinase receptor                  | 2.5529997       |
| 1421840_at   | NM_013454 Abca1 ATP-binding cassette, sub-family A (ABC1), member           | 2.5621095       |
| 1421840_at   | NM_013454 Abca1 ATP-binding cassette, sub-family A (ABC1), member           | 2.5621095       |
| 1448918_at   | NM_001038643///NM_023908 Slco3a1 solute carrier organic anion transporter family, memb | 2.5626962       |
| 14419238_at  | NA 58303850 Abca7 ATP-binding cassette, sub-family A (ABC1), member          | 2.5628645       |
| 1428242_at   | NA 027521 Hmha1 histocompatibility (minor) HA-1                             | 2.5637045       |
| 1416863_at   | NA 022419 Abhd8 abhydrolase domain containing 8                            | 2.5670388       |
| 1457063_at   | NA NA                                                                       | 2.5677774       |
| 1457063_at   | NA NA                                                                       | 2.5677774       |
| 1458974_at   | NA NA Transcribed locus                                                     | 2.5708327       |
| 1458974_at   | NA NA Transcribed locus                                                     | 2.5708327       |
| 1440461_at   | NA 3 days neonate thymus cDNA, RIKEN full-length enriched                   | 2.5711293       |
| 1418030_at   | NM_001038643///NM_023908 Slco3a1 solute carrier organic anion transporter family, memb | 2.5720575       |
| 1451777_at   | NM_00108121 BC013672 cDNA sequence BC013672                                | 2.574181        |
| 1451777_at   | NM_00108121 BC013672 cDNA sequence BC013672                                | 2.574181        |
| 1424714_at   | NM_009657 Aldoc aldolase 3, C isoform                                       | 2.5760367       |
| 1430058_at   | NM_009193 Slbp stem-loop binding protein                                    | 2.5787237       |
| 1444103_at   | NM_029495///Epsti1 Epithelial stromal interaction 1 (breast)                | 2.5802252       |
| 1444103_at   | NM_029495///Epsti1 Epithelial stromal interaction 1 (breast)                | 2.5802252       |
| 1423765_at   | NM_145387 Ath1 ATH1, acid trehalase-like 1 (yeast)                          | 2.5805047       |
| 1418751_at   | NM_019436 Sit1 suppression inducing transmembrane adaptor 1                | 2.5866177       |
| 1451181_at   | NM_153776///LOC100047743///Tms similar to Transmembrane protein 121///transmembr | 2.5903723       |
| 1451181_at   | NM_153776///LOC100047743///Tms similar to Transmembrane protein 121///transmembr | 2.5903723       |
| 1421322_a_at | NM_008394 Isgf3g interferon dependent positive acting transcription facL    | 2.5960538       |
| 1451160_s_at | NM_027514 Pvr poliovirus receptor                                           | 2.5988243       |
| Gene Symbol | Description                          | log2 Ratio |
|-------------|--------------------------------------|------------|
| 1451160_s_at | NM_027514 Pvr | 2.5988243  |
| 1442744_at  | NM_133242 Rbm39 | 2.5993497  |
| 1456226_x_at| NM_007584///Ddr1 | 2.6006074  |
| 1428330_at  | NM_026700///Dopey2 | 2.6017663  |
| 1458589_at  | NA | 2.606003   |
| 1458460_at  | NA | 2.6062164  |
| 1458460_at  | NA | 2.6062164  |
| 1441172_at  | NA | 2.6092432  |
| 1436202_at  | NA | 2.6115696  |
| 1429870_at  | XM_00147360 Tnik | 2.6140573  |
| 1436037_at  | NM_010576 Itga4 | 2.6153295  |
| 1444078_at  | NM_00108111 Cd8a | 2.6143029  |
| 1436037_at  | NM_010576 Itga4 | 2.6153295  |
| 1437003_at  | NA | 2.6177578  |
| 1456426_at  | NM_020257 Clec2i | 2.6180675  |
| 1450165_at  | NM_011408 Slfn2 | 2.618294   |
| 1446147_at  | NM_133242 Rbm39 | 2.6206725  |
| 1438279_at  | NM_010074 Dpp4 | 2.623418   |
| 1438279_at  | NM_010074 Dpp4 | 2.623418   |
| 1427184_at  | NA Tcrb-V13 | 2.629058   |
| 1435880_at  | NM_00103319 Ankrd50 | 2.6294286  |
| 1422428_at  | NM_053178 Acsbg1 | 2.631537   |
| 1422428_at  | NM_053178 Acsbg1 | 2.631537   |
| 1422970_at  | NM_016662 Mxd3 | 2.6324236  |
| 1423626_at  | NM_133833///Dst | 2.634057   |
| 1423626_at  | NM_133833///Dst | 2.634057   |
| 1418396_at  | NM_134116 Gpsm3 | 2.6341245  |
| 1455831_at  | NM_139149 Fus | 2.6368017  |
| 1433596_at  | NM_198412 Dnajc6 | 2.6397254  |
| 1448272_at  | NM_007570 Btg2 | 2.6437736  |
| 1456685_at  | NM_008741 Nsg2 | 2.6450408  |
| 1437152_at  | XM_620516///Mex3b | 2.649302   |
| 1441823_at  | NM_183208 Zmiz1 | 2.6554754  |
| 1441823_at  | NM_183208 Zmiz1 | 2.6554754  |
| Entrezgene | NCBI Gene ID | Gene Symbol | Description | Log2 Fold Change |
|------------|--------------|-------------|-------------|-----------------|
| 1450786_x_at | NM_019808 /// | Pdlim5 | PDZ and LIM domain 5 | 2.6559231 |
| 1431843_a_at | NM_008690 | Nfkbie | nuclear factor of kappa light polypeptide gene enhancer in B-cells, inhibitor, epsilon | 2.6593528 |
| 1417787_at | NM_015789 | Dkk1 | dickkopf-like 1 | 2.6600587 |
| 1440919_at | NM_175308 | Mobkl2c | MOB1, Mps One Binder kinase activator-like 2C (yeast) | 2.6606019 |
| 1434151_at | NM_027334 | Mettl7a | methyltransferase like 7A | 2.6610157 |
| 1436767_at | NM_138680 | Luc7l2 | LUC7-like 2 (S. cerevisiae) | 2.6611288 |
| 1416697_at | NM_010074 | Dpp4 | dipeptidylpeptidase 4 | 2.6669567 |
| 1446598_at | NA | NA_16 days neonate thymus cDNA, RIKEN full-length enriched library, clone:A130067J10 product:unclassifiable, full insert sequence | 2.6698313 |
| 1436766_at | NA | NA_16 days neonate thymus cDNA, RIKEN full-length enriched library, clone:A130067J10 product:unclassifiable, full insert sequence | 2.6765747 |
| 1450476_at | NM_009924 | Cnr2 | cannabinoid receptor 2 (macrophage) | 2.6766555 |
| 1450476_at | NM_009924 | Cnr2 | cannabinoid receptor 2 (macrophage) | 2.6766555 |
| 1425281_a_at | NM_00107736 | Tsc22d3 | TSC22 domain family 3 | 2.680041 |
| 1416691_at | NM_019581 | Gtpbp2 | GTP binding protein 2 | 2.6811023 |
| 1418288_at | NM_015763 /// | Lipin1 | lipin 1 | 2.684564 |
| 1455898_x_at | NM_011401 | Slc2a3 | solute carrier family 2 (facilitated glucose transporter) | 2.6853692 |
| 1438784_at | NM_00107988 | Bcl11b | B-cell leukemia/lymphoma 11B | 2.6871521 |
| 1436033_at | NM_153584 | Bc031353 | cDNA sequence BC031353 | 2.690799 |
| 1436576_at | NM_175449 | A630077B13Rik | RIKEN cDNA A630077B13 gene | 2.692657 |
| 1427797_s_at | NM_007799 | Ctse | cathepsin E | 2.6936233 |
| 1437657_at | NM_00108134 | Zfp291 | zinc finger protein 291 | 2.6960633 |
| 1455493_at | NM_00107968 | Syn1 | synaptic nuclear envelope 1 | 2.7023234 |
| 1456212_x_at | NM_007707 | Socs3 | suppressor of cytokine signaling 3 | 2.7027354 |
| 1456178_at | NA | Bambi-ps1 | BMP and activin membrane-bound inhibitor, pseudogene | 2.7035406 |
| 1453107_s_at | NM_008021 /// | 4933413G19Rik /// | For RIKEN cDNA 4933413G19 gene///forkhead box M1/// | 2.7042272 |
| 1421739_a_at | NM_010768 | Matk | megakaryocyte-associated tyrosine kinase | 2.7049944 |
| 1421739_a_at | NM_010768 | Matk | megakaryocyte-associated tyrosine kinase | 2.7049944 |
| 1435144_at | NA | NA | Transcribed locus | 2.7066052 |
| 1460722_at | NM_146064 | Soat2 | sterol O-acyltransferase 2 | 2.708158 |
| 1416918_at | NM_016747 | Dlg3 | discs, large homolog 3 (Drosophila) | 2.7090852 |
| 1455558_at | NM_00103329 | Gm114 | gene model 114, (NCBI) | 2.7124748 |
| Gene ID   | Entrez Gene ID | Gene Name               | Description                                      | Log2 Fold Change |
|----------|----------------|-------------------------|--------------------------------------------------|-----------------|
| 1416617_at | NM_080575      | Acss1                   | acyl-CoA synthetase short-chain family member 1  | 2.7187545       |
| 1458469_at | NM_00103323   | Cblb                    | Casitas B-lineage lymphoma b                     | 2.723033        |
| 1454858_x_at | NM_027334    | Mettl7a                  | methyltransferase like 7A                        | 2.7234392       |
| 1429173_at | NM_027109      | Dnase1l1                 | deoxyribonuclease 1-like 1                       | 2.7275817       |
| 1417065_at | NM_007913      | Egr1                     | early growth response 1                          | 2.7373717       |
| 1458469_at | NM_00103323   | Cblb                    | Casitas B-lineage lymphoma b                     | 2.723033        |
| 1454858_x_at | NM_027334    | Mettl7a                  | methyltransferase like 7A                        | 2.7234392       |
| 1429173_at | NM_027109      | Dnase1l1                 | deoxyribonuclease 1-like 1                       | 2.7275817       |
| 1417065_at | NM_007913      | Egr1                     | early growth response 1                          | 2.7373717       |
| 1458469_at | NM_00103323   | Cblb                    | Casitas B-lineage lymphoma b                     | 2.723033        |
| 1454858_x_at | NM_027334    | Mettl7a                  | methyltransferase like 7A                        | 2.7234392       |
| 1429173_at | NM_027109      | Dnase1l1                 | deoxyribonuclease 1-like 1                       | 2.7275817       |
| 1417065_at | NM_007913      | Egr1                     | early growth response 1                          | 2.7373717       |
| 1441505_at | NA             | NA                      | NA                                               | 2.7413847       |
| 1440493_at | NM_134189      | Galnt10                  | UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-| 2.7512133       |
| 1440493_at | NM_134189      | Galnt10                  | UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-| 2.7512133       |
| 1422064_a_at | NM_019777     | Zbbt20                   | zinc finger and BTB domain containing 20         | 2.75206         |
| 1422064_a_at | NM_019777     | Zbbt20                   | zinc finger and BTB domain containing 20         | 2.75206         |
| 1429525_s_at | NM_053214     | Myo1f                    | myosin IF                                         | 2.755603        |
| 1417021_a_at | NM_00108395   | Spo11                    | sporulation protein, meiosis-specific, SPO11 homolog | 2.7586987       |
| 1417021_a_at | NM_00108395   | Spo11                    | sporulation protein, meiosis-specific, SPO11 homolog | 2.7586987       |
| 1443534_at | NA             | NA                      | NA                                               | 2.7608242       |
| 1424902_at | NM_028199      | Plxdc1                   | plexin domain containing 1                       | 2.7652655       |
| 1441558_at | NA             | D230044B12Rik            | RIKEN cDNA D230044B12 gene                        | 2.7669787       |
| 1442196_at | NA             | A930006K02Rik            | RIKEN cDNA A930006K02 gene                        | 2.7695656       |
| 1439276_at | NM_00103858    | Adar                     | Adenosine deaminase, RNA-specific                 | 2.7802641       |
| 1452117_a_at | NM_011815     | Fyb                      | FYN binding protein                               | 2.783623        |
| 1438169_a_at | NM_145148     | Frmd4b                   | FERM domain containing 4B                        | 2.7846148       |
| 1458947_at | NA             | NA                      | NA                                               | 2.7863348       |
| 1418831_at | NM_019762      | Pkp3                     | plakophilin 3                                     | 2.7868726       |
| 1445254_at | NA             | NA                      | NA                                               | 2.7884483       |
| 1445254_at | NA             | NA                      | NA                                               | 2.7884483       |
| 1450034_at | NM_009283      | Stat1                    | signal transducer and activator of transcription 1 | 2.7928324       |
| 1452196_a_at | NM_016965     | Nckap1                   | NCK-associated protein 1                         | 2.7931564       |
| 1441926_x_at | NM_146260     | Tmie                     | transmembrane inner ear                           | 2.7952018       |
| 1441926_x_at | NM_146260     | Tmie                     | transmembrane inner ear                           | 2.7952018       |
| 1437382_at | NM_007396      | Acvr2a                   | Activin receptor IIA                              | 2.795763        |
| 1447711_x_at | NM_983952     | 4933412E12Rik            | RIKEN cDNA 4933412E12 gene                        | 2.7963715       |
| 1452362_at | NM_053169      | Trim16                   | tripartite motif protein 16                       | 2.796523        |
| ProbeID   | Description                                      | Log2Ratio |
|-----------|--------------------------------------------------|-----------|
| 1439079_a_at | NM_00100586 Erb2ip ErbB2 interacting protein     | 2.7982397 |
| 1458018_at | NA                                               | 2.80425   |
| 1418390_at | NM_138755 Phf21a PHD finger protein 21A           | 2.805619  |
| 1422537_a_at | NM_010496 Id2 inhibitor of DNA binding 2        | 2.806374  |
| 1417697_at | NM_009230 Soat1 sterol O-acyltransferase 1       | 2.8063748 |
| 1429717_at | NM_029665 Ipo11 importin 11                     | 2.8143523 |
| 1429717_at | NM_029665 Ipo11 importin 11                     | 2.8143523 |
| 1451862_a_at | NM_011073 Prf1 perforin 1 (pore forming protein) | 2.8153818 |
| 1421037_at | NM_008719 Npas2 neuronal PAS domain protein 2    | 2.8160126 |
| 1418240_at | NM_010260 Gbp2 guanylate nucleotide binding protein 2 | 2.8167157 |
| 1450767_at | NM_017464 Nedd9 neural precursor cell expressed, developmentally downregulated | 2.818371 |
| 1416250_at | NM_007570 Btg2 B-cell translocation gene 2, anti-proliferative | 2.820068 |
| 1419405_at | NM_026523 Nmb neuromedin B                       | 2.8241217 |
| 1419405_at | NM_026523 Nmb neuromedin B                       | 2.8241217 |
| 1453174_at | NA 2310076G13Rik RIKEN cDNA 2310076G13 gene      | 2.8251035 |
| 1458539_a_at | NM_011212 Ptpre protein tyrosine phosphatase, receptor type, E | 2.8308988 |
| 1437110_at | NM_026054 2810474O19Rik RIKEN cDNA 2810474O19 gene | 2.8324366 |
| 1439948_at | NA BC046401 cDNA sequence BC046401              | 2.8347723 |
| 1435292_at | NM_00108127Tbc1d4 TBC1 domain family, member 4  | 2.8375251 |
| 1435292_at | NM_00108127Tbc1d4 TBC1 domain family, member 4  | 2.8375251 |
| 1429816_at | NM_00108108Armc3 armadillo repeat containing 3   | 2.8395393 |
| 1429524_at | NM_053214 Myo1f myosin IF                        | 2.8416226 |
| 1435554_at | NM_172051Tmcc3 transmembrane and coiled coil domains 3 | 2.8505085 |
| 1436395_at | XM_139295///Card6 caspase recruitment domain family, member 6 | 2.8550065 |
| 1433801_at | NM_001004159930012K11Rik RIKEN cDNA 9930012K11 gene | 2.8648584 |
| 1452982_at | NM_010513Igf1r insulin-like growth factor I receptor | 2.8675473 |
| 1426278_at | NM_029803Ifi27 interferon, alpha-inducible protein 27 | 2.8728657 |
| 1452966_at | NM_00107988Bcl11b B-cell leukemia/lymphoma 11B    | 2.885519  |
| 1434997_at | NM_198164Cdc2l6 cell division cycle 2-like 6 (CDK2-like) | 2.8923972 |
| 1436054_at | NM_0271439130227C08Rik RIKEN cDNA 9130227C08 gene | 2.8947065 |
| 1452937_s_at | NM_025455Ccdc28b coiled coil domain containing 28B | 2.8977566 |
| 1448420_a_at | NM_00100284Fbxl12 F-box and leucine-rich repeat protein 12 | 2.8980658 |
| 1424801_at | NM_00108312Enah enabled homolog (Drosophila)    | 2.8986475 |
| 1454880_s_at | NM_138313Bmf Bcl2 modifying factor             | 2.9047115 |
| Gene ID       | Description                                                                 | Log2 Fold Change |
|--------------|------------------------------------------------------------------------------|-----------------|
| 1418540_a_at| NM_011212 Ptpre protein tyrosine phosphatase, receptor type, E               | 2.912829        |
| 1418540_a_at| NM_011212 Ptpre protein tyrosine phosphatase, receptor type, E               | 2.912829        |
| 1434642_at  | NM_053262 Hsd17b11 hydroxysteroid (17-beta) dehydrogenase 11               | 2.9154935       |
| 1460632_at  | NM_133832 Rdh10 retinol dehydrogenase 10 (all-trans)                        | 2.924398        |
| 1430561_at  | XM_00147317 Dnajb14 DnaJ (Hsp40) homolog, subfamily B, member 14            | 2.9285898       |
| 1450141_at  | NM_030239 Abcg3 ATP-binding cassette, sub-family G (WHITE), membe           | 2.929178        |
| 1455646_at  | NA 2010004M13Rik RIKEN cDNA 2010004M13 gene                                  | 2.9302657       |
| 1455646_at  | NA 2010004M13Rik RIKEN cDNA 2010004M13 gene                                  | 2.9302657       |
| 1448194_a_at| NR_001592 H19 fetal liver mRNA                                               | 2.930642        |
| 1441145_at  | NM_138755 Phf21a PHD finger protein 21A                                      | 2.9359767       |
| 1441145_at  | NM_138755 Phf21a PHD finger protein 21A                                      | 2.9359767       |
| 1429215_at  | NA 2310058N22Rik RIKEN cDNA 2310058N22 gene                                  | 2.9362686       |
| 1423213_at  | NM_018797 Plxnc1 plexin C1                                                   | 2.939296        |
| 1428029_a_at| XM_00147606 H2afv H2A histone family, member V                              | 2.9438558       |
| 1439209_at  | NM_011544 Tcf12 Transcription factor 12                                      | 2.9520903       |
| 1439209_at  | NM_011544 Tcf12 Transcription factor 12                                      | 2.9520903       |
| 1433719_at  | NM_177909 Slc9a9 solute carrier family 9 (sodium/hydrogen exchanger),      | 2.9586751       |
| 1433593_at  | NM_027166 Ypel5 yippee-5 (Drosophila)                                       | 2.9620614       |
| 1420772_a_at| NM_00107736 Tsc22d3 TSC22 domain family 3                                   | 2.9692025       |
| 1428791_at  | NM_009459 Ube2h ubiquitin-conjugating enzyme E2H                            | 2.9702346       |
| 1450339_at  | NA 2010798Bcl11b B-cell leukemia/lymphoma 11B                              | 2.9703872       |
| 1438762_at  | NA 2 days neonate thymus thymic cells cDNA, RIKEN full                      | 2.973454        |
| 1427287_s_at| NM_010586///Itpr2 inositol 1,4,5-triphosphate receptor 2                    | 2.9749343       |
| 1426971_at  | NM_023738 Ube1l ubiquitin-activating enzyme E1-like                         | 2.9751105       |
| 1438629_x_at| NM_008175 Grn granulin                                                      | 2.979433        |
| 1428585_at  | NM_134156 Actn1 actinin, alpha 1                                           | 2.9855685       |
| 1433681_x_at| NM_007601 Capn3 calpain 3                                                   | 2.9902835       |
| 1417965_at  | NM_133942 Plekha1 pleckstrin homology domain containing, family A (phc)     | 2.9918964       |
| 1432556_a_at| XM_00100272 3100002J23Rik RIKEN cDNA 3100002J23 gene                       | 2.9990044       |
| 1455425_at  | NA BB001228 expressed sequence BB001228                                    | 2.999358        |
| 1451655_at  | NM_181545 Sfn8 schlafen                                                     | 3.0041256       |
| 1437356_at  | NM_183031 Ebi2 Epstein-Barr virus induced gene 2                            | 3.0073562       |
| 1437356_at  | NM_183031 Ebi2 Epstein-Barr virus induced gene 2                            | 3.0073562       |
| 1438037_at  | XM_00147848 Herc5 hect domain and RLD 5                                     | 3.0142522       |
| Accession | Description                                      | Value  |
|-----------|--------------------------------------------------|--------|
| 1455654_at | NM_198652 6430706D22Rik RIKEN cDNA 6430706D22 gene | 3.014301 |
| 1446711_at | NA A130040G06Rik RIKEN cDNA A130040G06 gene      | 3.014661 |
| 1423902_s_at | NM_027144 Arhgef12 Rho guanine nucleotide exchange factor (GEF) 12 | 3.016188 |
| 1444416_at | NM_007681 Cenpa Centromere protein A             | 3.017757 |
| 1444416_at | NM_007681 Cenpa Centromere protein A             | 3.017757 |
| 1451542_at | NM_24186///NM_024186///NM_024272 Ssbp2 single-stranded DNA binding protein 2 | 3.0213914 |
| 1451542_at | NM_24186///NM_024186///NM_024272 Ssbp2 single-stranded DNA binding protein 2 | 3.0213914 |
| 1426970_a_at | NM_013777 Akr1c12 aldo-keto reductase family 1, member C12 | 3.029926 |
| 1423602_at | NM_009421 Traf1 Tnf receptor-associated factor 1 | 3.0377538 |
| 1443698_at | NM_0103771 Fboxo39 F-box protein 39             | 3.0392177 |
| 1424810_at | NM_175225 Tasp1 taspase, threonine aspartase 1   | 3.0413349 |
| 1422166_at | NM_020257 Clec2i C-type lectin domain family 2, member i | 3.047699 |
| 1416034_at | NM_009846 Cd24a CD24a antigen                   | 3.0542724 |
| 1423407_a_at | NM_00108143Fbln2 fibulin 2                      | 3.0601315 |
| 1448613_at | NM_007899 Ecm1 extracellular matrix protein 1   | 3.0663798 |
| 1448613_at | NM_007899 Ecm1 extracellular matrix protein 1   | 3.0663798 |
| 1448148_at | NM_008175 Grn granulin                          | 3.0672407 |
| 1416635_at | NM_020561 Smpld3a sphingomyelin phosphodiesterase, acid-like 3A | 3.07262 |
| 1425947_at | NM_008337 Ifng interferon gamma                 | 3.0727422 |
| 1416702_at | NM_009250 Serpini1 serine (or cysteine) peptidase inhibitor, clade I, meml | 3.0742495 |
| 1434522_at | NM_172051 Tmcc3 transmembrane and coiled coil domains 3 | 3.0744936 |
| 1451196_at | NM_027166 Ypel5 yippee-like 5 (Drosophila)      | 3.076811 |
| 1434034_at | NM_145475///Cerk///LOC676420 ceramide kinase///similar to Ceramide kinase (Acylsp | 3.0784986 |
| 1456446_at | XR_035190///4930523C07Rik RIKEN cDNA 4930523C07 gene | 3.0813704 |
| 1456446_at | XR_035190///4930523C07Rik RIKEN cDNA 4930523C07 gene | 3.0813704 |
| 1458263_at | NA NA Transcribed locus                         | 3.08432 |
| 1416579_a_at | NM_008532 Tacstd1 tumor-associated calcium signal transducer 1 | 3.0845208 |
| 1416690_at | NM_019581 Gtbp2 GTP binding protein 2           | 3.086114 |
| 1425374_at | NM_145226 Oas3 2'-5' oligoadenylate synthetase 3 | 3.091974 |
| 1437128_a_at | NM_177358 A630033E08Rik RIKEN cDNA A630033E08 gene | 3.0924094 |
| 1437128_a_at | NM_177358 A630033E08Rik RIKEN cDNA A630033E08 gene | 3.0924094 |
| 1452123_s_at | NM_145148 Frmd4b FERM domain containing 4B       | 3.1006014 |
| 1442160_at | NM_183224 7530404M11Rik RIKEN cDNA 7530404M11 gene | 3.1106231 |
1439477_at   NM_009458   Ube2b   ubiquitin-conjugating enzyme E2B, RAD6 homology ( 3.1191657
1418709_at   NM_009944   Cox7a1   cytochrome c oxidase, subunit VIIa 1 3.1199963
1426004_a_at   NM_009373   Tgm2   transglutaminase 2, C polypeptide 3.1237106
1426004_a_at   NM_009373   Tgm2   transglutaminase 2, C polypeptide 3.1237106
1447849_s_at   NM_001025577   Maf   avian musculoaponeurotic fibrosarcoma (v-maf) AS4 3.1299605
1447849_s_at   NM_001025577   Maf   avian musculoaponeurotic fibrosarcoma (v-maf) AS4 3.1299605
1434353_at   NM_177386   Sfmbt2   Scm-like with four mbt domains 2 3.133689
1440878_at   NM_009821   Runx1   runt related transcription factor 1 3.1340067
1440878_at   NM_009821   Runx1   runt related transcription factor 1 3.1340067
1418453_a_at   NM_009721   Atp1b1   ATPase, Na+/K+ transporting, beta 1 polypeptide 3.1400888
1456195_x_at   NM_010580   Itgb5   integrin beta 5 3.154657
1456195_x_at   NM_010580   Itgb5   integrin beta 5 3.154657
1426215_at   NM_016672   Ddc   dopa decarboxylase 3.159363
1443526_a_at   NA   Adult female vagina cDNA, RIKEN full-length enriched 3.1600199
1451426_at   NM_030150   Dhx58   DEXH (Asp-Glu-X-His) box polypeptide 58 3.1656203
1456567_x_at   NM_008175   Grn   granulin 3.1712933
1435505_at   NM_010058   Dmwd   dystrophia myotonica-containing WD repeat motif 3.1757107
1418189_s_at   NR_002847   Malat1   Metastasis associated lung adenocarcinoma transcript 3.180432
1450905_at   NM_018797   Plxnc1   plexin C1 3.1844232
1428995_at   NM_153122   Oplah   5-oxoprolinase (ATP-hydrolysing) 3.1889014
1438097_at   NM_011227   Rab20   RAB20, member RAS oncogene family 3.1901011
1438097_at   NM_011227   Rab20   RAB20, member RAS oncogene family 3.1901011
1435684_at   NM_013790///NM_176839   Abcc5   ATP-binding cassette, sub-family C (CFTR/MRP), men 3.1906037
1435684_at   NM_013790///NM_176839   Abcc5   ATP-binding cassette, sub-family C (CFTR/MRP), men 3.1906037
1422574_at   NM_010753   Mxd4   Max dimerization protein 4 3.1913583
1422574_at   NM_010753   Mxd4   Max dimerization protein 4 3.1913583
1429209_at   NM_153393   Col23a1   procollagen, type XXIII, alpha 1 3.199915
1456956_at   NM_011770   Ikzf2   IKAROS family zinc finger 2 3.200422
1436725_at   NM_00101337E130306D19Rik   RIKEN cDNA E130306D19 gene 3.2023482
1455899_x_at   NM_007707   Soc3   suppressor of cytokine signaling 3 3.2047272
1418003_at   NM_025427   1190002H23Rik   RIKEN cDNA 1190002H23 gene 3.2094023
1451461_a_at   NM_009657   Aldoc   aldolase 3, C isoform 3.2298942
1418194_at   NM_134189   Galnt10   UDP-N-acetyl-alpha-D-galactosamine:polypeptide N- &i 3.2478225
1418194_at   NM_134189   Galnt10   UDP-N-acetyl-alpha-D-galactosamine:polypeptide N- &i 3.2478225
| Gene ID      | Symbol     | Description                                                                 | Fold Change |
|-------------|------------|-----------------------------------------------------------------------------|-------------|
| 1419853_a_at| NM_00103883| P2rx7 purinergic receptor P2X, ligand-gated ion channel, 7                  | 3.2493744   |
| 1434537_at  | NM_00103864| Slco3a1 solute carrier organic anion transporter family, memb               | 3.2514791   |
| 1416242_a_at| NM_00108312| Enah enabled homolog (Drosophila)                                           | 3.2561202   |
| 1444091_a_at| NM_175486  | 6430571L13Rik RIKEN cDNA 6430571L13 gene                                    | 3.2579725   |
| 1444091_a_at| NM_175486  | 6430571L13Rik RIKEN cDNA 6430571L13 gene                                    | 3.2579725   |
| 1449815_a_at| NM_173388  | Ssbp2 single-stranded DNA binding protein 2                                 | 3.259472    |
| 1434308_at  | NM_173388  | Slc43a2 solute carrier family 43, member 2                                 | 3.2649372   |
| 1426968_a_at| NM_133832  | Rdh10 retinol dehydrogenase 10 (all-trans)                                 | 3.2666743   |
| 1421427_at  | NM_010165  | Eya2 eyes absent 2 homolog (Drosophila)                                    | 3.2750728   |
| 1436616_at  | NA         | R74740 expressed sequence R74740                                           | 3.2762744   |
| 1433575_at  | NM_009238  | Sox4 SRY-box containing gene 4                                              | 3.2766356   |
| 1433908_at  | NM_007803  | Cttn cortactin                                                              | 3.279442    |
| 1439145_at  | NM_010693  | Lck lymphocyte protein tyrosine kinase                                       | 3.2806578   |
| 1424895_at  | NM_029522  | Gpsm2 G-protein signalling modulator 2 (AGS3-like, C. elega)               | 3.282296    |
| 1458456_x_at| NM_175486  | 6430571L13Rik RIKEN cDNA 6430571L13 gene                                    | 3.2910004   |
| 1458456_x_at| NM_175486  | 6430571L13Rik RIKEN cDNA 6430571L13 gene                                    | 3.2910004   |
| 1452087_at  | NM_029495  | Epst1 epithelial stromal interaction 1 (breast)                            | 3.2968962   |
| 1448182_a_at| NM_009846  | Cd24a CD24a antigen                                                         | 3.2997613   |
| 1439669_at  | NM_175486  | 6430571L13Rik RIKEN cDNA 6430571L13 gene                                    | 3.3014696   |
| 1439669_at  | NM_175486  | 6430571L13Rik RIKEN cDNA 6430571L13 gene                                    | 3.3014696   |
| 1424834_s_at| NM_010586  | Itrp2 inositol 1,4,5-triphosphate receptor 2                               | 3.3064358   |
| 1418391_at  | NM_138755  | Phf21a PHD finger protein 21A                                                | 3.3395143   |
| 1416041_at  | NM_011361  | Sgk serum/glucocorticoid regulated kinase                                   | 3.339792    |
| 1438069_a_at| NM_148930  | Rbm5 RNA binding motif protein 5                                            | 3.3652074   |
| 1439787_at  | NM_00103883| P2rx7 purinergic receptor P2X, ligand-gated ion channel, 7                  | 3.3969686   |
| 1422705_at  | NM_022995  | Tmepai transmembrane, prostate androgen induced RNA                         | 3.3996089   |
| 1416576_at  | NM_007707  | Socs3 suppressor of cytokine signaling 3                                    | 3.4025517   |
| 1436325_at  | NM_013646  | Rora RAR-related orphan receptor alpha                                       | 3.4291737   |
| 1436325_at  | NM_013646  | Rora RAR-related orphan receptor alpha                                       | 3.4291737   |
| 1420895_at  | NM_009370  | Tgfbr1 transforming growth factor, beta receptor 1                          | 3.4370732   |
| 1428615_at  | NM_175116  | P2ry5 purinergic receptor P2Y, G-protein coupled, 5                         | 3.4632497   |
| 1456391_at  | XM_129603  | Tdrd5 tudor domain containing 5                                             | 3.4648864   |
| 1456391_at  | XM_129603  | Tdrd5 tudor domain containing 5                                             | 3.4648864   |
| 1420915_at  | NM_009283  | Stat1 signal transducer and activator of transcription 1                  | 3.4648933   |
| Gene Name       | Accession | Description                                           | Log2 Expression |
|-----------------|-----------|------------------------------------------------------|-----------------|
| Mxd4            | NM_010753 | Max dimerization protein 4                           | 3.774107        |
| NA              | NA        | Transcribed locus                                    | 3.7748344       |
| NA              | NA        | Mus musculus, clone IMAGE:4925729, mRNA              | 3.7764304       |
| Tiam1           | NM_009384 | T-cell lymphoma invasion and metastasis 1             | 3.7808611       |
| Slfn1           | NM_011407 | schlafen 1                                           | 3.796321        |
| Igf1r           | NM_010513 | insulin-like growth factor I receptor                | 3.8013225       |
| NA              | NA        | NA                                                   | 3.8209176       |
| Slfn1           | NM_011407 | schlafen 1                                           | 3.8209176       |
| IRF7            | NM_016850 | interferon regulatory factor 7                       | 3.8216372       |
| Soat1           | NM_009230 | sterol O-acyltransferase 1                           | 3.82477         |
| IFIT1           | NM_008331 | interferon-induced protein with tetratricopeptide   | 3.8401856       |
| Malat1          | NR_002847 | Metastasis associated lung adenocarcinoma transcript | 3.8413575       |
| OSGIN1          | NM_027950 | oxidative stress induced growth inhibitor 1          | 3.8498125       |
| OSGIN1          | NM_027950 | oxidative stress induced growth inhibitor 1          | 3.8498125       |
| PTK2            | NM_007982 | PTK2 protein tyrosine kinase 2                       | 3.8675737       |
| PTK2            | NM_007982 | PTK2 protein tyrosine kinase 2                       | 3.8675737       |
| DENND1C         | NM_153551 | DENN/MADD domain containing 1C                       | 3.880358        |
| RIKEN cDNA 2810043O03Rik | 2810043O03Rik | RIKEN cDNA 2810043O03 gene                          | 3.881163        |
| RIKEN cDNA 2610019F03Rik | 2610019F03Rik | RIKEN cDNA 2610019F03 gene                          | 3.9294214       |
| RIKEN cDNA 2100000016644 | XM_00100087 | predicted gene, OTTMUSG00000016644                  | 3.9483805       |
| GZMA            | NM_010370 | granzyme A                                           | 3.9559665       |
| TRIM16          | NM_053169 | tripartite motif protein 16                          | 3.9582136       |
| NA              | NA        | NA                                                   | 3.9811513       |
| RIKEN cDNA 2310043N10Rik | 2310043N10Rik | RIKEN cDNA 2310043N10 gene                         | 4.0060024       |
| RIKEN cDNA 2610019F03Rik | 2610019F03Rik | RIKEN cDNA 2610019F03 gene                          | 4.0135336       |
| RNF167          | NM_027835 | ring finger protein 167                              | 4.022375        |
| RIKEN cDNA 2100000016644 | XM_00100087 | predicted gene, OTTMUSG00000016644                  | 4.0309815       |
| STC1            | NM_009285 | stanniocalcin 1                                      | 4.041147        |
| STC1            | NM_009285 | stanniocalcin 1                                      | 4.041147        |
| RIKEN cDNA 2310010M24Rik | 2310010M24Rik | RIKEN cDNA 2310010M24 gene                         | 4.0502625       |
| RIKEN cDNA 2310010M24Rik | 2310010M24Rik | RIKEN cDNA 2310010M24 gene                         | 4.0502625       |
| RIKEN cDNA 4930566A11Rik | 4930566A11Rik | RIKEN cDNA 4930566A11 gene                         | 4.056838        |
| RIKEN cDNA 4930566A11Rik | 4930566A11Rik | RIKEN cDNA 4930566A11 gene                         | 4.056838        |
| Gene Symbol | Accession Number | Description                                                                 | Expression Value |
|-------------|-----------------|-----------------------------------------------------------------------------|------------------|
| 1417164_at  | NM_022019       | Dusp10, dual specificity phosphatase 10                                      | 4.0877404        |
| 1417214_at  | NM_00108255     | Rab27b, member RAS oncogene family                                           | 4.120146         |
| 1427526_at  | NM_00108124     | Vcan, versican                                                              | 4.1487126        |
| 1417533_a_at| NM_010580       | Itgb5, integrin beta 5                                                      | 4.166735         |
| 1417533_a_at| NM_010580       | Itgb5, integrin beta 5                                                      | 4.166735         |
| 1422706_at  | NM_022995       | Tmepai, transmembrane, prostate androgen induced RNA                        | 4.16896          |
| 1421168_at  | NM_030239       | Abcg3, ATP-binding cassette, sub-family G (WHITE), membe                    | 4.173117         |
| 1444405_at  | XR_035437       | E030037K03Rik, RIKEN cDNA E030037K03 gene                                    | 4.1836247        |
| 1451998_at  | NM_175225       | Tasp1, threonine aspartase 1                                                | 4.1839905        |
| 1449757_x_at| NM_00104322     | Dntt, deoxynucleotidyltransferase, terminal                                 | 4.1924505        |
| 1454809_at  | NM_172495       | Ncoa7, nuclear receptor coactivator 7                                       | 4.243057         |
| 1437540_at  | NM_134160       | Mcoln3, mucolipin 3                                                        | 4.26403          |
| 1418195_at  | NM_134189       | Galnt10, UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-α                 | 4.3026843        |
| 1438027_at  | NA              | NA                                                                          | 4.3092585        |
| 1418398_a_at| NM_020286       | Tspan32, tetraspanin 3                                                      | 4.356996         |
| 1451905_a_at| NM_010846///    | Myxovirus (influenza virus) resistance 1                                   | 4.3734965        |
| 1416871_at  | NM_007403       | Adam8, a disintegrin and metallopeptidase domain 8                          | 4.396884         |
| 1452141_a_at| NM_00104261     | Sepp1, selenoprotein P, plasma, 1                                           | 4.410316         |
| 1436562_at  | NM_172689       | Ddx58, DEAD (Asp-Glu-Ala-Asp) box polypeptide 58                           | 4.4187574        |
| 1454799_at  | NM_172715       | A230097K15Rik, RIKEN cDNA A230097K15 gene                                    | 4.422356         |
| 1454799_at  | NM_172715       | A230097K15Rik, RIKEN cDNA A230097K15 gene                                    | 4.422356         |
| 1449455_at  | NM_010407       | Hck, hemopoietic cell kinase                                                | 4.4658775        |
| 1439036_a_at| NM_009721       | Atp1b1, ATPase, Na+/K+ transporting, beta 1 polypeptide                     | 4.544981         |
| 1452092_at  | NM_029935       | 4631426J05Rik, RIKEN cDNA 4631426J05 gene                                   | 4.548617         |
| 1452092_at  | NM_029935       | 4631426J05Rik, RIKEN cDNA 4631426J05 gene                                   | 4.548617         |
| 1417741_at  | NM_133198       | Pygl, liver glycogen phosphorylase                                          | 4.552726         |
| 1433769_at  | NM_146228       | Als2cl, ALS2 C-terminal like                                                | 4.5756583        |
| 1438802_at  | NA              | NA                                                                          | 4.575843         |
| 1418195_at  | NM_134189       | Galnt10, UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-α                 | 4.3026843        |
| Gene symbol | Description | Log2 Fold Change |
|-------------|-------------|-----------------|
| Traf1       | Tnf receptor-associated factor 1 | 4.599425 |
| Tgm2        | Transglutaminase 2, C polypeptide | 4.671665 |
| Spp1        | Secreted phosphoprotein 1 | 4.677339 |
| Gpr177      | G protein-coupled receptor 177 | 4.691505 |
| Ddx58       | DEAD (Asp-Glu-Ala-Asp) box polypeptide 58 | 4.712525 |
| Rtp4        | Receptor transporter protein 4 | 4.717993 |
| XM_00148116 | RIKEN cDNA 1190002F15 gene | 4.759199 |
| LOC100047138| Tescalcin | 4.779107 |
| Zbp1        | Z-DNA binding protein 1 | 4.878631 |
| LOC100048304| Hypothetical protein LOC100048346///Pyhin1 | 5.11363 |
| Spsb1       | SplA/ryanodine receptor domain and SOCS box conta | 5.023773 |
| B230342M21Rik| RIKEN cDNA B230342M21 gene | 4.979382 |
| Marcks      | Myristoylated alanine rich protein kinase C substrate | 4.979709 |
| Tgm2        | Transglutaminase 2, C polypeptide | 5.014094 |
| Bank1       | B-cell scaffold protein with ankyrin repeats 1 | 5.015046 |
| Spsb1       | SplA/ryanodine receptor domain and SOCS box conta | 5.023773 |
| Tgm2        | Transglutaminase 2, C polypeptide | 5.029712 |
| Pik3ip1     | Phosphoinositide-3-kinase interacting protein 1 | 5.074519 |
| LOC100048346///Pyhin1 | Hypothetical protein LOC100048304///pirin and HIN | 5.11363 |
| Spsb1       | SplA/ryanodine receptor domain and SOCS box conta | 5.023773 |
| Tgm2        | Transglutaminase 2, C polypeptide | 5.029712 |
| Isg20       | Interferon-stimulated protein | 5.168771 |
| Stat1       | Signal transducer and activator of transcription 1 | 5.192079 |
| Nrp1        | Neuropilin 1 | 5.202850 |
| Rgs2        | Regulator of G-protein signaling 2 | 5.227801 |
| Rgs2        | Regulator of G-protein signaling 2 | 5.227801 |
| Dntt        | Deoxynucleotidyltransferase, terminal | 5.228234 |
| Gene ID     | Entrez ID | Gene Symbol | Description                                           | Score   |
|------------|-----------|-------------|-------------------------------------------------------|---------|
| 1419247_at | NM_009061 | Rgs2        | regulator of G-protein signaling 2                    | 5.2907004 |
| 1419247_at | NM_009061 | Rgs2        | regulator of G-protein signaling 2                    | 5.2907004 |
| 1423754_at | NM_025378 | Ifitm3      | interferon induced transmembrane protein 3            | 5.369401 |
| 1428332_at | NM_178149 | Pik3ip1     | phosphoinositide-3-kinase interacting protein 1        | 5.378139 |
| 1418912_at | NM_026162 | Plxdc2      | plexin domain containing 2                            | 5.4558125 |
| 1419711_at | NM_009854 | Cd7         | CD7 antigen                                           | 5.4680777 |
| 1419711_at | NM_009854 | Cd7         | CD7 antigen                                           | 5.4680777 |
| 1437636_at | XM_001477431///XM_001480713 | LOC623121 | similar to Interferon-activatable protein 203 (Ifi-203) | 5.490834 |
| 1456028_x_at | NM_008538 | Marcks      | Myristoylated alanine rich protein kinase C substrate  | 5.6197557 |
| 1456028_x_at | NM_008538 | Marcks      | Myristoylated alanine rich protein kinase C substrate  | 5.6197557 |
| 1427982_s_at | NM_00100551 | Synve2   | synaptic nuclear envelope 2                            | 5.6416993 |
| 1449856_at | NM_022881 | Rgs18       | regulator of G-protein signaling 18                   | 5.68141 |
| 1423563_at | NM_030890 | Prrt1       | proline-rich transmembrane protein 1                  | 5.7127175 |
| 1423563_at | NM_030890 | Prrt1       | proline-rich transmembrane protein 1                  | 5.7127175 |
| 1448233_at | NM_011170 | Prnp        | prion protein                                         | 5.714117 |
| 1420398_at | NM_022881 | Rgs18       | regulator of G-protein signaling 18                   | 5.857161 |
| 1451453_at | NM_010019 | Dapk2       | death-associated kinase 2                             | 5.9778476 |
| 1444426_at | NM_001033535F730031O20Rik | RIKEN cDNA F730031O20 gene | RIKEN cDNA F730031O20 gene | 6.050656 |
| 1444426_at | NM_001033535F730031O20Rik | RIKEN cDNA F730031O20 gene | RIKEN cDNA F730031O20 gene | 6.050656 |
| 1418672_at | NM_013778 | Akr1c13     | aldo-keto reductase family 1, member C13               | 6.3306518 |
| 1434473_at | NM_00108093Slc16a5 | solute carrier family 16 (monocarboxylic acid transpo | 6.3599477 |
| 1425895_a_at | NM_010495 | Id1         | inhibitor of DNA binding 1                            | 6.371904 |
| 1425895_a_at | NM_010495 | Id1         | inhibitor of DNA binding 1                            | 6.371904 |
| 1434210_s_at | NM_008377 | Lrig1       | leucine-rich repeats and immunoglobulin-like domain    | 6.379493 |
| 1433678_at | NM_178911 | Pld4        | phospholipase D family, member 4                      | 6.4253993 |
| 1428595_at | NM_028878 | Slc6a19     | solute carrier family 6 (neurotransmitter transporter) | 6.4503317 |
| 1428595_at | NM_028878 | Slc6a19     | solute carrier family 6 (neurotransmitter transporter) | 6.4503317 |
| 1448327_at | NM_033268 | Actn2       | actinin alpha 2                                       | 6.512194 |
| 1448327_at | NM_033268 | Actn2       | actinin alpha 2                                       | 6.512194 |
| 1423824_at | NM_026582 | Gpr177      | G protein-coupled receptor 177                        | 6.5524063 |
| 1429951_at | NM_024186///Ssbp2 | single-stranded DNA binding protein 2 | 6.667207 |
| 1424034_at | NM_013646 | Rora        | RAR-related orphan receptor alpha                      | 6.6847773 |
| 1424034_at | NM_013646 | Rora        | RAR-related orphan receptor alpha                      | 6.6847773 |
| 1452343_at | NM_172631 | D18Ertd653e | DNA segment, Chr 18, ERATO Doi 653, expressed         | 6.8806086 |
| Probe ID | Description                                                                 | Log2 Fold Change |
|----------|-----------------------------------------------------------------------------|------------------|
| 1452343_at | NM_172631 D18Ertd653e DNA segment, Chr 18, ERATO Doi 653, expressed         | 6.8806086        |
| 1417460_at | NM_030694 Ifitm2 interferon induced transmembrane protein 2                  | 7.019765         |
| 1456700_x_at | NM_008538 Marcks myristoylated alanine rich protein kinase C substrate      | 7.03508          |
| 1417481_at | NM_016894 Ramp1 receptor (calcitonin) activity modifying protein 1           | 7.0367956        |
| 1435330_at | NM_00102472 BC094916///LOC100///cDNA sequence BC094916///hypothetical protein LOC | 7.0626736        |
| 1434864_at | NM_153578 Nipa1 non imprinted in Prader-Willi/Angelman syndrome 1           | 7.1583576        |
| 1452794_x_at | NM_001034721///NM_175026///XM_001479976///XR_033902 || LOC100048304///LOC637605///Pyhin1  | 7.0626736        |
| 1452794_x_at | NM_001034721///NM_175026///XM_001479976///XR_033902 || LOC100048304///LOC637605///Pyhin1  | 7.0626736        |
| 1434378_a_at | NM_010753 Mxd4 Max dimerization protein 4                                   | 7.8976903        |
| 1434378_a_at | NM_010753 Mxd4 Max dimerization protein 4                                   | 7.8976903        |
| 1449893_s_at | NM_008377 Lrig1 leucine-rich repeats and immunoglobulin-like domain         | 8.148404         |
| 1424354_at | NM_197986 Tmem140 transmembrane protein 140                                | 8.321398         |
| 1455009_at | NM_007754///Cpd///LOC10004678:carboxypeptidase D///similar to carboxypeptidase D | 8.735317         |
| 1455442_at | NM_028878 Slc6a19 solute carrier family 6 (neurotransmitter transporter)    | 8.909474         |
| 1456060_at | NM_00102557 LOC10004719///Ma avian musculoaponeurotic fibrosarcoma (v-maf) AS4: | 9.870909         |
| 1420812_at | NM_019572 Hdac7a histone deacetylase 7A                                    | 9.957564         |
| 1449216_at | NM_008399///Itgae integrin, alpha E, epithelial-associated                  | 11.92885         |
| 1449216_at | NM_008399///Itgae integrin, alpha E, epithelial-associated                  | 11.92885         |
| 1417654_at | NM_011521 Sdc4 syndecan 4                                                   | 11.956839        |
| 1417654_at | NM_011521 Sdc4 syndecan 4                                                   | 11.956839        |
| 1415972_at | NM_008538 Marcks myristoylated alanine rich protein kinase C substrate     | 12.325885        |
| 1415971_at | NM_008538 Marcks myristoylated alanine rich protein kinase C substrate     | 16.68242         |
| 1447541_s_at | NM_008399///Itgae integrin, alpha E, epithelial-associated                 | 18.798296        |
| 1447541_s_at | NM_008399///Itgae integrin, alpha E, epithelial-associated                 | 18.798296        |
| 1448261_at | NM_009864 Cdh1 cadherin 1                                                  | 20.238266        |
| 1448261_at | NM_009864 Cdh1 cadherin 1                                                  | 20.238266        |
| 1425923_at | NM_008709 Mycn v-myc myelocytomatosis viral related oncogene, neur         | 69.48236         |
Stable Isotope Labelling of CTLs In Cell Culture

Spleens were obtained from 8 to 26 weeks-old mice, mashed in cell strainers, disaggregated and red blood cells were lysed. Splenocytes were activated for 48h with 100ng/ml LCMV TCR-specific peptide gp33-41. After the initial 48 hours medium was replaced with SILAC medium (see below).

**SILAC media:** The SILAC media used were customized RPMI media (Dundee Cell Products), supplemented with 300 mg/l L-glutamate, L-proline 200 mg/l final and L-arginine 84 mg/l, 10% dialysed FCS with a 10-kDa cutoff, 50 units/ml penicillin-G, 50 µg/ml streptomycin and 50µM β-mercaptoethanol. The following arginine and lysine isotopes have been used:

- R0K0    L-[12C6, 14N4]arginine (R0) and L-[12C6, 14N2]lysine (K0)
- R6K4    L-[13C6,14N4]arginine (R6) and L-[12C6, 2H4, 14N2]lysine (K4)
- R10K8   L-[13C6, 15N4]arginine (R10) and L-[13C6, 15N2]lysine (K8)

**Preparation of cell lysates**

CTLs differentially labelled in SILAC media were stimulated with 400ng/ml LCMV TCR-specific peptide gp33-41 or left unstimulated. After TCR stimulation, cells were combined and lysed in 1 ml HEPES lysis buffer for SILAC (see below) per 10^6 cells for 30 min on ice. 2*10^8 cells in total were used (1*10^8 each condition) to obtain about 30mg of protein prior to phosphopeptide enrichment. The protein was precipitated with 10% v/v final Trichloroacetic acid for 15 min on ice, pelleted at 3000 rpm for 10 min at 4°C and washed six times with water to remove TCA. To solubilise the protein pellet 900 µl urea buffer and a dounce homogenizer were used. The solution was incubated for two hours at room temperature on an IP shaker and the pH was adjusted to pH 8.5 with
ammonium hydroxide when necessary. For carboxamidomethylation of cysteine thiol groups 100 µl of 500 mM iodoacetamide were used to yield a final concentration of 50 mM. This reaction was conducted in the dark for one hour at room temperature. The solution was diluted to 8 ml with water and the pH was adjusted to pH 9 with ammonium hydroxide.

**Preparation of phosphopeptides from cell lysates.**

100 µg LysC endopeptidase was added to the reduced and alkylated cell lysates and incubated at room temperature with shaking. After 4 hrs, 100 µg trypsin were added and incubated at 30°C for four hours and two more aliquots of 100 µg were added after 4 hours incubation each. The pH of the digest was reduced to 2-3 with Trifluoroacetic acid and undigested protein debris and precipitated proteins were removed by centrifugation. The proteolytic digests were desalted on C\textsubscript{18} SepPak cartridges and fractionated by Hydrophilic Liquid Interaction Chromatography (HILIC) essentially as described in \textsuperscript{1}. The desalted digest was dried under vacuum and then resuspended in 0.8ml 80% buffer B (acetonitrile/0.1% TFA): 20% buffer A (0.1% TFA in water) and injected onto a TSK amide 80 column (250 x 4.6mm) equilibrated in the same solvent at 0.6ml/min. The column was developed with the following discontinuous gradient of acetonitrile at the same flow rate and 2min fractions were collected.

| Time/ min | % A | % B |
|-----------|-----|-----|
| 0         | 20  | 80  |
| 20        | 20  | 80  |
| 30        | 30  | 70  |
| 60        | 40  | 60  |
| 65        | 100 | 0   |
| 70        | 100 | 0   |
| 75        | 20  | 80  |
Fractions collected from 30-65 min were further enriched using IMAC resin (Phos-Select, Sigma) essentially as described in ¹. 100µl of resin was used for each fraction and the phosphopeptides were eluted with 200µl 0.4M NH₄OH followed by 200µl 0.2M NH₄OH/50% acetonitrile. The eluates were dried and stored at -20°C until analysis on an Orbitrap mass spectrometer.

**14-3-3 Affinity Purification**

6-Aminocaproic acid N-hydroxysuccinimide ester-activated-Sepharose® 4B (CH-Sepharose 4B, Roche) was used to couple the two *S.cerevisiae* 14-3-3 isoforms BMH1 and BMH2 to sepharose beads following manufacturer’s instructions.

CTLs were treated with gp33-41 or left untreated and mixed together after a washing step with PBS. A total of 150 million cells were lysed in 15 ml HEPES lysis buffer for SILAC and the solution was clarified by centrifugation at 20,000g for 20 min. The supernatant and 200 µl of 14-3-3 Sepharose 1:1 slurry were combined and incubated for one hour at 4°C with inversion. The beads were spun down at 3000 rpm for 2 min and washed 5 times with high salt 14-3-3 wash buffer and further followed by 2 washes with low salt 14-3-3 wash buffer. Binding of 14-3-3 ligands to the 14-3-3 matrix was interrupted by adding 80 µl 1x reducing sample buffer and 10 min at 70°C incubation. The beads were removed by centrifugation.

**Proteolytic digestion of proteins ‘in gel’**

14-3-3 affinity enriched proteins in sample buffer and whole lysate extracts for protein expression controls were separated on a SDS-PAGE, stained with Colloidal Coomassie blue and cut into 5-26 slices. Gel sections were digested with trypsin as described previously ².
Liquid Chromatography – Mass Spectrometry (LC-MS)

The peptide mixture was separated by nanoscale C_{18} reverse-phase liquid chromatography (Ultimate 3000 nLC (Dionex)) coupled online to a Linear Trap Quadrupole (LTQ)-Orbitrap mass spectrometer (LTQ-Orbitrap XL for three experiments and LTQ-Orbitrap Velos for the fourth one; Thermo Fisher Scientific). Each sample was injected in 1% formic acid, washed onto the column with HPLC Buffer C and eluted with a flow of 0.3 µl/min under usage of the following buffer gradient

| Time / min | % A | % B |
|------------|-----|-----|
| 0          | 95  | 5   |
| 0          | 95  | 5   |
| 3          | 95  | 5   |
| 68         | 65  | 35  |
| 70         | 10  | 90  |
| 80         | 10  | 90  |
| 81         | 95  | 5   |
| 100        | 95  | 5   |

The eluting peptide solutions were automatically (online) electrosprayed into the mass spectrometer via a nanoelectrospray ion source (Proxeon Biosystems).

The mass spectrometers were operated in positive ion mode and used in data-dependent acquisition modes. A full scan (FT-MS) was acquired at a target value of 1,000,000 ions with resolution R = 60,000 over mass range of 335-1800 amu. The top five most intense ions were selected for fragmentation in the LTQ Orbitrap XL, whereas in the LTQ Orbitrap Velos the top ten most intense ions were selected. Fragmentation in the LTQ was induced by collision-induced dissociation (CID) with a target value of 10,000 ions.

For accurate mass measurement, the "lock mass" function (lock mass = 445.120036 Da) was enabled for MS scan modes. To improve the fragmentation of phosphopeptides, the multistage activation algorithm in the Xcalibur software was enabled for each MS/MS
spectrum using the neutral loss values of 48.99, 32.66 and 24.50 m/z units. Former target ions selected for MS/MS were dynamically excluded for 300 s.

General mass spectrometric conditions were as follows: spray voltage, 1.0-2.5 kV; no sheath and auxiliary gas flow; ion transfer tube temperature, 150–180 °C; normalized collision energy (35%) using wide band activation mode for MS². The isolation width was set to 2amu for IT-MS/MS. Ion selection thresholds were 600 counts for MS². An activation of q = 0.25 and activation time of 30 ms were applied in MS² acquisitions. The fill time for FTMS was set to 1000 ms and for ITMS to 150 ms.

**Mass Spectrometric Data Analysis by MaxQuant**

MaxQuant ³ version 1.0.13.13 has been used to process Raw MS spectra. Quant.exe, the first unit of MaxQuant was used for feature detection and peptide quantification. The derived peak list was searched with Mascot demon version 2.2.2 in the Mascot search engine (Matrix Science, London, UK) against the International Protein Index (IPI) mouse protein decoy database version 3.52 containing 111,130 protein sequences in total consisting of 55,435 unique protein sequences, the same amount of reversed sequences and 260 commonly observed contaminants. Carbamidomethylation of cysteine residues was set as a fixed modification. Variable modifications for the phosphoproteome mapping data sets included oxidation (Met), N-acetylation (protein), and phosphorylation (Ser, Thr, and Tyr). Full tryptic specificity (trypsin/P) was required, and up to two missed cleavages was allowed. The initial mass tolerances of the precursor ion and fragment ions were set to 7 ppm and 0.5 Da, respectively.

The derived peptides and their assigned proteins were further processed in Identify.exe, the second module of MaxQuant. The posterior error probability and false discovery rate
(FDR) were used for statistical evaluation. All phosphopeptide identifications suggested by Mascot were filtered in MaxQuant by applying thresholds on peptide length, mass error, SILAC state, and Mascot score. We accepted peptides based on the criteria that the number of forward hits in the database was at least 100-fold higher than the number of reversed database hits (incorrect peptide sequences); this gives an estimated FDR of less than 1%. To achieve highly reliable identifications, the following criteria were used: maximal peptide FDR of 0.01 and minimal peptide length of 6. The default setting of the maximal peptide posterior error probability of 1 was used.

For quantitation in MaxQuant, peptide ratios were calculated according to the intensities of all centroids of each of the SILAC forms. Systematic deviations, such as mixing errors, are corrected by the quantitation algorithm in the MaxQuant software by normalizing all peptide ratios such that the mean of all log-transformed ratios are zero. To robustly represent the ratio of a peptide being quantified multiple times, the median value was chosen. For a first line of result browsing and downstream bioinformatics Excel spreadsheets and the programming language R was used. To derive biologically robust regulation, a 2-fold change (ratio ≥2 or ratio ≤0.5) in case of phosphopeptide enrichment screens and significanceB value of the MaxQuant software for 14-3-3 affinity purification screens was chosen. Ingenuity Pathway Analysis (Ingenuity® Systems, http://www.ingenuity.com) was used to gather informations about canonical pathways and molecular/ cellular functions.

Media composition

**HEPES lysis buffer:**
HEPES 50mM pH 7.4, NP-40 1%, NaCl 150 mM, EDTA and EGTA 1mM, NaF 10 mM, 
Na$_3$VO$_4$ 1mM, Na$_4$P$_2$O$_7$ 5 mM, Iodoacetamide 10 mM, PMSF 0.2 mM, Benzamidine 1 
mM, DTT 1mM, Complete protease inhibitor tablet (Roche) 1 in 10ml, phosphatase 
inhibitor cocktail 1 and 2 at 1:100 v/v and calyculinA at 100 ng/ml was added. 
Urea buffer: 8M Urea, 20mM DTT, 200mM Triethylammoniumbicarbonate pH 8.5 
HILIC buffer A: 0.1% TFA 
HILIC buffer B: 99.9% acetonitrile, 0.1% TFA 
HPLC Buffer A: 2% acetonitrile in 0.01% formic acid 
HPLC Buffer B: 90% acetonitrile in 0.08% formic acid 
HPLC Buffer C: 0.05% trifluoroacetic acid 
High Salt 14-3-3 wash buffer: 25 mM Tris pH 7.5, 500 mM NaCl, 25 mM NaF 
Low Salt 14-3-3 wash buffer: 25 mM Tris pH 7.5, 100 mM NaCl, 25 mM NaF 

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