

Table S1. List of the human E3s

| Category | Gene | Name | Symbol | Aliases | NM | NP |
|--------------------|-----------------|--|--------------|---|-------------------------------|------------------------|
| ZnF A26 | LL_54469 | zinc finger, AN1-type domain 6 | ZFAND6 | AWP1 ZA20D3 ZFAND5B | NM 019006 | NP 061879 |
| ZnF A25 | LL_7763 | zinc finger, AN1-type domain 5 | ZFAND5 | ZA20D2 ZFAND5A ZNF216 | NM 006007 | NP 005998 |
| ZnF A24 | LL_60685 | zinc finger, AN1-type domain 3 | ZFAND3 | FLJ13222 TEX27 | NM 021943 | NP 068762 |
| ZnF A23 | LL_7128 | tumor necrosis factor, alpha-induced protein 3 | TNFAIP3 | A20 OTUD7C TNFA1P2 | NM 006290 | NP 006281 |
| ZnF A22 | LL_27342 | RAB guanine nucleotide exchange factor (GEF) 1 | RABGEF1 | FLJ32302 RABEX5 rabex-5 | NM 014504 | NP 055319 |
| ZnF A21 | LL_154881 | potassium channel tetramerisation domain containing 7 | KCTD7 | FLJ32069 | NM 153033 | NP 694578 |
| ZnF A20 | LL_56957 | OTU domain containing 7B | OTUD7B | CEZANNE ZA20D1 | NM 020205 | NP 064590 |
| ZnF A20 | LL_161725 | OTU domain containing 7A | OTUD7A | C15orf16 CEZANNE2 OTUD7 | NM 130901 | NP 570971 |
| ZnF A20 | LL_93550 | AN1, ubiquitin-like, homolog (Xenopus laevis) | ANUBL1 | FLJ40185 ZFAND4 | NM 174890 | NP 777550 |
| U box | LL_22888 | U-box domain containing 5 | UBOX5 | KIAA0860,RNF37,UBCE7IP5,UIP5 | NM 014948 NM 199415 | NP 055763 NP 955447 |
| U box | LL_10273 | STIP1 homology and U-box containing protein 1 | STUB1 | CHIP,HSPABP2_NY-CO-7,SDCCAG7,UBOX1 | NM 005861 | NP 005852 |
| U box | LL_9354 | ubiquitination factor E4A (UFD2 homolog, yeast) | UBE4A | E4.KIAA0126,MGC133315,UBOX2,UFD2 | NM 004788 | NP 004779 |
| U box | LL_23759 | peptidylprolyl isomerase (cyclophilin)-like 2 | PPIL2 | CYC4,CYP60,FLJ39930 | NM 014337 NM 148175 NM 148176 | NP 055152 NP 680480 NP |
| U box | LL_10277 | ubiquitination factor E4B (UFD2 homolog, yeast) | UBE4B | E4.HDNB1,KIAA0684,UBOX3,UFD2 | NM 006048 | NP 006039 |
| U box | LL_51070 | nitric oxide synthase interacting protein | NOSIP | CGI-25 | NM 015953 | NP 057037 |
| U box | LL_151525 | WD repeat, sterile alpha motif and U-box domain containing 1 | WDSUB1 | FLJ36175,UBOX6,WDSAM1 | NM 152528 | NP 689741 |
| U box | LL_150739 | Keratin-8 | LOC150739 | similar to Cytokeratin-8, CK-8 | XM 092267 | XP 092267 |
| U box | LL_27339 | PRP19/PSO4 pre-mRNA processing factor 19 homolog | PRPF19 | NMP200,PRP19,PSO4,SNEV,UBOX4,hPSO4 | NM 014502 | NP 055317 |
| SOCS box | LL_9021 | suppressor of cytokine signaling 3 | SOCS3 | ATOD4,CIS3,Cish3,MGC71791,SOCS-3,SSI-3,SSI3 | NM 003955 | NP 003946 |
| SOCS box | LL_9655 | suppressor of cytokine signaling 5 | SOCS5 | CIS6,CISH6,Cish5,KIAA0671,SOCS-5 | NM 014011 NM 144949 | NP 057199 NP 665862 |
| SOCS box | LL_8835 | suppressor of cytokine signaling 2 | SOCS2 | CIS2,Cish2,SOCS-2,SSI-2,SSI2,STATI2 | NM 003877 | NP 003868 |
| SOCS box | LL_57799 | RAB40C, member RAS oncogene family | RAB40C | RARL,RASL8C | NM 021168 | NP 066991 |
| SOCS box | LL_140462 | ankyrin repeat and SOCS box-containing 9 | ASB9 | DKFZp564L0862,FLJ20636,MGC4954 | NM 001031739 NM 024087 | NP 001026909 NP 076992 |
| SOCS box | LL_1154 | cytokine inducible SH2-containing protein | CISH | CIS,CIS-1,G18,SOCS | NM 145071 | NP 659508 |
| SOCS box | LL_51130 | ankyrin repeat and SOCS box-containing 3 | ASB3 | ASB-3,FLJ10123,FLJ10421 | NM 016115 NM 145863 | NP 057199 NP 665862 |
| SOCS box | LL_8651 | suppressor of cytokine signaling 1 | SOCS1 | CIS1,CISH1,JAB,SOCS-1,SSI-1,SSI1,TIP3 | NM 003745 | NP 003736 |
| SOCS box | LL_10966 | RAB40B, member RAS oncogene family | RAB40B | FLJ42385,RAR,SEC4L | NM 006822 | NP 006813 |
| SOCS box | LL_9306 | suppressor of cytokine signaling 6 | SOCS6 | CIS4,HSPC060,SOCS4,SSI4,STAI4,STATI4 | NM 004232 | NP 004223 |
| SOCS box | LL_122809 | suppressor of cytokine signaling 4 | SOCS4 | DKFZp686J1568,SOCS7 | NM 080867 NM 199421 | NP 543143 NP 955453 |
| SOCS box | LL_30837 | suppressor of cytokine signaling 7 | SOCS7 | NAP4 | NM 014598 | NP 055413 |
| SOCS box | LL_51676 | ankyrin repeat and SOCS box-containing 2 | ASB2 | ASB-2,MGC40044 | NM 016150 | NP 057234 |
| SOCS box | LL_55884 | WD repeat and SOCS box-containing 2 | WSB2 | MGC10210,SBA2 | NM 018639 | NP 061109 |
| SOCS box | LL_7428 | von Hippel-Lindau tumor suppressor | VHL | HRCA1,RCA1,VHL1 | NM 000551 NM 198156 | NP 000542 NP 937799 |
| SOCS box | LL_80176 | splA/ryanodine receptor domain and SOCS box containing 1 | SPSB1 | SSB-1,SSB1 | NM 025106 | NP 079382 |
| SOCS box | LL_26118 | WD repeat and SOCS box-containing 1 | WSB1 | SWIP1,WSB-1 | NM 015626 NM 134265 | NP 056441 NP 599027 |
| SOCS box | LL_51666 | ankyrin repeat and SOCS box-containing 4 | ASB4 | ASB-4,MGC142039,MGC142041 | NM 016116 NM 145872 | NP 057200 NP 665879 |
| SOCS box | LL_140458 | ankyrin repeat and SOCS box-containing 5 | ASB5 | - | NM 080874 | NP 543150 |
| SOCS box | LL_90864 | splA/ryanodine receptor domain and SOCS box containing 3 | SPSB3 | SSB3 | NM 080861 | NP 543137 |
| SOCS box | LL_140460 | ankyrin repeat and SOCS box-containing 7 | ASB7 | FLJ22551 | NM 024708 NM 198243 | NP 078984 NP 937886 |
| SOCS box | LL_140459 | ankyrin repeat and SOCS box-containing 6 | ASB6 | FLJ20548,MGC1024 | NM 017873 NM 177999 | NP 060343 NP 821066 |
| SOCS box | LL_140461 | ankyrin repeat and SOCS box-containing 8 | ASB8 | FLJ21255,MGC5540,PP14212 | NM 024095 | NP 077000 |
| SOCS box | LL_401036 | ankyrin repeat and SOCS box-containing 18 | ASB18 | ASB-18,DKFZp31311130 | NM 212556 | NP 997721 |
| SOCS box | LL_286526 | Ras-like GTPase-like | LOC286526 | RAR2 | NM 001031834 | NP 001027004 |
| SOCS box | LL_140825 | neuralized homolog 2 (Drosophila) | NEURL2 | C20orf163,MGC125934,MGC125935,Ozz-E3 | NM 080749 | NP 542787 |
| SOCS box | LL_142684 | RAB40A, member RAS oncogene family | RAB40A | MGC142061,RAR2A,Rar-2 | NM 080879 | NP 543155 |
| SOCS box | LL_142685 | ankyrin repeat and SOCS box-containing 15 | ASB15 | DKFZp779M1258,FLJ43370 | NM 080928 | NP 563616 |
| SOCS box | LL_79754 | ankyrin repeat and SOCS box-containing 13 | ASB13 | FLJ13134,MGC19879 | NM 024701 | NP 078977 |
| SOCS box | LL_136371 | ankyrin repeat and SOCS box-containing 10 | ASB10 | - | NM 080871 | NP 543147 |
| SOCS box | LL_140456 | ankyrin repeat and SOCS box-containing 11 | ASB11 | DKFZp779E2460,MGC119168,MGC119169 | NM 001012428 NM 080873 | NP 001012428 NP 543149 |
| SOCS box | LL_84727 | splA/ryanodine receptor domain and SOCS box containing 2 | SPSB2 | GRCC9,MGC2519,SSB-2,SSB2 | NM 032641 | NP 116030 |
| SOCS box | LL_92369 | splA/ryanodine receptor domain and SOCS box containing 4 | SPSB4 | SSB-4,SSB4 | NM 080862 | NP 543138 |
| SOCS box | LL_56995 | tubby like protein 4 | TULP4 | KIAA1397,TUSP | NM 001007466 NM 020245 | NP 001007467 NP 064630 |
| SOCS box | LL_92591 | ankyrin repeat and SOCS box-containing 16 | ASB16 | FLJ30165,MGC141876,MGC141877 | NM 080863 | NP 543139 |
| SOCS box | LL_142686 | ankyrin repeat and SOCS box-containing 14 | ASB14 | DKFZp313L0121 | NM 130387 | NP 569058 |
| SOCS box | LL_127247 | ankyrin repeat and SOCS box-containing 17 | ASB17 | Asb-17 | NM 080868 | NP 543144 |
| RING finger | LL_200312 | ring finger protein 215 | RNF215 | - | NM 001017981 | NP 001017981 |
| RING finger | LL_7189 | TNF receptor-associated factor 6 | TRAF6 | MGC:3310,RNF85 | NM 004620 NM 145803 | NP 004611 NP 665802 |
| RING finger | LL_9810 | ring finger protein 40 | RNF40 | BRE1B,KIAA0661,MGC13051,RBP95,STARING | NM 014771 | NP 055586 |
| RING finger | LL_27246 | zinc finger protein 364 | ZNF364 | BCA2,RNF115 | NM 014455 | NP 055270 |
| RING finger | LL_79589 | ring finger protein 128 | RNF128 | FLJ23516,GRAIL | NM 024539 NM 194463 | NP 078815 NP 919445 |
| RING finger | LL_54542 | ring finger and CCHC-type zinc finger domains 2 | RC3H2 | FLJ20301,FLJ20713,MGC52176,MNAB,RNF164 | NM 018835 | NP 061323 |
| RING finger | LL_54894 | ring finger protein 43 | RNF43 | FLJ20315,MGC125630,RNF124,URCC | NM 017763 | NP 060233 |
| RING finger | LL_26001 | ring finger protein 167 | RNF167 | 5730408C10Rik,DKFZP566H073,L2254 | NM 015528 | NP 056343 |
| RING finger | LL_7187 | TNF receptor-associated factor 3 | TRAF3 | CAP-1,CD40bp,CRAF1,LAP1 | NM 003300 NM 145725 NM 145726 | NP 003291 NP 663777 NP |
| RING finger | LL_114804 | ring finger protein 157 | RNF157 | - | NM 052916 | NP 443148 |
| RING finger | LL_7844 | ring finger protein 103 | RNF103 | KF1,MGC102815,MGC41857,ZFP103,hkF-1 | NM 005667 | NP 005658 |
| RING finger | LL_7186 | TNF receptor-associated factor 2 | TRAF2 | MGC:45012,TRAP,TRAP3 | NM 021138 | NP 066961 |
| RING finger | LL_7542 | zinc finger protein-like 1 | ZFPL1 | D11S750,MCG4 | NM 006782 | NP 006773 |
| RING finger | LL_4214 | mitogen-activated protein kinase kinase kinase 1 | MAP3K1 | MAPKKK1,MEKK,MEKK1 | XM 001128827 XM 042066 | XP 001128827 XP 042066 |

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|--------------------|-----------------|---|--------------|---|------------------------------------|-------------------------|
| RING finger | LL.90933 | tripartite motif-containing 41 | TRIM41 | MGC1127,MGC31991 | NM 033549 NM 201627 | NP 291027 NP 963921 |
| RING finger | LL.6477 | seven in absentia homolog 1 (Drosophila) | SIAH1 | HUMSIAH,Siah-1,Siah-1a,hSIAH1 | NM 001006610 NM 003031 | NP 001006611 NP 003022 |
| RING finger | LL.84133 | zinc and ring finger 3 | ZNRF3 | BK747E2.3,RNF203 | NM 032173 | NP 115549 |
| RING finger | LL.158506 | zinc finger protein 645 | ZNF645 | FLJ25735,HAKAIL | NM 152577 | NP 689790 |
| RING finger | LL.80263 | tripartite motif-containing 45 | TRIM45 | FLJ13181,RNF99 | NM 025188 | NP 079464 |
| RING finger | LL.23352 | ubiquitin protein ligase E3 component n-recogin 4 | UBR4 | RBAF600, ZUBR1,p600 | NM 020765 | NP 065816 |
| RING finger | LL.9921 | ring finger protein 10 | RNF10 | KIAA0262,MGC126758,MGC126764,RIE2 | NM 014868 | NP 055683 |
| RING finger | LL.57820 | cyclin B1 interacting protein 1 | CCNB1P1 | C14orf18,HEI10 | NM 021178 NM 182849 NM 182851 NM | NP 067001 NP 878269 NP |
| RING finger | LL.29116 | myosin regulatory light chain interacting protein | MYLIP | MIR | NM 013262 | NP 037394 |
| RING finger | LL.7267 | tetratricopeptide repeat domain 3 | TTC3 | DCRR1,DKFZp686M0150,RNF105,TPRDIII | NM 001001894 NM 003316 | NP 001001894 NP 003307 |
| RING finger | LL.10193 | ring finger protein 41 | RNF41 | MGC45228,NRDPI,SBBIO3 | NM 005785 NM 194358 NM 194359 | NP 005776 NP 919339 NP |
| RING finger | LL.373 | tripartite motif-containing 23 | TRIM23 | ARD1,ARFD1,RNF46 | NM 001656 NM 033227 NM 033228 | NP 001647 NP 150230 NP |
| RING finger | LL.51132 | ring finger protein 12 | RNF12 | MGC15161,NY-REN-43,RLIM | NM 016120 NM 183353 | NP 057204 NP 899196 |
| RING finger | LL.135644 | tripartite motif-containing 40 | TRIM40 | RNF35 | NM 138700 | NP 619645 |
| RING finger | LL.80128 | tripartite motif-containing 46 | TRIM46 | FLJ23229,GENEY,TRIFIC | NM 025058 | NP 079334 |
| RING finger | LL.257218 | SNF2 histone linker PHD RING helicase | SHPRH | FLJ27258 | NM 001042683 NM 173082 | NP 001036148 NP 775105 |
| RING finger | LL.80352 | ring finger protein 39 | RNF39 | HZF,HZFW,LIRF | NM 170770 NM 025236 NM 170769 | NP 739576 NP 079512 NP |
| RING finger | LL.11342 | ring finger protein 13 | RNF13 | MGC13689,RZF | NM 183382 NM 007282 NM 183381 NM | NP 899238 NP 009213 NP |
| RING finger | LL.10107 | tripartite motif-containing 10 | TRIM10 | HIERF1,MGC141979,RFB30,RNF9 | NM 006778 NM 052828 | NP 006769 NP 439893 |
| RING finger | LL.672 | breast cancer 1, early onset | BRCA1 | BRCAL,BRCC1,IRIS,PSCP,RNF53 | NM 007294 NM 007295 NM 007296 NM | NP 009225 NP 009226 NP |
| RING finger | LL.79845 | ring finger protein 122 | RNF122 | FLJ12526,MGC126622 | NM 024787 | NP 079063 |
| RING finger | LL.10293 | TRAF interacting protein | TRAFIP | RNF206,TRIP | NM 005879 | NP 005870 |
| RING finger | LL.142678 | mindbomb homolog 2 (Drosophila) | MI2B | FLJ20648,FLJ39787,ZZANK1,ZZZ5 | NM 080875 | NP 543151 |
| RING finger | LL.84231 | TNF receptor-associated factor 7 | TRAF7 | DNFZp586I021,MGC7807,RFWD1,RNF119 | NM 206835 NM 032271 | NP 996666 NP 115647 |
| RING finger | LL.6047 | ring finger protein 4 | RNF4 | RESA-26,SNURF | NM 002938 | NP 002929 |
| RING finger | LL.285498 | ring finger protein 212 | RNF212 | FLJ38841,MGC120227,MGC120228 | NM 194439 | NP 919420 |
| RING finger | LL.23304 | ubiquitin protein ligase E3 component n-recogin 2 | UBR2 | C6orf133,KIAA0349,MGC71112 | NM 015255 | NP 056070 |
| RING finger | LL.7188 | TNF receptor-associated factor 5 | TRAF5 | MGC-39780,RNF84 | NM 001033910 NM 004619 NM 145759 | NP 001029082 NP 004610 |
| RING finger | LL.79102 | ring finger protein 26 | RNF26 | MGC2642 | NM 032015 | NP 114404 |
| RING finger | LL.149603 | ring finger protein 187 | RNF187 | - | XM 001129309 XM 928029 | XP 001129309 XP 933122 |
| RING finger | LL.5987 | tripartite motif-containing 27 | TRIM27 | RFP,RNF76 | NM 030950 NM 006510 | NP 112212 NP 006501 |
| RING finger | LL.90850 | zinc finger protein 598 | ZNF598 | DKFZp762F135,FLJ00086 | NM 178167 | NP 835461 |
| RING finger | LL.130507 | zinc finger protein 650 | ZNF650 | FLJ37422,KIAA2024 | NM 172070 | NP 742067 |
| RING finger | LL.57630 | SH3 domain containing ring finger 1 | SH3RF1 | FLJ21602,KIAA1494,POSH,RNF142,SH3MD2 | NM 020870 | NP 065921 |
| RING finger | LL.23355 | vacuolar protein sorting 8 homolog (S. cerevisiae) | VPS8 | FLJ32099,KIAA0804 | NM 001009921 NM 015303 | NP 001009921 NP 056118 |
| RING finger | LL.54941 | ring finger protein 125 | RNF125 | FLJ20456,MGC21737,TRAC1 | NM 017831 | NP 060301 |
| RING finger | LL.55521 | tripartite motif-containing 36 | TRIM36 | HAPRIN,RBCC728,RNF98 | NM 001017397 NM 001017398 NM 01870 | NP 001017397 NP 001017 |
| RING finger | LL.580 | BRCA1 associated RING domain 1 | BARD1 | - | NM 000465 | NP 000456 |
| RING finger | LL.84282 | ring finger protein 135 | RNF135 | L13,MGC13061 | NM 032322 NM 197939 | NP 115698 NP 922921 |
| RING finger | LL.10738 | ret finger protein-like 3 | RFPL3 | - | NM 001098535 NM 006604 | NP 001092005 NP 006595 |
| RING finger | LL.285671 | ring finger protein 180 | RNF180 | MGC120326,MGC120328 | NM 178532 | NP 848627 |
| RING finger | LL.26046 | zinc finger protein 294 | ZNF294 | C21orf10,C21orf98,FLJ11053,KIAA0714,RNF160 | NM 015565 | NP 056380 |
| RING finger | LL.140691 | tripartite motif-containing 69 | TRIM69 | HSD34,RNF36,Trif | NM 080745 NM 182985 | NP 542783 NP 892030 |
| RING finger | LL.84206 | ring finger and KH domain containing 3 | RKHD3 | DKFZp434J0617,MEX-3B,MEX3B,MGC117199,RNF195 | NM 032246 | NP 115622 |
| RING finger | LL.330 | baculoviral IAP repeat-containing 3 | BIRC3 | AIP1,AIP2,CIAP2,HAIPI1,HAIPI,MALT2,MIHC,RNF49 | NM 001165 NM 182962 | NP 001156 NP 892007 |
| RING finger | LL.257160 | ring finger protein 214 | RNF214 | DKFZp579G195 | NM 00107239 NM 207343 | NP 001070707 NP 997226 |
| RING finger | LL.4799 | nuclear transcription factor, X-box binding 1 | NFX1 | DKFZp779G2416,MGC20369,NFX2 | NM 002504 NM 147133 NM 147134 | NP 002495 NP 667344 NP |
| RING finger | LL.22888 | U-box domain containing 5 | UBOX5 | KIAA0860,RNF37,UBCE7IP5,UIP5 | NM 014948 NM 199415 | NP 055763 NP 955447 |
| RING finger | LL.55223 | tripartite motif-containing 62 | TRIM62 | FLJ10759,FLJ16558 | NM 018207 | NP 060677 |
| RING finger | LL.10612 | tripartite motif-containing 3 | TRIM3 | BERP,FLJ116135,HAC1,RNF22,RNF97 | NM 006458 NM 033278 | NP 006449 NP 150594 |
| RING finger | LL.120146 | tripartite motif-containing 64 | TRIM64 | C11orf28 | XM 061890 | XP 061890 |
| RING finger | LL.9604 | ring finger protein 14 | RNF14 | ARA54,FLJ26004,HFB30,HRHFB2038 | NM 004290 NM 183398 NM 183399 NM | NP 004281 NP 899645 NP |
| RING finger | LL.221687 | ring finger protein 182 | RNF182 | FLJ40772,MGC33993 | NM 152737 | NP 689950 |
| RING finger | LL.388591 | ring finger protein 207 | RNF207 | C1orf188,FLJ32096,FLJ46380 | NM 173795 NM 207396 | NP 776156 NP 997279 |
| RING finger | LL.867 | Cas-Br-M ecotropic retroviral transforming sequence | CBL | C-CBL,CBL2,RNF55 | NM 005188 | NP 005179 |
| RING finger | LL.6048 | ring finger protein 5 | RNF5 | RING5,RMA1 | NM 006913 | NP 008844 |
| RING finger | LL.2966 | general transcription factor IIIH, polypeptide 2, 44kDa | GTF2H2 | BTF2,BTF2P44,MGC102806,T-BTF2P44,TFIIH | NM 001515 | NP 001506 |
| RING finger | LL.55743 | checkpoint with forkhead and ring finger domains | CHFR | FLJ10796,FLJ33629,RNF116,RNF196 | NM 018223 | NP 060693 |
| RING finger | LL.51127 | tripartite motif-containing 17 | TRIM17 | RBCC,RNF16,terf | NM 001024940 NM 001024941 NM 01610 | NP 001020111 NP 0010201 |
| RING finger | LL.64320 | ring finger protein 25 | RNF25 | A07,FLJ13906 | NM 022453 | NP 071898 |
| RING finger | LL.51529 | APC11 anaphase promoting complex subunit 11 | ANAPC11 | APC11,Ape11p,HSPC214,MGC882 | NM 001002244 NM 001002245 NM 00100 | NP 001002244 NP 001002 |
| RING finger | LL.10210 | topoisomerase I binding, arginine/serine-rich | TOPORS | LUN,TP53BP1 | NM 005802 | NP 005793 |
| RING finger | LL.493829 | tripartite motif-containing 72 | TRIM72 | - | NM 001008274 | NP 001008275 |
| RING finger | LL.57617 | vacuolar protein sorting 18 homolog (S. cerevisiae) | VPS18 | KIAA1475,PEP3 | NM 020857 | NP 065908 |
| RING finger | LL.51444 | ring finger protein 138 | RNF138 | HSD-4,MGC8758,NARE,STRIN | NM 016271 NM 198128 | NP 057355 NP 937761 |
| RING finger | LL.55072 | ring finger protein 31 | RNF31 | FLJ10111,FLJ23501,MGC19975,ZIBRA | NM 017999 | NP 060469 |
| RING finger | LL.148066 | zinc and ring finger 4 | ZNRF4 | RNF204,Ssrz1f1,spzn | NM 181710 | NP 859061 |
| RING finger | LL.140545 | ring finger protein 32 | RNF32 | FKSG33,HSD15 | NM 030936 | NP 112198 |
| RING finger | LL.546 | RAD54 homolog | ATR | ATR,MRXHF1,MRXS3,RAD54,RAD54L | NM 138271 NM 000489 NM 138270 | NP 612115 NP 000480 NP |
| RING finger | LL.149041 | ring finger and CCCH-type zinc finger domains 1 | RC3H1 | KIAA2025,RNF198 | NM 172071 | NP 742068 |
| RING finger | LL.331 | baculoviral IAP repeat-containing 4 | BIRC4 | API3,ILP1,MIHA,XIAP,XLP2 | NM 001167 | NP 001158 |
| RING finger | LL.378884 | NHL repeat containing 1 | NHLRC1 | EPM2A,EPM2B | NM 198586 | NP 940988 |
| RING finger | LL.254225 | ring finger protein 169 | RNF169 | KIAA1991 | NM 001098638 | NP 001092108 |
| RING finger | LL.339976 | tripartite motif family-like 1 | TRIML1 | FLJ36180,MGC138638,MGC138639,RNF209 | NM 178556 | NP 848651 |
| RING finger | LL.85451 | unkempt homolog (Drosophila) | UNK | KIAA1753,ZC3H5,ZC3HDC5 | NM 001080419 | NP 001073888 |

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|-------------|-----------|---|-----------|---|-------------------------------------|-------------------------|
| RING finger | LL_55298 | ring finger protein 121 | RNF121 | FLJ11099 | NM_018320 NM_194452 NM_194453 | NP_060790 NP_919434 NP |
| RING finger | LL_81790 | ring finger protein 170 | RNF170 | DKFZP564A022.FLJ38306 | NM_030954 | NP_112216 |
| RING finger | LL_5930 | retinoblastoma binding protein 6 | RBBP6 | DKFZp761B2423.MY038.P2P-R.RBQ-1 | NM_006910 NM_018703 NM_032626 | NP_008841 NP_061173 NP |
| RING finger | LL_84759 | polycomb group ring finger 1 | PCGF1 | FLJ43754.MG210882.NSPC1.RNF3A-2.RNF68 | NM_032673 | NP_116062 |
| RING finger | LL_4591 | tripartite motif-containing 37 | TRIM37 | KIAA0898.MUL_POB1.TEF3 | NM_001005207 NM_015294 | NP_001005207 NP_056109 |
| RING finger | LL_23077 | MYC binding protein 2 | MYCBP2 | KIAA0916.PAM | NM_015057 | NP_055872 |
| RING finger | LL_54476 | TRIA D3 protein | TRIA D3 | U711.UBCE7IP1.ZIN | NM_207111 NM_207116 | NP_996994 NP_996999 |
| RING finger | LL_54467 | ankyrin repeat and IBR domain containing 1 | ANKIB1 | DKFZP434A0225.FLJ33123.KIAA1386 | NM_019004 | NP_061877 |
| RING finger | LL_9618 | TNF receptor-associated factor 4 | TRAF4 | CART1.ML.N62.RNF83 | NM_145751 NM_004295 | NP_665694 NP_004286 |
| RING finger | LL_25898 | ring finger and CHY zinc finger domain containing 1 | RCHY1 | ARNIP.CHIMP.PIRH2.RNF199.ZNF363.hARNIP | NM_001008925 NM_001009922 NM_015433 | NP_001008925 NP_0010099 |
| RING finger | LL_342931 | ret finger protein-like 4A | RFPL4A | RFPL4.RNF210 | XM_292796 | XP_292796 |
| RING finger | LL_56254 | ring finger protein 20 | RNF20 | BRE1A.FLJ11189.FLJ20382 | NM_019592 | NP_062538 |
| RING finger | LL_27072 | vacuolar protein sorting 41 homolog (S. cerevisiae) | VPS41 | HVPS41.HVSP41.hVps41p | NM_014396 NM_080631 | NP_055211 NP_542198 |
| RING finger | LL_727800 | ring finger protein 208 | RNF208 | DKFZp761H1710.MGC88636 | NM_031297 | NP_112587 |
| RING finger | LL_115123 | membrane-associated ring finger (C3HC4) 3 | *MARCH3 | *MARCH-III.MGC48332.RNF173 | NM_178450 | NP_848545 |
| RING finger | LL_91445 | ring finger protein 185 | RNF185 | FLJ38628 | NM_152267 | NP_689480 |
| RING finger | LL_10155 | tripartite motif-containing 28 | TRIM28 | FLJ29029.KAP1.RNF96.TF1B.TIF1B | NM_005762 | NP_005753 |
| RING finger | LL_8805 | tripartite motif-containing 24 | TRIM24 | PTC6.RNF82.TF1A.TIF1.TIF1A.TIF1ALPHA.htTIF1 | NM_003852 NM_015905 | NP_003843 NP_056989 |
| RING finger | LL_53840 | tripartite motif-containing 34 | TRIM34 | JFP1.RNF21 | NM_001003827 NM_021616 NM_130389 | NP_001003827 NP_067629 |
| RING finger | LL_25897 | ring finger protein 19 | RNF19 | DKFZp566B1346.DORFIN | NM_015435 NM_183419 | NP_056250 NP_904355 |
| RING finger | LL_91107 | tripartite motif-containing 47 | TRIM47 | GOA.RNF100 | NM_033452 | NP_258411 |
| RING finger | LL_54546 | ring finger protein 186 | RNF186 | FLJ20225.RP11-91K11.1 | NM_019062 | NP_061935 |
| RING finger | LL_287015 | tripartite motif-containing 42 | TRIM42 | FLJ40097.MGC163346 | NM_152616 | NP_689829 |
| RING finger | LL_11236 | ring finger protein 139 | RNF139 | HRCA1.MGC31961.RCA1.TRC8 | NM_007218 | NP_009149 |
| RING finger | LL_399937 | similar to tripartite motif protein 39 | LOC399937 | - | XM_374917 XM_930197 | XP_374917 XP_935290 |
| RING finger | LL_6596 | helicase-like transcription factor | HLTF | HIP116.HIP116A.HLTF1.RNF80.SMARCA3.SNF2L3 | NM_003071 NM_139048 | NP_003062 NP_620636 |
| RING finger | LL_329 | baculoviral IAP repeat-containing 2 | BIRC2 | API1.HIAP2.Hiap-2.MIH8.RNF48.cIAP1 | NM_001166 | NP_001157 |
| RING finger | LL_23087 | tripartite motif-containing 35 | TRIM35 | HLSS.KIAA1098.MAIR.MGC17233 | NM_171982 | NP_741983 |
| RING finger | LL_391714 | tripartite motif-containing 75 | TRIM75 | - | XM_373039 XM_939332 | XP_373039 XP_944425 |
| RING finger | LL_390231 | similar to tripartite motif protein 17 | LOC390231 | - | XM_372423 XM_936301 | XP_372423 XP_941394 |
| RING finger | LL_7732 | zinc finger protein 179 | ZNF179 | BFP.RNF112 | NM_007148 | NP_009079 |
| RING finger | LL_9666 | zinc finger DAZ interacting protein 3 | DZIP3 | FLJ13327.KIAA0675.UURF2 | NM_014648 | NP_055463 |
| RING finger | LL_57159 | tripartite motif-containing 54 | TRIM54 | MURF.MURF-3.RNF30 | NM_032546 NM_187841 | NP_115935 NP_912730 |
| RING finger | LL_115992 | ring finger protein 166 | RNF166 | MGC14381.MGC2647 | NM_178841 | NP_849163 |
| RING finger | LL_10425 | ariadne homolog 2 (Drosophila) | ARIH2 | ARI2.FLJ10938.FLJ33921.TRIAD1 | NM_006321 | NP_006312 |
| RING finger | LL_5071 | Parkinson disease (autosomal recessive, juvenile) 2, parkin | PARK2 | AR.JP.LPRS2.PDJ.PRKN | NM_004562 NM_013987 NM_013988 | NP_004553 NP_054642 NP |
| RING finger | LL_442247 | ret finger protein-like 4B | RFPL4B | RNF211 | NM_001013734 | NP_001013756 |
| RING finger | LL_81559 | tripartite motif-containing 11 | TRIM11 | BIA1.RNF92 | NM_145214 | NP_660215 |
| RING finger | LL_7726 | tripartite motif-containing 26 | TRIM26 | AFP.RNF95.ZNF173 | NM_003449 | NP_003440 |
| RING finger | LL_64219 | praja 1 | PJA1 | RNF70 | NM_001032396 NM_022368 NM_145119 | NP_001027568 NP_071763 |
| RING finger | LL_6045 | ring finger protein 2 | RNF2 | BAP-1.BAP1.DING.HIP3.RING1B.RING2 | NM_007212 | NP_009143 |
| RING finger | LL_11074 | tripartite motif-containing 31 | TRIM31 | C6orf13.HCG1.HCG1.RNF | NM_052816 NM_007028 | NP_438111 NP_008959 |
| RING finger | LL_63891 | ring finger protein 123 | RNF123 | FLJ12565.FP1477.KPC1.MGC163504 | NM_022064 | NP_071347 |
| RING finger | LL_9978 | ring-box 1 | RBX1 | BA554C12.1.MGC13357.MGC1481.RNF75.ROC1 | NM_014248 | NP_055063 |
| RING finger | LL_5913 | receptor-associated protein of the synapse | RAPSN | CMS1D.CMS1E.MGC3597.RNF205 | NM_005055 NM_032645 | NP_005046 NP_116034 |
| RING finger | LL_7703 | polycomb group ring finger 2 | PCGF2 | MEL-18.MGC10545.RNF110.ZNF144 | NM_007144 | NP_009075 |
| RING finger | LL_223082 | zinc and ring finger 2 | ZNRF2 | RNF202 | NM_147128 | NP_667339 |
| RING finger | LL_6478 | seven in absentia homolog 2 (Drosophila) | SIAH2 | hSiAh2 | NM_005067 | NP_005058 |
| RING finger | LL_165918 | ring finger protein 168 | RNF168 | FLJ35794 | NM_152617 | NP_689830 |
| RING finger | LL_25893 | tripartite motif-containing 58 | TRIM58 | BIA2.DKFZp434C091 | NM_015431 | NP_056246 |
| RING finger | LL_378925 | ring finger protein 148 | RNF148 | MGC35222 | NM_198085 | NP_932351 |
| RING finger | LL_166655 | tripartite motif-containing 60 | TRIM60 | FLJ35882.MGC119325.RNF129.RNF33 | NM_152620 | NP_689833 |
| RING finger | LL_57674 | ring finger protein 213 | RNF213 | C17orf27.KIAA1554 | NM_020914 | NP_065965 |
| RING finger | LL_51255 | ring finger protein 181 | RNF181 | HSPC238 | NM_016494 | NP_057578 |
| RING finger | LL_84675 | tripartite motif-containing 55 | TRIM55 | MURF-2.RNF29 | NM_033058 NM_184085 NM_184086 NM | NP_149047 NP_908973 NP |
| RING finger | LL_84708 | ligand of numb-protein X 1 | LNX1 | LNX.MPDZ.PDZRN2 | NM_032622 | NP_116011 |
| RING finger | LL_10206 | tripartite motif-containing 13 | TRIM13 | CAR.DLEU5.LEU5.RFP2.RNF77 | NM_001007278 NM_005798 NM_052811 | NP_001007279 NP_005789 |
| RING finger | LL_9025 | ring finger protein 8 | RNF8 | FLJ12013.KIAA0646 | NM_003958 NM_183078 | NP_003949 NP_898901 |
| RING finger | LL_85363 | tripartite motif-containing 5 | TRIM5 | RNF88.TRIM5alpha | NM_033034 NM_033092 NM_033093 | NP_149023 NP_149083 NP |
| RING finger | LL_55905 | zinc finger protein 313 | ZNF313 | RNF114 | NM_018683 | NP_061153 |
| RING finger | LL_127544 | IBR domain containing 3 | IBRDC3 | FLJ90005.NKLAM | NM_153341 | NP_699172 |
| RING finger | LL_10346 | tripartite motif-containing 22 | TRIM22 | GPSTAF50.RNF94.STAF50 | NM_006074 | NP_006065 |
| RING finger | LL_92312 | ring finger and KH domain containing 4 | RKHD4 | MEX-3A.MEX3A | NM_001093725 | NP_001087194 |
| RING finger | LL_197370 | non-SMC element 1 homolog (S. cerevisiae) | NSMCE1 | NSE1 | NM_145080 | NP_659547 |
| RING finger | LL_84937 | zinc and ring finger 1 | ZNRF1 | DKFZp434E229.FLJ14846.MGC15430.NIN283 | NM_032268 | NP_115644 |
| RING finger | LL_9781 | ring finger protein 144 | RNF144 | KIAA0161.UBCE7IP4 | NM_014746 | NP_055561 |
| RING finger | LL_55658 | ring finger protein 126 | RNF126 | FLJ20552.MGC1022.MGC14317 | NM_017876 NM_194460 | NP_060346 NP_919442 |
| RING finger | LL_267 | autocrine motility factor receptor | AMFR | GP78.RNF45 | NM_001144 | NP_001135 |
| RING finger | LL_55120 | Fanconi anemia, complementation group L | FANCL | FLJ10335.PHF9.POG | NM_018062 | NP_060532 |
| RING finger | LL_84676 | tripartite motif-containing 63 | TRIM63 | FLJ32380.IRF.MURF1.MURF2.RNF28.SMRZ | NM_032588 | NP_115977 |
| RING finger | ab | deltex 4 homolog (Drosophila) | DTX4 | KIAA0937.MGC141899.RNF155 | NM_015177 | NP_055992 |
| RING finger | LL_201292 | tripartite motif-containing 65 | TRIM65 | 4732463g12Rik | NM_173547 | NP_775818 |
| RING finger | LL_84333 | polycomb group ring finger 5 | PCGF5 | MGC16202.RNF159 | NM_032373 | NP_115749 |
| RING finger | LL_391712 | tripartite motif-containing 61 | TRIM61 | MGC102996.RNF35 | NM_001012414 | NP_001012414 |
| RING finger | LL_9616 | ring finger protein 7 | RNF7 | CKBBP1.ROC2.SAG | NM_014245 NM_183237 | NP_055060 NP_899060 |

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| RING finger | LL.140432 | ring finger protein 113B | RNF113B | MGC26599,RNF161,ZNF183L1,ba10G5.1 | NM 178861 | NP 849192 |
| RING finger | LL.56163 | ring finger protein 17 | RNF17 | FLJ11045,Mmip-2,SPATA23,TDRD4 | NM 031277 | NP 112567 |
| RING finger | LL.91694 | LON peptidase N-terminal domain and ring finger 1 | LONRF1 | FLJ23749,RNF191 | NM 152271 | NP 689484 |
| RING finger | LL.375593 | tripartite motif-containing 73 | TRIM73 | MGC45477,TRIM50B | NM 198924 | NP 944606 |
| RING finger | LL.6737 | tripartite motif-containing 21 | TRIM21 | RNF81,RO52,SSA,SSA1 | NM 003141 | NP 003132 |
| RING finger | LL.164832 | LON peptidase N-terminal domain and ring finger 2 | LONRF2 | FLJ45273,MGC126711,MGC126713,RNF192 | NM 198461 | NP 940863 |
| RING finger | LL.284996 | ring finger protein 149 | RNF149 | DNAP1P2,FLJ90504 | NM 173647 | NP 775918 |
| RING finger | LL.80196 | ring finger protein 34 | RNF34 | FLJ21786,RFI,RIF,RIFF | NM 025126 NM 194271 | NP 079402 NP 919247 |
| RING finger | LL.146310 | ring finger protein 151 | RNF151 | MGC129921 | NM 174903 | NP 777563 |
| RING finger | LL.11237 | ring finger protein 24 | RNF24 | GIL | NM 007219 | NP 009150 |
| RING finger | LL.283116 | Tripartite motif protein 49-like 2, RNF18-like 2 | LOC283116 | RNF18-L2 | XM 208043 | XP 208043 |
| RING finger | LL.55823 | vacuolar protein sorting 11 homolog (S. cerevisiae) | VPS11 | END1,PEP5,RNF108,hVPS11 | NM 021729 | NP 068375 |
| RING finger | LL.57484 | ring finger protein 150 | RNF150 | MGC125502 | NM 020724 | NP 065775 |
| RING finger | LL.255488 | IBR domain containing 2 | IBRDC2 | KIAA0161,MGC171786,ba528A10.3,p53RFP | NM 182757 | NP 877434 |
| RING finger | LL.285533 | ring finger protein 175 | RNF175 | FLJ34190 | NM 173662 | NP 775933 |
| RING finger | LL.494470 | ring finger protein 165 | RNF165 | - | NM 152470 | NP 689683 |
| RING finger | LL.152006 | ring finger protein 38 | RNF38 | FLJ21343 | NM 022781 NM 194328 NM 194329 NM | NP 073618 NP 919309 NP |
| RING finger | LL.57093 | Tripartite motif protein 49, RNF18 | TRIM49 | RNF18 | NM 020358 | NP 065091 |
| RING finger | LL.138065 | ring finger protein 183 | RNF183 | FLJ31197,MGC4734 | NM 145051 | NP 659488 |
| RING finger | LL.79097 | tripartite motif-containing 48 | TRIM48 | MGC4827,RNF101 | NM 024114 | NP 077019 |
| RING finger | LL.56852 | RAD18 homolog (S. cerevisiae) | RAD18 | RNF73 | NM 020165 | NP 064550 |
| RING finger | LL.154214 | IBR domain containing 1 | IBRDC1 | C6orf172,MGC26996,dJ84N20.1 | NM 152553 | NP 689766 |
| RING finger | LL.135892 | tripartite motif-containing 50 | TRIM50 | FLJ32804,MGC138357,MGC138359,TRIM50A | NM 178125 | NP 835226 |
| RING finger | LL.81847 | ring finger protein 146 | RNF146 | DKFZP434O1427,RP3-351K20.1,dJ351K20.1 | NM 030963 | NP 112225 |
| RING finger | LL.55159 | ring finger and WD repeat domain 3 | RFWD3 | FLJ10520,RNF201 | NM 018124 | NP 060594 |
| RING finger | LL.117584 | ring finger and FYVE-like domain containing 1 | RFFL | RNF189,RNF34L | NM 001017368 NM 057178 | NP 001017368 NP 476519 |
| RING finger | LL.5371 | promyelocytic leukemia | PML | MYL,PP8675,RNF71,TRIM19 | NM 002675 NM 033238 NM 033239 NM | NP 002666 NP 150241 NP |
| RING finger | LL.113878 | deltex homolog 2 (Drosophila) | DTX2 | KIAA1528,MGC1098,RNF58 | NM 020892 | NP 065943 |
| RING finger | LL.22838 | ring finger protein 44 | RNF44 | KIAA1100 | NM 014901 | NP 055716 |
| RING finger | LL.5828 | peroxisomal membrane protein 3, 35kDa (Zellweger syndrome) | PXMP3 | PAF-1,PAF1,PEX2,PMP3,PMP35,RNF72 | NM 000318 NM 001079867 | NP 000309 NP 001073336 |
| RING finger | LL.9867 | praja 2, RING-H2 motif containing | PJA2 | KIAA0438,Neurodap1,RNF131 | NM 014819 | NP 055634 |
| RING finger | LL.84108 | polycomb group ring finger 6 | PCGF6 | MBLR,MGC15678,MGC17541,RNF134 | NM 001011663 NM 032154 | NP 001011663 NP 115530 |
| RING finger | LL.153830 | ring finger protein 145 | RNF145 | DKFZp686M11215,FLJ31951 | NM 144726 | NP 653327 |
| RING finger | LL.51320 | ring finger and KH domain containing 2 | RKHD2 | BM-013,FLJ38871,MEX-3C,MEX3C,RNF194 | NM 016626 | NP 057710 |
| RING finger | LL.153769 | SH3 domain containing ring finger 2 | SH3RF2 | FLJ23654,RNF158 | NM 152550 | NP 689763 |
| RING finger | LL.5193 | peroxisomal biogenesis factor 12 | PEX12 | - | NM 000286 | NP 000277 |
| RING finger | LL.129868 | tripartite motif-containing 43 | TRIM43 | - | NM 138800 | NP 620155 |
| RING finger | LL.84851 | tripartite motif-containing 52 | TRIM52 | MGC16175,RNF102 | NM 032765 | NP 116154 |
| RING finger | LL.162333 | ring finger protein 190 | RNF190 | FLJ35757 | NM 152598 | NP 689811 |
| RING finger | LL.10336 | polycomb group ring finger 3 | PCGF3 | DONG1,FLJ36550,FLJ43813,RNF3,RNF3A | NM 006315 | NP 006306 |
| RING finger | LL.6015 | ring finger protein 1 | RING1 | RNF1 | NM 002931 | NP 002922 |
| RING finger | LL.64844 | Axotrophin | AXO | AXO,AXOT,MARCH7,MARCH-VII,RNF177 | NM 022826 | NP 073737 |
| RING finger | LL.23024 | PDZ domain containing RING finger 3 | PDZRN3 | LN3,SEMACAP3 | NM 015009 | NP 055824 |
| RING finger | LL.115426 | ubiquitin-like, containing PHD and RING finger domains, 2 | UHRF2 | MGC33463,NIHF,RNF107,RP11-472F14.2,URF2 | NM 152896 | NP 690856 |
| RING finger | LL.84767 | SPRY domain containing 5 | SPRYD5 | MGC10977,TRIM51 | NM 032681 | NP 116070 |
| RING finger | LL.197131 | ubiquitin protein ligase E3 component n-recogin 1 | UBR1 | JBS,MGC142065,MGC142067 | NM 174916 | NP 775756 |
| RING finger | LL.7737 | ring finger protein 113A | RNF113A | RNF113,ZNF183 | NM 006978 | NP 008909 |
| RING finger | LL.28962 | osteopetrosis associated transmembrane protein 1 | OSTM1 | GIPN,GL,HSPC019 | NM 014028 | NP 054747 |
| RING finger | LL.29951 | PDZ domain containing RING finger 4 | PDZRN4 | LN34,SAMCAP3L | NM 013377 | NP 037509 |
| RING finger | LL.26994 | ring finger protein 11 | RNF11 | CGI-123,MGC51169,SID1669 | NM 014372 | NP 055187 |
| RING finger | LL.84447 | synovial apoptosis inhibitor 1, synoviolin | SYVN1 | HRD1,KIAA1810,MGC40372 | NM 032431 NM 172230 | NP 115807 NP 757385 |
| RING finger | LL.10616 | RanBP-type and C3HC4-type zinc finger containing 1 | RBCK1 | C20orf18,HOIL1,RBCK2,RNF54,UBCE7IP3,ZRANB4 | NM 006462 NM 031229 | NP 006453 NP 112506 |
| RING finger | LL.286827 | tripartite motif-containing 59 | TRIM59 | MRF1,RNF104,TRIM57,TSBF1 | NM 173084 | NP 775107 |
| RING finger | LL.51592 | tripartite motif-containing 33 | TRIM33 | PTC7,RFG7,TF1G,TIF1G,TIF1GAMMA,TIFGAMMA | NM 015906 NM 033020 | NP 056990 NP 148980 |
| RING finger | LL.5192 | peroxisome biogenesis factor 10 | PEX10 | MGC1998,NALD,RNF69 | NM 002617 NM 153818 | NP 002608 NP 722540 |
| RING finger | LL.220441 | ring finger protein 152 | RNF152 | FLJ39176,MGC138161 | NM 173557 | NP 775828 |
| RING finger | LL.152518 | nuclear transcription factor, X-box binding-like 1 | NFXL1 | FLJ16294,HOZFP | NM 152995 | NP 694540 |
| RING finger | LL.114088 | tripartite motif-containing 9 | TRIM9 | KIAA0282,RNF91,SPRING | NM 015163 NM 052978 | NP 055978 NP 443210 |
| RING finger | LL.64326 | ring finger and WD repeat domain 2 | RFWD2 | COP1,FLJ10416,RNF200 | NM 001001740 NM 022457 | NP 001001740 NP 071902 |
| RING finger | LL.51136 | PTD016 protein | LOC51136 | MGC111090 | NM 016125 | NP 057209 |
| RING finger | LL.50862 | ring finger protein 141 | RNF141 | MGC8715,ZFP26,ZNF230 | NM 016422 | NP 057506 |
| RING finger | LL.51257 | membrane-associated ring finger (C3HC4) 2 | MARCH2 | HSPC240,MARCH-II,RNF172 | NM 001005415 NM 001005416 NM 016494 | NP 001005415 NP 001005 |
| RING finger | LL.151112 | zinc finger, SWIM-type containing 2 | ZSWIM2 | MGC33890,ZZZZ | NM 182521 | NP 872327 |
| RING finger | LL.378108 | tripartite motif-containing 74 | TRIM74 | TRIM50C | NM 198853 | NP 942150 |
| RING finger | LL.51533 | PHD finger protein 7 | PHF7 | HSPC045,HSPC226,MGC26088,NYD-SP6 | NM 016483 NM 173341 | NP 057567 NP 775463 |
| RING finger | LL.7468 | Wolf-Hirschhorn syndrome candidate 1 | WHSC1 | MMSET,NSD2,REIIBP,TRX5,WH5 | NM 133336 NM 001042424 NM 007331 N | NP 579891 NP 001035889 |
| RING finger | LL.54778 | ring finger protein 111 | RNF111 | ARK,DKFZp313E0731,FLJ38008 | NM 017610 | NP 060080 |
| RING finger | LL.23113 | p53-associated parkin-like cytoplasmic protein | PARC | H7AP1 | NM 015089 | NP 055904 |
| RING finger | LL.4194 | Mdm4 | MDM4 | DKFZp781B1423,MDMX,MGC132766,MRP1 | NM 002393 | NP 002384 |
| RING finger | LL.55016 | membrane-associated ring finger (C3HC4) 1 | MARCH1 | DKFZp564M1682,FLJ20668,MARCH-I,RNF171 | NM 017923 | NP 060393 |
| RING finger | LL.399664 | ring finger and KH domain containing 1 | RKHD1 | KIAA2031,MEX3,MEX3D,RNF193,TINO | NM 001085363 NM 203304 | NP 001078832 NP 976049 |
| RING finger | LL.89970 | ring finger and SPRY domain containing 1 | RSPRY1 | KIAA1972 | NM 133368 | NP 588609 |
| RING finger | LL.90678 | leucine rich repeat and sterile alpha motif containing 1 | LRSAM1 | FLJ31641,RIFLE,TAL | NM 001005373 NM 001005374 NM 13836 | NP 001005373 NP 001005 |
| RING finger | LL.5896 | recombination activating gene 1 | RAG1 | MGC43321,RNF74 | NM 000448 | NP 000439 |
| RING finger | LL.151636 | deltex 3-like (Drosophila) | DTX3L | BBAP | NM 138287 | NP 612144 |

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| RING finger | LL_25820 | ariadne homolog | ARIH1 | ARIHARI.HHARI.UBCH7BP | NM_005744 | NP_005735 |
| RING finger | LL_222484 | ligand of numb-protein X 2 | LNX2 | FLJ12933,FLJ23932,FLJ38000,MGC46315,PDZRN1 | NM_153371 | NP_699202 |
| RING finger | LL_55182 | chromosome 1 open reading frame 164 | C1orf164 | FLJ10597 | NM_018150 | NP_060620 |
| RING finger | LL_57661 | CTD-binding SR-like protein rA9 | KIAA1542 | - | NM_020901 | NP_065952 |
| RING finger | LL_441061 | similar to membrane-associated ring finger (C3HC4) 4 | LOC441061 | - | XM_496738 XM_941081 | XP_496738 XP_946174 |
| RING finger | LL_120824 | Tripartite motif protein 49-like 1, RNF18-like 1 | LOC120824 | RNF18-L1 | XM_062300 | XP_062300 |
| RING finger | LL_399939 | Tripartite motif protein 49-like 3, RNF18-like 3 | LOC399939 | RNF18-L3 | XM_374919 | XP_374919 |
| RING finger | LL_23321 | tripartite motif-containing 2 | TRIM2 | KIAA0517,RNF86 | NM_015271 | NP_056086 |
| RING finger | LL_89122 | tripartite motif-containing 4 | TRIM4 | RNF87 | NM_033017 NM_033091 | NP_148977 NP_149082 |
| RING finger | LL_117854 | tripartite motif-containing 6 | TRIM6 | RNF89 | NM_001003818 NM_058166 | NP_001003818 NP_477514 |
| RING finger | LL_81786 | tripartite motif-containing 7 | TRIM7 | GNIP,RNF90 | NM_033342 NM_203293 NM_203294 NM | NP_203128 NP_976038 NP |
| RING finger | LL_92979 | membrane-associated ring finger (C3HC4) 9 | *MARCH9 | FLJ36578,MARCH-IX,RNF179 | NM_138396 | NP_612405 |
| RING finger | LL_79444 | baculoviral IAP repeat-containing 7 (livin) | BIRC7 | KIAP,LIVIN,ML-IAP,MLIAP,RNF50 | NM_022161 NM_139317 | NP_071444 NP_647478 |
| RING finger | LL_112401 | baculoviral IAP repeat-containing 8 | BIRC8 | ILP-2,ILP2,hILP2 | NM_033341 | NP_203127 |
| RING finger | LL_22954 | tripartite motif-containing 32 | TRIM32 | BBS11,HT2A,LGMD2H,TATIP | NM_012210 | NP_036342 |
| RING finger | LL_55819 | ring finger protein 130 | RNF130 | G1RZFP,GOLIATH | NM_018434 | NP_060904 |
| RING finger | LL_79596 | chromosome 13 open reading frame 7 | C13orf7 | FLJ13449,FLJ25774 | NM_024546 | NP_078822 |
| RING finger | LL_440730 | tripartite motif-containing 67 | TRIM67 | FLJ44831,TNL | NM_001004342 | NP_001004342 |
| RING finger | LL_55128 | tripartite motif-containing 68 | TRIM68 | FLJ10369,MGC126176,RNF137,SS-56 | NM_018073 | NP_060543 |
| RING finger | LL_79594 | Mitochondrial Ubiquitin Ligase Activator of NF-kB (MULAN) | C1orf166 | FLJ12875,RP11-401M16.2,C1orf166 | NM_024544 | NP_078820 |
| RING finger | LL_79836 | LON peptidase N-terminal domain and ring finger 3 | LONRF3 | FLJ22612,MGC119463,MGC119465,RNF127 | NM_001031855 NM_024778 | NP_001027026 NP_079054 |
| RING finger | LL_6049 | ring finger protein (C3H2C3 type) 6 | RNF6 | DKFZp686P0776 | NM_183045 NM_005977 NM_183043 NM | NP_898866 NP_005968 NP |
| RING finger | LL_57574 | membrane-associated ring finger (C3HC4) 4 | *MARCH4 | *MARCH-IV,MGC104908,RNF174 | NM_020814 | NP_065865 |
| RING finger | LL_8315 | BRCA1 associated protein | BRAP | BRAP2,IMPRNF52 | NM_006768 | NP_006759 |
| RING finger | LL_9148 | neuralized homolog (Drosophila) | NEURL | NEURL1,RNF67,h-neu | NM_004210 | NP_004201 |
| RING finger | LL_23609 | makorin, ring finger protein, 2 | MKRN2 | HSPC070,RNF62 | NM_014160 | NP_054879 |
| RING finger | LL_23608 | makorin, ring finger protein, 1 | MKRN1 | FLJ21334,RNF61 | NM_013446 | NP_038474 |
| RING finger | LL_4281 | midline 1 (Opitz/BBB syndrome) | MID1 | OGS1,OSX,RNF59,TRIM18,XPRF,ZNFXY | NM_033291 NM_000381 NM_001098624 N | NP_150633 NP_000372 NP |
| RING finger | LL_55167 | male-specific lethal 2-like 1 (Drosophila) | MSL2L1 | FLJ10546,KIAA1585,MSL-2,RNF184 | NM_018133 | NP_060603 |
| RING finger | LL_149095 | DC-STAMP domain containing 1 | DCST1 | FLJ32785,RP11-307C12.10 | NM_152494 | NP_689707 |
| RING finger | LL_868 | Cas-Br-M ecotropic retroviral transforming sequence b | CBLB | FLJ36865,RNF56 | NM_170662 | NP_733762 |
| RING finger | LL_56658 | tripartite motif-containing 39 | TRIM39 | MGC32984,RNF23,TFP | NM_021253 NM_172016 | NP_067076 NP_742013 |
| RING finger | LL_93082 | likely ortholog of mouse Neutralized-related protein | LINCR | - | NM_001080535 | NP_001074004 |
| RING finger | LL_648 | BM11 polycomb ring finger oncogene | BM11 | MGC12685,PCGF4,RNF51 | NM_005180 | NP_005171 |
| RING finger | LL_23624 | Cas-Br-M ecotropic retroviral transforming sequence c | CBLC | CBL-3,CBL-SL,RNF57 | NM_012116 | NP_036248 |
| RING finger | LL_89870 | tripartite motif-containing 15 | TRIM15 | RNF93,ZNF178,ZNFB7 | NM_052812 NM_033229 | NP_434699 NP_150232 |
| RING finger | LL_4850 | CCR4-NOT transcription complex, subunit 4 | CNOT4 | CLONE243,NOT4,NOT4H | NM_001008225 NM_013316 | NP_001008226 NP_037448 |
| RING finger | LL_8193 | D4, zinc and double PHD fingers family 1 | DPF1 | MGC150428,MGC150429,NEUD4,neuro-d4 | NM_004647 | NP_004638 |
| RING finger | LL_7681 | makorin, ring finger protein, 3 | MKRN3 | D15S9,MGC88288,RNF63,ZFP127,ZNF127 | NM_005664 | NP_005655 |
| RING finger | LL_10668 | cell growth regulator with ring finger domain 1 | CGRRF1 | CGR19,RNF197 | NM_006568 | NP_006559 |
| RING finger | LL_54708 | membrane-associated ring finger (C3HC4) 5 | *MARCH5 | FLJ20445,MARCH-V,RNF153,MITOL | NM_017824 | NP_060294 |
| RING finger | LL_10475 | tripartite motif-containing 38 | TRIM38 | MGC8946,RNF15,RORET | NM_006355 | NP_006346 |
| RING finger | LL_4331 | menage a trois homolog 1, cyclin H assembly factor | MNAT1 | MAT1,RNF66 | NM_002431 | NP_002422 |
| RING finger | LL_4193 | Mdm2 | MDM2 | HDMX,MGC71221,hdm2 | NM_002392 NM_006878 NM_006879 NM | NP_002383 NP_006869 NP |
| RING finger | LL_7706 | tripartite motif-containing 25 | TRIM25 | EFP,RNF147,Z147,ZNF147 | NM_005082 | NP_005073 |
| RING finger | LL_81603 | tripartite motif-containing 8 | TRIM8 | GERP,RNF27 | NM_030912 | NP_112174 |
| RING finger | LL_65259 | chromosome 16 open reading frame 28 | C16orf28 | FLJ23360 | NM_023076 | NP_075564 |
| RING finger | LL_81844 | tripartite motif-containing 56 | TRIM56 | DKFZP6670116,FLJ35608,RNF109 | NM_030961 | NP_112223 |
| RING finger | LL_168433 | ring finger protein 133 | RNF133 | MGC27072 | NM_139175 | NP_631914 |
| RING finger | LL_1840 | deltex homolog 1 (Drosophila) | DTX1 | hdx-1 | NM_004416 | NP_004407 |
| RING finger | LL_10299 | membrane-associated ring finger (C3HC4) 6 | *MARCH6 | KIAA0597,MARCH-VI,RNF176,TEB4 | NM_005885 | NP_005876 |
| RING finger | LL_79872 | Cas-Br-M ecotropic retroviral transforming sequence-like 1 | CBLL1 | FLJ23109,HAKAI,MGC163401,MGC163403,RNF188 | NM_024814 | NP_079090 |
| RING finger | LL_57534 | mindbomb homolog 1 (Drosophila) | MIB1 | DIP-1,FLJ90676,MIB,ZZANK2,ZZZ6 | NM_020774 | NP_065825 |
| RING finger | LL_23295 | mahogunin, ring finger 1 | MGRN1 | KIAA0544,RNF156 | NM_015246 | NP_056061 |
| RING finger | LL_64207 | chromosome 14 open reading frame 4 | C14orf4 | IRF2BPL,KIAA1865 | NM_024496 | NP_078772 |
| RING finger | LL_5988 | ret finger protein-like 1 | RFPL1 | MGC132428,RNF78 | NM_021026 | NP_066306 |
| RING finger | LL_196403 | deltex 3 homolog (Drosophila) | DTX3 | FLJ34766,MGC138863,MGC138864,RNF154 | NM_178502 | NP_848597 |
| RING finger | LL_11043 | midline 2 | MID2 | FXY2,MID1,RNF60,TRIM1 | NM_012216 NM_052817 | NP_036348 NP_438112 |
| RING finger | LL_220972 | membrane-associated ring finger (C3HC4) 8 | *MARCH8 | *MARCH-VIII,MIR,RNF178,c-MIR | NM_001002265 NM_001002266 NM_14502 | NP_001002265 NP_001002 |
| RING finger | LL_51283 | bifunctional apoptosis regulator | BFAR | BAR,RNF47 | NM_016561 | NP_057645 |
| RING finger | LL_29128 | ubiquitin-like, containing PHD and RING finger domains, 1 | UHRF1 | ICBP90,Np95,RNF106,hNP95 | NM_001048201 NM_013282 | NP_001041666 NP_037414 |
| HECT | LL_7337 | human papilloma virus E6-associated protein | UBE3A | E6-AP,EPVE6AP,HPV E6A,E3A,Angelman syndrome | NM_000462 NM_130838 NM_130839 | NP_000453 NP_570853 NP |
| HECT | LL_83737 | itchy homolog E3 ubiquitin protein ligase (mouse) | ITCH | AIF4,AIF4,NAPP1,dJ46801.1 | NM_031483 | NP_113671 |
| HECT | LL_11060 | WW domain containing E3 ubiquitin protein ligase 2 | WWP2 | AIP2,Wwp2-like | NM_007014 NM_199423 NM_199424 | NP_008945 NP_955455 NP |
| HECT | LL_23327 | neural precursor-expressed, developm. down-regulated 4-like | NEDD4L | FLJ33870,KIAA0439,RSP5,hNedd4-2 | NM_015277 | NP_056092 |
| HECT | LL_51366 | ubiquitin protein ligase E3 component n-recognin 5 | UBR5 | DD5,EDD,EDD1,FLJ11310,HYD | NM_015902 | NP_056986 |
| HECT | LL_64750 | SMAD specific E3 ubiquitin protein ligase 2 | SMURF2 | DKFZp686F0270,MGC138150 | NM_022739 | NP_073576 |
| HECT | LL_57520 | HECT, C2 and WW domain containing E3 ligase 2 | HECW2 | DKFZp686M17164,NEDL2 | NM_020760 | NP_065811 |
| HECT | LL_8916 | hect domain and RLD 3 | HERC3 | KIAA0032 | NM_014606 | NP_055421 |
| HECT | LL_51191 | hect domain and RLD 5 | HERC5 | CEB1,CEBP1 | NM_016323 | NP_057407 |
| HECT | LL_57154 | SMAD specific E3 ubiquitin protein ligase 1 | SMURF1 | KIAA1625 | NM_020429 NM_181349 | NP_065162 NP_851994 |
| HECT | LL_4734 | neural precursor-expressed, developm. down-regulated 4 | NEDD4 | KIAA0093 | NM_006154 NM_198400 | NP_006154 NP_940682 |
| HECT | LL_57531 | HECT domain and ankyrin repeat containing, E3 ligase 1 | HACE1 | - | NM_020771 | NP_065822 |
| HECT | LL_8924 | hect domain and RLD 2 | HERC2 | D15F37S1,DKFZp547P028,KIAA0393,jdf2,p528 | NM_004667 | NP_004658 |
| HECT | LL_8925 | hect domain and RCC1 (CHC1)-like domain (RLD) 1 | HERC1 | p532,p619 | NM_003922 | NP_003913 |

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|-------|-----------|---|--------------|---|--|--|
| HECT | LL_89910 | ubiquitin protein ligase E3B | UBE3B | FLJ45294 | NM_130466 NM_183415 | NP_569733 NP_904324 |
| HECT | LL_26091 | hect domain and RLD 4 | HERC4 | DKFZP564G092,KIAA1593 | NM_001017972 NM_015601 NM_022079 | NP_001017972 NP_056416 |
| HECT | LL_11059 | WW domain containing E3 ubiquitin protein ligase 1 | WWP1 | AIP5,DKFZp434D2111,Tiul1,hSDRP1 | NM_007013 | NP_008944 |
| HECT | LL_79654 | HECT domain containing 3 | HECTD3 | FLJ21156,FLJ31983,MGC161630,RP11-69J16.1 | NM_024602 | NP_078878 |
| HECT | LL_10075 | HECT, UBA and WWE domain containing 1 | HUWE1 | ARF-BP1,HECTH9,LASU1,MULE,UREB1 | NM_031407 | NP_113584 |
| HECT | LL_9690 | ubiquitin protein ligase E3C | UBE3C | KIAA0010,KIAA10 | NM_014671 | NP_055486 |
| HECT | LL_9320 | thyroid hormone receptor interactor 12 | TRIP12 | KIAA0045,MGC138849,MGC138850 | NM_004238 | NP_004229 |
| HECT | LL_143279 | HECT domain containing 2 | HECTD2 | FLJ16050 | NM_173497 NM_182765 | NP_775768 NP_877497 |
| HECT | LL_9870 | KIAA0317 | KIAA0317 | - | NM_001039479 | NP_001034568 |
| HECT | LL_55632 | KIAA1333 | KIAA1333 | FLJ20333 | NM_017769 | NP_060239 |
| HECT | LL_55008 | hect domain and RLD 6 | HERC6 | FLJ20637 | NM_001013000 NM_001013002 NM_001013003 | NP_001013018 NP_001013019 NP_001013020 |
| HECT | LL_23072 | HECT, C2 and WW domain containing E3 ligase 1 | HECW1 | KIAA0322,NEDL1 | NM_015052 | NP_055867 |
| HECT | LL_196515 | AF-1 specific protein phosphatase | FLJ30092 | KIAA0614 | XM_497354 XM_942665 | XP_497354 XP_947758 |
| HECT | LL_25831 | HECT domain containing 1 | HECTD1 | FLJ38315,KIAA1131 | NM_015382 | NP_056197 |
| F box | LL_6502 | S-phase kinase-associated protein 2 (p45) | SKP2 | FBL1,FBXL1,FLB1,MGC1366 | NM_005983 NM_032637 | NP_005974 NP_116026 |
| F box | LL_23291 | F-box and WD repeat domain containing 11 | FBXW11 | BTRC2,BTRCP2,FBW1B,FBXW1B,Fbw11,Hos | NM_012300 NM_033644 NM_033645 | NP_036432 NP_387448 NP_387449 |
| F box | LL_80204 | F-box protein 11 | FBXO11 | FBX11,FLJ12673,MGC44383,PRMT9,UG063H01,VIT1 | NM_012167 NM_018693 NM_025133 | NP_036299 NP_061163 NP_061164 |
| F box | LL_26234 | F-box and leucine-rich repeat protein 5 | FBXL5 | FBL4,FBL5,FLR1 | NM_012161 NM_033553 | NP_036293 NP_277077 |
| F box | LL_84678 | F-box and leucine-rich repeat protein 10 | FBXL10 | CXXC2,Fbl10,JHDM1B,PCCX2 | NM_001005366 NM_032590 | NP_001005366 NP_115979 |
| F box | LL_146330 | F-box and leucine-rich repeat protein 16 | FBXL16 | C16orf22,FLJ33735,Fbl16,MGC33974,c380A.1.1 | NM_153350 | NP_699181 |
| F box | LL_26270 | F-box protein 6 | FBXO6 | FBG2,FBG2,FBX6,Fbx6b | NM_018438 | NP_060908 |
| F box | LL_80028 | F-box and leucine-rich repeat protein 18 | FBXL19 | FLJ11467,FLJ38075,Fbl19 | NM_024963 | NP_079239 |
| F box | LL_200933 | F-box protein 45 | FBXO45 | Fbx45 | XM_931557 XM_946180 | XP_936650 XP_951273 |
| F box | LL_79791 | F-box protein 31 | FBXO31 | FBX14,FBXO14,FLJ22477,Fbx31 | NM_024735 | NP_079011 |
| F box | LL_25793 | F-box protein 7 | FBXO7 | DKFZp686B08113,FBX,FBXO7,FBX7 | NM_001033024 NM_012179 | NP_001028196 NP_036311 |
| F box | LL_26263 | F-box protein 22 | FBXO22 | FBX22,FLJ13986,MGC31799 | NM_012170 NM_147188 | NP_036302 NP_671717 |
| F box | LL_26224 | F-box and leucine-rich repeat protein 3 | FBXL3 | FBL3,FBL3A,FBXL3A | NM_012158 | NP_036290 |
| F box | LL_84961 | F-box and leucine-rich repeat protein 20 | FBXL20 | Fbl2,Fbl20,MGC15482 | NM_032875 | NP_116264 |
| F box | LL_55294 | F-box and WD repeat domain containing 7 | FBXW7 | AGO,CDC4,FBW7,FBX30,FBXW6,SEL-10,SEL10 | NM_001013415 NM_018315 NM_033632 | NP_001013433 NP_060785 |
| F box | LL_23403 | F-box protein 46 | FBXO46 | 20D7-FC4,FBXO34L,Fbx46 | NM_001080469 | NP_001073938 |
| F box | LL_26268 | F-box protein 9 | FBXO9 | FBX9,KIAA0936,NY-REN-57,VCIA1 | NM_012347 NM_033480 NM_033481 | NP_036479 NP_258441 NP_258442 |
| F box | LL_54461 | F-box and WD repeat domain containing 5 | FBXW5 | DKFZP434B205,Fbw5,MGC20962,RP11-229P13.10 | NM_018998 | NP_061871 |
| F box | LL_23194 | F-box and leucine-rich repeat protein 7 | FBXL7 | FBL6,FBL7 | NM_012304 | NP_036436 |
| F box | LL_23014 | F-box protein 21 | FBXO21 | DKFZp434G058,FBX21,FLJ90233,KIAA0875 | NM_015002 NM_033624 | NP_055817 NP_296373 |
| F box | LL_114907 | F-box protein 32 | FBXO32 | FLJ32424,Fbx32,MAFbx,MGC33610 | NM_058229 NM_148177 | NP_478136 NP_680482 |
| F box | LL_84893 | F-box protein, helicase, 18 | FBXO18 | FBH1,FLJ14590,Fbx18 | NM_032807 NM_178150 | NP_116196 NP_835363 |
| F box | LL_93611 | F-box protein 44 | FBXO44 | DKFZp781J0852,FBG3,FBX30,Fbx44,Fbx06a | NM_001014765 NM_033182 NM_183412 | NP_001014765 NP_149438 |
| F box | LL_254170 | F-box protein 33 | FBXO33 | Fbx33,c14_5247 | NM_203301 | NP_976046 |
| F box | LL_26272 | F-box protein 4 | FBXO4 | DKFZp547N213,FBX4,FLJ10141 | NM_012176 NM_033484 | NP_036308 NP_277019 |
| F box | LL_26190 | F-box and WD repeat domain containing 2 | FBXW2 | FBW2,Fwd2,MGC117371,Md6 | NM_012164 | NP_036296 |
| F box | LL_26271 | F-box protein 5 | FBXO5 | EM1,FBX5,Fbxo31 | NM_012177 | NP_036309 |
| F box | LL_22992 | F-box and leucine-rich repeat protein 11 | FBXL11 | CXXC8,FBL11,FBL7,JHDM1A,KIAA1004,LIL1NA | NM_012308 | NP_036440 |
| F box | LL_51725 | F-box protein 40 | FBXO40 | Fbx40,KIAA1195,MGC129902,MGC129903 | NM_016298 | NP_057382 |
| F box | LL_26260 | F-box protein 25 | FBXO25 | FBX25,MGC20256,MGC51975 | NM_012173 NM_183420 NM_183421 | NP_036305 NP_904356 NP_904357 |
| F box | LL_54850 | F-box and leucine-rich repeat protein 12 | FBXL12 | FLJ20188,Fbl12 | NM_017703 | NP_060173 |
| F box | LL_26267 | F-box protein 10 | FBXO10 | FBX10,FLJ41992,MGC149840 | NM_012166 | NP_036298 |
| F box | LL_222235 | F-box and leucine-rich repeat protein 13 | FBXL13 | FLJ38068,Fbl13,MGC21636 | NM_145032 | NP_659469 |
| F box | LL_130888 | F-box protein 36 | FBXO36 | FLJ37592,FLJ41090,Fbx36 | NM_174899 | NP_777559 |
| F box | LL_55336 | F-box and leucine-rich repeat protein 8 | FBXL8 | FBL8,FLJ11278,MGC19959 | NM_018378 | NP_060848 |
| F box | LL_8945 | beta-transducin repeat containing | BTRC | FBW1A,FBXW1A,FWD1,bTrCP,betaTrCP | NM_003939 NM_033637 | NP_003930 NP_378663 |
| F box | LL_26235 | F-box and leucine-rich repeat protein 4 | FBXL4 | FBL4,FBL5 | NM_012160 | NP_036292 |
| F box | LL_26261 | F-box protein 24 | FBXO24 | DKFZp434I1122,FBX24 | NM_012172 NM_033506 | NP_036304 NP_277041 |
| F box | LL_26273 | F-box protein 3 | FBXO3 | DKFZp564B092,FBA,FBX3 | NM_012175 NM_033406 | NP_036307 NP_208385 |
| F box | LL_345930 | lung specific F-box and DH domain containing protein | RP3-509119.5 | LFDFH | NM_001077706 | NP_001071174 |
| F box | LL_26233 | F-box and leucine-rich repeat protein 6 | FBXL6 | FBL6,PP14630 | NM_012162 NM_024555 | NP_036294 NP_078831 |
| F box | LL_81545 | F-box protein 38 | FBXO38 | Fbx38,MOKA,SP329 | NM_030793 NM_205836 | NP_110420 NP_995308 |
| F box | LL_54455 | F-box protein 42 | FBXO42 | Fbx42,KIAA1332 | NM_018994 | NP_061867 |
| F box | LL_6924 | transcription elongation factor B (SIII), polypeptide 3 | TCEB3 | SIII,TCEB3A,elongin A | NM_003198 | NP_003189 |
| F box | LL_26231 | leucine rich repeat containing 29 | LRRC29 | FBL9,FBXL9 | NM_001004055 NM_012163 | NP_001004055 NP_036295 |
| F box | LL_84085 | F-box protein 30 | FBXO30 | FLJ41030,Fbx30,MGC21674 | NM_032145 | NP_115521 |
| F box | LL_6468 | F-box and WD repeat domain containing 4 | FBXW4 | DAC,FBW4,FBWD4,SFM3,SHSF3 | NM_022039 | NP_071322 |
| F box | LL_26269 | F-box protein 8 | FBXO8 | DC10,FBS,FBX8 | NM_012180 | NP_036312 |
| F box | LL_126433 | F-box protein 27 | FBXO27 | FBG5,Fbx27 | NM_178820 | NP_849142 |
| F box | LL_899 | cyclin F | CCNF | FBX1,FBXO1 | NM_001761 | NP_001752 |
| F box | LL_144699 | F-box and leucine-rich repeat protein 14 | FBXL14 | Fbl14,MGC40195 | NM_152441 | NP_689654 |
| F box | LL_26259 | F-box and WD repeat domain containing 8 | FBXW8 | FBW6,FBW8,FBX29,FBXO29,MGC33534 | NM_012174 NM_153348 | NP_036306 NP_699179 |
| F box | LL_55030 | F-box protein 34 | FBXO34 | CGI-301,FLJ20725,Fbx34,MGC126434,MGC126435 | NM_017943 | NP_060413 |
| F box | LL_201456 | F-box protein 15 | FBXO15 | FBX15,MGC39671 | NM_152676 | NP_689889 |
| F box | LL_25827 | F-box and leucine-rich repeat protein 2 | FBXL2 | DKFZP564P0622,FBL2,FBL3 | NM_012157 | NP_036289 |
| F box | LL_150726 | F-box protein 41 | FBXO41 | FLJ37709,Fbx41 | NM_001080410 | NP_001073879 |
| F box | LL_115290 | F-box protein 17 | FBXO17 | FBG4,FBXO26,FLJ11798,FLJ25205,Fbx17 | NM_024907 NM_148169 | NP_079183 NP_680474 |
| F box | LL_23219 | F-box protein 28 | FBXO28 | FLJ10766,Fbx28,KIAA0483 | NM_015176 | NP_055991 |
| F box | LL_157574 | F-box protein 16 | FBXO16 | FBX16,MGC125923,MGC125924,MGC125925 | NM_172366 | NP_758954 |
| F box | LL_26232 | F-box protein 2 | FBXO2 | FBG1,FBX2,Fbs1,NFB42 | NM_012168 | NP_036300 |
| F box | LL_79176 | F-box and leucine-rich repeat protein 15 | FBXL15 | FBXO37,FLJ16137,Fbl15,MGC11279,PSD | NM_024326 | NP_077302 |

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| DDB1-like | LL.23450 | splicing factor 3b, subunit 3, 130kDa | SF3B3 | KIAA0017 RSE1 SAP130 SF3b130 STAF130 | NM_012426 | NP_036558 |
| DDB1-like | LL.1642 | damage-specific DNA binding protein 1, 127kDa | DDB1 | DDBA UV-DDB1 XAP1 XPCE XPE XPE-BF | NM_001923 | NP_001914 |
| DDB1-like | LL.29894 | cleavage and polyadenylation specific factor 1, 160kDa | CPSF1 | CPSF160 HSU37012 P/cl.18 | NM_013291 | NP_037423 |
| BTB | LL.57626 | kelch-like 1 (Drosophila) | KLHL1 | FLJ30047 KIAA1490,MRP2 | NM_020866 | NP_065917 |
| BTB | LL.10472 | zinc finger protein 238 | ZNF238 | C2H2-171,RP58,TAZ-1,ZBTB18 | NM_006352 NM_205768 | NP_006343 NP_991331 |
| BTB | LL.3959 | lectin, galactoside-binding, soluble, 3 binding protein | LGALS3BP | 90K_MAC-2-BP | NM_005567 | NP_005558 |
| BTB | LL.284697 | BTB (POZ) domain containing 8 | BTBD8 | - | NM_183242 | NP_899065 |
| BTB | LL.26249 | kelch-like 3 (Drosophila) | KLHL3 | FLJ40871, KIAA1129, MGC44594 | NM_017415 | NP_059111 |
| BTB | LL.283518 | K channel regulator | KCNRG | DLTET | NM_173605 NM_199464 | NP_775876 NP_955751 |
| BTB | LL.604 | B-cell CLL/lymphoma 6 (zinc finger protein 51) | BCL6 | BCL5, BCL6A, LAZ3, ZBTB27, ZNF51 | NM_001706 NM_138931 | NP_001697 NP_620309 |
| BTB | LL.23598 | POZ (BTB) and AT hook containing zinc finger 1 | PATZ1 | MAZR, PATZ, RIAZ, ZBTB19, ZNF278, ZSG, dJ400N23 | NM_014323 NM_032050 NM_032051 NM | NP_055138 NP_114439 NP |
| BTB | LL.3736 | K voltage-gated channel, shaker-related subfamily, member 1 | KCNA1 | AEAK_EA1, HBK1, HUK1, KV1.1, MBK1, MK1, RBK1 | NM_000217 | NP_000208 |
| BTB | LL.3745 | K voltage-gated channel, Shab-related subfamily, member 1 | KCNB1 | DRK1, KV2.1, h-DRK1 | NM_004975 | NP_004966 |
| BTB | LL.79798 | armadillo repeat containing 5 | ARMC5 | FLJ00019, FLJ13063 | NM_024742 | NP_079018 |
| BTB | LL.201501 | zinc finger and BTB domain containing 7C | ZBTB7C | APM-1, FLJ37907, ZBTB36 | NM_001039360 | NP_001034449 |
| BTB | LL.3752 | K voltage-gated channel, Shal-related subfamily, member 3 | KCND3 | KCND3L, KCND3S, KSHIVB, KV4.3 | NM_004980 NM_172198 | NP_004971 NP_751948 |
| BTB | LL.53339 | BTB (POZ) domain containing 1 | BTBD1 | C13orf1, NSSATP8 | NM_001011885 NM_025238 | NP_001011885 NP_079514 |
| BTB | LL.55213 | RCC1 and BTB (POZ) domain containing protein 1 | RCBTB1 | CLLD7, CLLL7, GLPMGC33184, RP11-185C18.1 | NM_018191 | NP_060661 |
| BTB | LL.255877 | B-cell CLL/lymphoma 6, member B (zinc finger protein) | BCL6B | BAZF, ZBTB28, ZNF62 | NM_181844 | NP_862827 |
| BTB | LL.51341 | zinc finger and BTB domain containing 7A | ZBTB7A | FBI-1, FBI11, LRF, MGC99631, ZBTB7, pokemon | NM_015898 | NP_056982 |
| BTB | LL.26137 | zinc finger and BTB domain containing 20 | ZBTB20 | DKFZp566F123, DPZF, HOF, ODA-8S, ZNF288 | NM_015642 | NP_056457 |
| BTB | LL.55892 | myoneurin | MYNN | OSZF, SBBIZ1, ZBTB31 | NM_018657 | NP_061127 |
| BTB | LL.9903 | kelch-like 21 (Drosophila) | KLHL21 | KIAA0469, MGC99635 | NM_014851 | NP_055666 |
| BTB | LL.27252 | kelch-like 20 (Drosophila) | KLHL20 | KHLHX, KLEIP, KLHLX, RP3-383J4.3 | NM_014458 | NP_055273 |
| BTB | LL.151230 | kelch-like 23 (Drosophila) | KLHL23 | DITHP, FLJ37812, MGC22679, MGC2610 | NM_144711 | NP_653312 |
| BTB | LL.55727 | BTB (POZ) domain containing 7 | BTBD7 | DKFZp686N0544, FUP1, MGC48310 | NM_001002860 NM_018167 | NP_001002860 NP_060637 |
| BTB | LL.57621 | zinc finger and BTB domain containing 2 | ZBTB2 | ZNF437 | NM_020861 | NP_065912 |
| BTB | LL.51043 | zinc finger and BTB domain containing 7B | ZBTB7B | DKFZp686G01254, ZBTB15, ZFP67, c-Krox, hcKrox | NM_015872 | NP_056956 |
| BTB | LL.114781 | BTB (POZ) domain containing 9 | BTBD9 | FLJ32945, KIAA1880 | NM_152733 | NP_689946 |
| BTB | LL.64395 | germ cell-less homolog 1 (Drosophila) | GMCL1 | BTBD13, GCL, GCL1 | NM_178439 | NP_848526 |
| BTB | LL.57684 | zinc finger and BTB domain containing 26 | ZBTB26 | KIAA1572, ZNF481, bioref | NM_020924 | NP_065975 |
| BTB | LL.22890 | zinc finger and BTB domain containing 1 | ZBTB1 | KIAA0997 | NM_014950 | NP_055765 |
| BTB | LL.166793 | zinc finger protein 509 | ZNF509 | FLJ38559, MGC126279, MGC126280 | NM_145291 | NP_660334 |
| BTB | LL.9841 | zinc finger and BTB domain containing 24 | ZBTB24 | BIF1, PATZ2, ZNF450 | NM_014797 | NP_055612 |
| BTB | LL.51479 | ankyrin repeat and FYVE domain containing 1 | ANKFY1 | ANKHZN, DKFZp686M19106, KIAA1255, ZFYVE14 | NM_016376 NM_020740 | NP_057460 NP_065791 |
| BTB | LL.377007 | kelch-like 30 (Drosophila) | KLHL30 | FLJ43374 | NM_198582 | NP_940984 |
| BTB | LL.57659 | zinc finger and BTB domain containing 4 | ZBTB4 | KAISO-L1, KIAA1538 | NM_020899 | NP_065950 |
| BTB | LL.284252 | K channel tetramerisation domain containing 1 | KCTD1 | C18orf5 | NM_198991 | NP_945342 |
| BTB | LL.79842 | zinc finger and BTB domain containing 3 | ZBTB3 | FLJ23392 | NM_024784 | NP_079060 |
| BTB | LL.3090 | hypermethylated in cancer 1 | HIC1 | ZBTB29, hic-1 | NM_001098202 NM_006497 | NP_001091672 NP_006488 |
| BTB | LL.8139 | giant axonal neuropathy (gigaxonin) | GAN | FLJ38059, GAN1, KLHL16 | NM_022041 | NP_071324 |
| BTB | LL.55643 | BTB (POZ) domain containing 2 | BTBD2 | - | NM_017797 | NP_060267 |
| BTB | LL.7704 | zinc finger and BTB domain containing 16 | ZBTB16 | PLZF, ZNF145 | NM_001018011 NM_006006 | NP_001018011 NP_005997 |
| BTB | LL.65986 | zinc finger and BTB domain containing 10 | ZBTB10 | FLJ12752, RINZF | NM_023929 | NP_076418 |
| BTB | LL.8405 | speckle-type POZ protein | SPOP | TEF2 | NM_001007226 NM_001007227 NM_001007 | NP_001007227 NP_001007 |
| BTB | LL.23221 | Rho-related BTB domain containing 2 | RHOBTB2 | DBC2, KIAA0717 | NM_015178 | NP_055993 |
| BTB | LL.7690 | zinc finger protein 131 | ZNF131 | pHZ-10 | NM_003432 | NP_003423 |
| BTB | LL.1102 | RCC1 and BTB (POZ) domain containing protein 2 | RCBTB2 | CHC1L | NM_001268 | NP_001259 |
| BTB | LL.653121 | zinc finger and BTB domain containing 8 | ZBTB8 | BOZF1, FLJ90065, MGC17919 | NM_001040441 | NP_001035531 |
| BTB | LL.9817 | kelch-like ECH-associated protein 1 | KEAP1 | InrT, KIAA0132, KLHL19 | NM_012289 NM_203500 | NP_036421 NP_987096 |
| BTB | LL.64410 | kelch-like 25 (Drosophila) | KLHL25 | ENC-2, ENC2, FLJ12587 | NM_022480 | NP_071925 |
| BTB | LL.60468 | BTB and CNC homology 1, bLZ transcription factor 2 | BACH2 | - | NM_021813 | NP_068585 |
| BTB | LL.84541 | kelch repeat and BTB (POZ) domain containing 8 | KBTBD8 | KIAA1842, TA-KRP | NM_032505 | NP_115894 |
| BTB | LL.9886 | Rho-related BTB domain containing 1 | RHOBTB1 | KIAA0740, MGC33059, MGC33841 | NM_001032380 NM_014836 NM_198225 | NP_001027552 NP_055651 |
| BTB | LL.22903 | BTB (POZ) domain containing 3 | BTBD3 | KIAA0952, MGC130038, MGC130039, dJ742J24.1 | NM_014962 NM_181443 | NP_055777 NP_852108 |
| BTB | LL.115207 | K channel tetramerisation domain containing 12 | KCTD12 | C13orf2, FLJ33073, KIAA1778, PFET1 | NM_138444 | NP_612453 |
| BTB | LL.92799 | SH3KBP1 binding protein 1 | SHKBP1 | PP203, Sbl1 | NM_138392 | NP_612401 |
| BTB | LL.23119 | hypermethylated in cancer 2 | HIC2 | HRG22, KIAA1020, ZBTB30 | NM_015094 | NP_055909 |
| BTB | LL.90135 | BTB (POZ) domain containing 6 | BTBD6 | BDPL | NM_033271 | NP_150374 |
| BTB | LL.571 | BTB and CNC homology 1, bLZ transcription factor 1 | BACH1 | - | NM_001011545 NM_001186 NM_206866 | NP_001011545 NP_001177 |
| BTB | LL.84078 | kelch repeat and BTB (POZ) domain containing 7 | KBTBD7 | DKFZP434E2318 | NM_032138 | NP_115514 |
| BTB | LL.59349 | kelch-like 12 (Drosophila) | KLHL12 | C3IP1, DKIR, FLJ27152 | NM_021633 | NP_067646 |
| BTB | LL.3652 | intracisternal A particle-promoted polypeptide | IPP | KLHL27 | NM_005897 | NP_005888 |
| BTB | LL.22836 | Rho-related BTB domain containing 3 | RHOBTB3 | KIAA0878 | NM_014899 | NP_055714 |
| BTB | LL.84280 | BTB (POZ) domain containing 10 | BTBD10 | GMRP-1, GMRP1, MGC13007 | NM_032320 | NP_115696 |
| BTB | LL.9880 | zinc finger and BTB domain containing 39 | ZBTB39 | KIAA0352 | NM_014830 | NP_055645 |
| BTB | LL.25841 | ankyrin repeat and BTB (POZ) domain containing 2 | ABTB2 | DKFZP586C1619 | NM_145804 | NP_665803 |
| BTB | LL.3104 | zinc finger and BTB domain containing 48 | ZBTB48 | HKR3, pp9964 | NM_005341 | NP_005332 |
| BTB | LL.221527 | zinc finger and BTB domain containing 12 | ZBTB12 | Bat9, C6orf46, D6S59E, G10, NG35 | NM_181842 | NP_862825 |
| BTB | LL.253980 | K channel tetramerisation domain containing 13 | KCTD13 | FKSG86, PDIP1, POLDIP1 | NM_178863 | NP_849194 |
| BTB | LL.84614 | zinc finger and BTB domain containing 37 | ZBTB37 | D430004I08Rik, MGC2629 | NM_032522 | NP_115911 |
| BTB | LL.79047 | K channel tetramerisation domain containing 15 | KCTD15 | MGC25497, MGC2628 | NM_024076 | NP_076981 |
| BTB | LL.3737 | K voltage-gated channel, shaker-related subfamily, member 2 | KCNA2 | HBK5, HK4, HUKIV, KV1.2, NGK1, RBK2 | NM_004974 | NP_004965 |
| BTB | LL.7126 | tumor necrosis factor, alpha-induced protein 1 (endothelial) | TNFAIP1 | B12, B61, EDPI, MGC2317 | NM_021137 | NP_066960 |
| BTB | LL.8216 | leucine-zipper-like transcription regulator 1 | LZTR1 | LZTR-1, MGC21205, TCFL2 | NM_006767 | NP_006758 |

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|-----|-----------|--|-----------|--|------------------------------------|-------------------------|
| BTB | LL.143879 | kelch repeat and BTB (POZ) domain containing 3 | KBTBD3 | BKLDH3.FLJ30685 | NM 152433 NM 198439 | NP 689646 NP 940841 |
| BTB | LL.253461 | zinc finger and BTB domain containing 38 | ZBTB38 | FLJ22332.FLJ31131.FLJ35036 | NM 001080412 | NP 001073881 |
| BTB | LL.64412 | GDNF-inducible zinc finger protein 1 | GZF1 | ZBTB23.ZNF336 | NM 022482 | NP 071927 |
| BTB | LL.54442 | K channel tetramerisation domain containing 5 | KCTD5 | FLJ20040 | NM 018992 | NP 061865 |
| BTB | LL.3741 | K voltage-gated channel, shaker-related subfamily, member 5 | KCNA5 | HCK1.HK2.HPCN1.KV1.5.PCN1 | NM 002234 | NP 002225 |
| BTB | LL.25998 | inhibitor of Bruton agammaglobulinemia tyrosine kinase | IBTK | BTBK.KIAA1417 | NM 015525 | NP 056340 |
| BTB | LL.80325 | ankyrin repeat and BTB (POZ) domain containing 1 | ABTB1 | BPOZ.EF1ABF.MGC20585.PP2259 | NM 032548 NM 172027 NM 172028 | NP 115937 NP 742024 NP |
| BTB | LL.10625 | influenza virus NS1A binding protein | IVNS1.ABP | FLARA3.KIAA0850.ND1.NS-1.NS1-BP.NS1BP | NM 016389 NM 006469 | NP 057473 NP 006460 |
| BTB | LL.89890 | kelch repeat and BTB (POZ) domain containing 6 | KBTBD6 | DKFZp547E1912.DKFZp547M073 | NM 152903 | NP 690867 |
| BTB | LL.51133 | K channel tetramerisation domain containing 3 | KCTD3 | MGC43935.NY-REN-45 | NM 016121 | NP 057205 |
| BTB | LL.388419 | galectin-3-binding protein-like | LOC388419 | - | NM 001080466 | NP 001073935 |
| BTB | LL.339745 | hypothetical protein LOC339745 | LOC339745 | - | NM 001001664 | NP 001001664 |
| BTB | LL.123103 | similar to kelch-like 9 | LOC123103 | - | XM 063481 | XP 063481 |
| BTB | LL.51088 | kelch-like 5 (Drosophila) | KLHL5 | - | NM 001007075 NM 015990 NM 199039 | NP 001007076 NP 057074 |
| BTB | LL.3749 | K voltage-gated channel, Shaw-related subfamily, member 4 | KCNC4 | HKSHIIC.KSHIIC.KV3.4.MGC126818 | NM 001039574 NM 004978 NM 153763 | NP 001034663 NP 004969 |
| BTB | LL.114792 | kelch-like 32 (Drosophila) | KLHL32 | BKLDH5.KIAA1900 | NM 052904 | NP 443136 |
| BTB | LL.56062 | kelch-like 4 (Drosophila) | KLHL4 | DKELCHL.KHL4.KIAA1687 | NM 019117 NM 057162 | NP 061990 NP 476503 |
| BTB | LL.84878 | zinc finger and BTB domain containing 45 | ZBTB45 | DKFZp547H249.FLJ14486.ZNF499 | NM 032792 | NP 116181 |
| BTB | LL.9923 | zinc finger and BTB domain containing 40 | ZBTB40 | KIAA0478.MGC133098 | NM 001083621 NM 014870 | NP 001077090 NP 055685 |
| BTB | LL.3787 | K voltage-gated channel, delayed-rectifier, member 1 | KCNS1 | KV9.1 | NM 002251 | NP 002242 |
| BTB | LL.3755 | K voltage-gated channel, subfamily G, member 1 | KCNG1 | K13.KCNG.KV6.1.MGC12878.kH2 | NM 002237 NM 172318 | NP 002238 NP 758529 |
| BTB | LL.27107 | zinc finger and BTB domain containing 11 | ZBTB11 | FLJ13426.MGC133303.ZNF-U69274 | NM 014415 | NP 055230 |
| BTB | LL.154881 | K channel tetramerisation domain containing 7 | KCTD7 | FLJ32069 | NM 153033 | NP 694578 |
| BTB | LL.79786 | chromosome 16 open reading frame 44 | C16orf44 | FLJ12543 | NM 024731 | NP 079007 |
| BTB | LL.386618 | K channel tetramerisation domain containing 4 | KCTD4 | ba321C24.3 | NM 198404 | NP 940686 |
| BTB | LL.49854 | zinc finger protein 295 | ZNF295 | DKFZp781N1974.ZBTB21 | NM 001098402 NM 001098403 NM 02072 | NP 001091872 NP 0010911 |
| BTB | LL.10773 | zinc finger and BTB domain containing 6 | ZBTB6 | ZID.ZNF482 | NM 006626 | NP 006617 |
| BTB | LL.881 | calicin | CCIN | - | NM 005893 | NP 005884 |
| BTB | LL.140685 | zinc finger and BTB domain containing 46 | ZBTB46 | BTBD4.FLJ13502.RINZF.ZNF340 | NM 025224 | NP 079500 |
| BTB | LL.317719 | kelch-like 10 (Drosophila) | KLHL10 | FLJ32662 | NM 152467 | NP 689680 |
| BTB | LL.3748 | K voltage-gated channel, Shaw-related subfamily, member 3 | KCNC3 | KSHIIC.KV3.3.SCA13 | NM 004977 | NP 004968 |
| BTB | LL.10324 | kelch repeat and BTB (POZ) domain containing 10 | KBTBD10 | SARCOSIN | NM 006063 | NP 006054 |
| BTB | LL.3746 | K voltage-gated channel, Shaw-related subfamily, member 1 | KCNC1 | KV3.1.KV4.MGC129855.NGK2 | NM 004976 | NP 004967 |
| BTB | LL.200845 | K channel tetramerisation domain containing 6 | KCTD6 | MGC27385 | NM 153331 | NP 699162 |
| BTB | LL.401265 | kelch-like 31 (Drosophila) | KLHL31 | BKLDH6.KBTBD1.KLHL.ba3451.23.2 | NM 001003760 | NP 001003760 |
| BTB | LL.138151 | BTB (POZ) domain containing 14A | BTBD14A | BTBD14.MGC23427 | NM 144653 | NP 653254 |
| BTB | LL.3747 | K voltage-gated channel, Shaw-related subfamily, member 2 | KCNC2 | KV3.2.MGC138196 | NM 139136 NM 139137 NM 153748 | NP 631874 NP 631875 NP |
| BTB | LL.9278 | zinc finger and BTB domain containing 22 | ZBTB22 | BING1.ZBTB22A.ZNF297.ZNF297A.fru.fruitless | NM 005453 | NP 005444 |
| BTB | LL.57565 | kelch-like 14 (Drosophila) | KLHL14 | - | NM 020805 | NP 065856 |
| BTB | LL.27033 | zinc finger and BTB domain containing 32 | ZBTB32 | FAXF.FAZF.Rog.TZFP.ZNF538 | NM 014383 | NP 055198 |
| BTB | LL.55295 | kelch-like 26 (Drosophila) | KLHL26 | FLJ11078 | NM 018316 | NP 060786 |
| BTB | LL.23099 | zinc finger and BTB domain containing 43 | ZBTB43 | ZBTB22B.ZNF-X.ZNF297B | NM 014007 | NP 054726 |
| BTB | LL.9312 | K voltage-gated channel, Shab-related subfamily, member 2 | KCNB2 | KV2.2 | NM 004770 | NP 004761 |
| BTB | LL.112939 | BTB (POZ) domain containing 14B | BTBD14B | FLJ37383.NAC1 | NM 052876 | NP 443108 |
| BTB | LL.3744 | K voltage-gated channel, shaker-related subfamily, member 10 | KCNA10 | Kcn1.Kv1.8 | NM 005549 | NP 005540 |
| BTB | LL.55975 | kelch-like 7 (Drosophila) | KLHL7 | KLHL6.SBBI26 | NM 001031710 NM 018846 | NP 001026880 NP 061334 |
| BTB | LL.3743 | K voltage-gated channel, shaker-related subfamily, member 7 | KCNA7 | HAK6.KV1.7 | NM 031886 | NP 114092 |
| BTB | LL.3742 | K voltage-gated channel, shaker-related subfamily, member 6 | KCNA6 | HBK2.KV1.6 | NM 002235 | NP 002226 |
| BTB | LL.55175 | kelch-like 11 (Drosophila) | KLHL11 | FLJ10572 | NM 018143 | NP 060613 |
| BTB | LL.131377 | kelch repeat and BTB (POZ) domain containing 5 | KBTBD5 | FLJ32015.MGC125350.SRYP | NM 152393 | NP 689606 |
| BTB | LL.114818 | kelch-like 29 (Drosophila) | KLHL29 | KBTBD9 | XM 001134449 XM 940375 | XP 001134449 XP 945468 |
| BTB | LL.283219 | K channel tetramerisation domain containing 21 | KCTD21 | - | NM 001029859 | NP 001025030 |
| BTB | LL.257240 | kelch-like 34 (Drosophila) | KLHL34 | FLJ34960.MGC125650 | NM 153270 | NP 695002 |
| BTB | LL.29068 | zinc finger and BTB domain containing 44 | ZBTB44 | BTBD15.HSPC063 | NM 014155 | NP 054874 |
| BTB | LL.57563 | kelch-like 8 (Drosophila) | KLHL8 | FLJ46304.KIAA1378 | NM 020803 | NP 065854 |
| BTB | LL.57528 | K channel tetramerisation domain containing 16 | KCTD16 | DKFZp781A1155.KIAA1317.MGC138167 | NM 020768 | NP 065819 |
| BTB | LL.360023 | zinc finger and BTB domain containing 41 | ZBTB41 | DKFZp686C06120.FLJ36199.FRBZ1.RP11-469L3.1 | NM 194314 | NP 919290 |
| BTB | LL.54793 | K channel tetramerisation domain containing 9 | KCTD9 | FLJ20038 | NM 017634 | NP 060104 |
| BTB | LL.166348 | kelch domain containing 6 | KLHDC6 | DKFZp779E2271.FLJ46299 | NM 207335 | NP 997218 |
| BTB | LL.89857 | kelch-like 6 (Drosophila) | KLHL6 | FLJ00029 | NM 130446 | NP 569713 |
| BTB | LL.27012 | K channel, subfamily V, member 1 | KCNV1 | HNA.KCNB3.KV2.3.KV8.1 | NM 014379 | NP 055194 |
| BTB | LL.7597 | zinc finger and BTB domain containing 25 | ZBTB25 | KUP.ZNF46 | NM 006977 | NP 008908 |
| BTB | LL.3790 | K voltage-gated channel, delayed-rectifier, member 3 | KCNS3 | KV9.3.MGC9481 | NM 002252 | NP 002243 |
| BTB | LL.23510 | K channel tetramerisation domain containing 2 | KCTD2 | KIAA0176 | NM 015353 | NP 056168 |
| BTB | LL.9920 | kelch repeat and BTB (POZ) domain containing 11 | KBTBD11 | KLHDC7C.KIAA0711 | NM 014867 | NP 055682 |
| BTB | LL.3751 | K voltage-gated channel, Shal-related subfamily, member 2 | KCND2 | KIAA1044.KV4.2.MGC119702.MGC119703.RK5 | NM 012281 | NP 036413 |
| BTB | LL.3739 | K voltage-gated channel, shaker-related subfamily, member 4 | KCNA4 | HBK4.HK1.HPCN2.HUKII.KCNA4L.KCNA8.KV1.4 | NM 002233 | NP 002224 |
| BTB | LL.121551 | BTB (POZ) domain containing 11 | BTBD11 | FLJ33957.FLJ42845 | NM 001017523 NM 001018072 NM 15232 | NP 001017523 NP 0010181 |
| BTB | LL.57542 | kelch domain containing 5 | KLHDC5 | KIAA1340.MGC131714 | NM 020782 | NP 065833 |
| BTB | LL.3788 | K voltage-gated channel, delayed-rectifier, member 2 | KCNS2 | KV9.2 | NM 020697 | NP 065748 |
| BTB | LL.3738 | K voltage-gated channel, shaker-related subfamily, member 3 | KCNA3 | HGK5.HLK3.HPCN3.HUKIII.KV1.3.MK3.PCN3 | NM 002232 | NP 002233 |
| BTB | LL.7709 | zinc finger and BTB domain containing 17 | ZBTB17 | MIZ-1.ZNF151.pH3-67 | NM 003443 | NP 003434 |
| BTB | LL.83892 | K channel tetramerisation domain containing 10 | KCTD10 | FLJ41739.MSTP028.ULRO61 | NM 031954 | NP 114160 |
| BTB | LL.54813 | kelch-like 28 (Drosophila) | KLHL28 | BTBD5.FLJ20081 | NM 017658 | NP 060128 |
| BTB | LL.25948 | kelch repeat and BTB (POZ) domain containing 2 | KBTBD2 | BKLDH1 | NM 015483 | NP 056298 |

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|-----|-----------|---|----------|--|---------------------|---------------------|
| BTB | LL.65987 | K channel tetramerisation domain containing 14 | KCTD14 | MGC2376 | NM_023930 | NP_076419 |
| BTB | LL.55709 | kelch repeat and BTB (POZ) domain containing 4 | KBTD4 | BKLD4,FLJ10450,HSPC252 | NM_016506 NM_018095 | NP_057590 NP_060565 |
| BTB | LL.8507 | ectodermal-neural cortex (with BTB-like domain) | ENC1 | CCL28,ENC-1,FLJ39259,KLHL35,NRPB,PIG10 | NM_003633 | NP_003624 |
| BTB | LL.10009 | zinc finger and BTB domain containing 33 | ZBTB33 | ZNF-kaiso,ZNF348 | NM_006777 | NP_006768 |
| BTB | LL.79734 | K channel tetramerisation domain containing 17 | KCTD17 | FLJ12242 | NM_024681 | NP_078957 |
| BTB | LL.23276 | kelch-like 18 (Drosophila) | KLHL18 | FLJ13703,KIAA0795 | NM_025010 | NP_079286 |
| BTB | LL.339451 | kelch-like 17 (Drosophila) | KLHL17 | RP11-5407.6 | NM_198317 | NP_938073 |
| BTB | LL.222658 | K channel tetramerisation domain containing 20 | KCTD20 | C6orf69,MGC14254,dJ108K11.3 | NM_173562 | NP_775833 |
| BTB | LL.340359 | hypothetical protein LOC340359 | C8ORFK36 | - | NM_001081675 | NP_001075144 |
| BTB | LL.80311 | kelch-like 15 (Drosophila) | KLHL15 | MGC126148,MGC126149 | NM_030624 | NP_085127 |
| BTB | LL.84861 | kelch-like 22 (Drosophila) | KLHL22 | KEIHL | NM_032775 | NP_116164 |
| BTB | LL.7541 | zinc finger protein 161 homolog (mouse) | ZFP161 | MGC126126,ZBTB14,ZF5,ZNF478 | NM_003409 | NP_003400 |
| BTB | LL.386617 | K channel tetramerisation domain containing 8 | KCTD8 | - | NM_198353 | NP_938167 |
| BTB | LL.221504 | zinc finger and BTB domain containing 9 | ZBTB9 | MGC23166 | NM_152735 | NP_689948 |
| BTB | LL.9925 | zinc finger and BTB domain containing 5 | ZBTB5 | - | NM_014872 | NP_055687 |
| BTB | LL.196872 | hypothetical protein MGC23270 | MGC23270 | - | NM_152646 | NP_689859 |
| BTB | LL.54800 | kelch-like 24 (Drosophila) | KLHL24 | DRE1,FLJ25796 | NM_017644 | NP_060114 |
| BTB | LL.55958 | kelch-like 9 (Drosophila) | KLHL9 | FLJ21815 | NM_018847 | NP_061335 |
| BTB | LL.170850 | K voltage-gated channel, subfamily G, member 3 | KCNG3 | KV10.1,KV6.3 | NM_133329 NM_172344 | NP_579875 NP_758847 |
| BTB | LL.90293 | kelch-like 13 (Drosophila) | KLHL13 | BKLD2,FLJ10262,KIAA1309,MGC74791 | NM_033495 | NP_277030 |
| BTB | LL.3750 | K voltage-gated channel, Shal-related subfamily, member 1 | KCND1 | KV4.1 | NM_004979 | NP_004970 |
| BTB | LL.84464 | BTB (POZ) domain containing 12 | BTBD12 | KIAA1784,KIAA1987 | NM_032444 | NP_115820 |

Origin from Claudio A. P. Joazeiro et al. Genome-Wide and Functional Annotation of Human E3 Ubiquitin Ligases Identifies MULAN, a Mitochondrial E3 that Regulates the Organelle's Dynamics and Signaling. PLOS one, 2008, 3(1): e1487.

| Antibody number | Detectable rate in cancerous tissues (%) | Detectable rate in paracancerous tissues (%) | Up or Down-regulation | Folds |
|-----------------|--|--|-----------------------|-----------|
| ab180856 | 3 | 4 | None | 0 |
| ab86560 | 1 | 1 | None | 0 |
| ab80396 | 0 | 0 | None | 0 |
| ab92324 | 92 | 89 | Up | 2.2 |
| ab113480 | 60 | 81 | Down | 7.8 |
| ab83237 | 13 | 28 | Down | 2.3 |
| ab123309 | 89 | 78 | Up | 1.3 |
| ab173988 | 0 | 0 | None | 0 |
| ab122419 | 0 | 0 | None | 0 |
| ab122022 | 75 | 73 | Up | 0.8 |
| ab2917 | 67 | 60 | Up | 2.6 |
| ab137074 | 27 | 31 | Up | 1.3 |
| ab98925 | 10 | 19 | Down | 2.7 |
| ab126759 | 13 | 9 | Down | 3.1 |
| ab102087 | 6 | 6 | Up | 3.1 |
| ab84127 | 0 | 1 | None | 0 |
| No | 0 | 0 | None | 0 |
| ab27692 | 0 | 0 | None | 0 |
| ab16030 | 51 | 88 | Down | 13 |
| ab3695 | 84 | 88 | Up | 3.7 |
| ab3692 | 93 | 87 | Up | 11.2 |
| ab182257 | 93 | 87 | Up | 3.2 |
| ab97918 | 89 | 85 | Up | 19 |
| ab191447 | 56 | 82 | Down | 7.5 |
| ab127043 | 88 | 82 | Up | 3.1 |
| ab9870 | 98 | 80 | Up | 19 |
| ab82896 | 90 | 78 | Up | 18 |
| ab197335 | 90 | 78 | Up | 8.9 |
| ab3694 | 42 | 78 | Down | 7.6 |
| ab133677 | 90 | 77 | Up | 3.2 |
| ab13710 | 89 | 75 | Up | 5.6 |
| ab127176 | 45 | 67 | Down | 3.4 |
| ab182551 | 86 | 56 | Up | 7.4 |
| ab135427 | 76 | 53 | Up | 6.7 |
| ab153837 | 88 | 51 | Up | 22 |
| ab96438 | 34 | 45 | Down | 1.9 |
| ab151452 | 34 | 45 | Down | 1.9 |
| ab168176 | 13 | 17 | None | 0 |
| ab151790 | 22 | 13 | Up | 1.8 |
| ab76066 | 20 | 11 | Up | 1.8 |
| ab118338 | 1 | 1 | None | 0 |
| No | 0 | 0 | None | 0 |
| No | 0 | 0 | None | 0 |
| ab99125 | 0 | 0 | None | 0 |
| ab74926 | 0 | 0 | None | 0 |
| ab213418 | 0 | 0 | None | 0 |
| ab213418 | 0 | 0 | None | 0 |
| ab200357 | 1 | 0 | None | 0 |
| ab180093 | 0 | 0 | None | 0 |
| ab167395 | 0 | 0 | None | 0 |
| ab164907 | 0 | 0 | None | 0 |
| ab163458 | 0 | 0 | None | 0 |
| ab145591 | 0 | 0 | None | 0 |
| ab142095 | 0 | 0 | None | 0 |
| ab107027 | 0 | 0 | None | 0 |
| ab110568 | 90 | 100 | Up | 4 |
| ab33915 | 88 | 100 | Up | 1.3 |
| ab191309 | 92 | 92 | Up | 10 |
| ab187642 | 80 | 92 | Up | 7.6 |
| ab72533 | 84 | 92 | Down | 6.1 |
| ab99090 | 71 | 92 | Up | 1.7 |
| ab84125 | 95 | 90 | Up | 28 |
| ab185099 | 80 | 90 | Up | 13 |
| ab36988 | 89 | 90 | Up | 11.7 |
| ab194577 | 87 | 90 | Up | 9.2 |
| ab58222 | 100 | 90 | Up | 8.1 |
| ab126758 | 75 | 90 | Up | 2.7 |
| ab26057 | 90 | 90 | Up | 2.3 |
| ab186750 | 86 | 90 | Up | 2 |

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|-----------------|----------|----------|-----------|-----------|
| ab111580 | 90 | 90 | Down | 0.9 |
| ab203198 | 42 | 36 | Up | 25.3 |
| ab122353 | 5 | 5 | Up | 18 |
| ab49268 | 67 | 89 | Up | 3.6 |
| ab169036 | 76 | 89 | Down | 3.1 |
| ab86738 | 89 | 89 | Up | 2.6 |
| ab3329 | 87 | 87 | Down | 3.2 |
| ab75110 | 60 | 85 | Down | 11 |
| ab74562 | 67 | 85 | Down | 7 |
| ab80061 | 87 | 85 | Down | 1 |
| ab151231 | 83 | 85 | Down | 0.6 |
| ab192032 | 90 | 82 | Up | 10 |
| ab22813 | 78 | 82 | Up | 3.1 |
| ab156583 | 87 | 82 | Up | 1.7 |
| ab173001 | 88 | 82 | Up | 1.6 |
| ab80129 | 80 | 81 | Up | 4.8 |
| ab139507 | 80 | 81 | Down | 2.1 |
| ab151601 | 75 | 80 | Down | 7.9 |
| ab151306 | 75 | 80 | Down | 3.2 |
| ab16780 | 80 | 80 | Up | 1.7 |
| ab113810 | 72 | 80 | None | 0 |
| ab151307 | 80 | 77 | Down | 3 |
| ab99378 | 76 | 77 | Up | 2.3 |
| ab192382 | 81 | 76 | Down | 3.5 |
| ab134611 | 67 | 76 | Down | 0.8 |
| ab154021 | 67 | 75 | Down | 11 |
| ab191505 | 78 | 75 | Down | 8.9 |
| ab47539 | 83 | 75 | Up | 3.2 |
| ab173899 | 80 | 74 | Down | 13 |
| ab186507 | 80 | 72 | Down | 9.1 |
| ab78393 | 41 | 72 | Down | 7.4 |
| ab80458 | 85 | 72 | Up | 5 |
| ab169188 | 90 | 72 | Up | 3 |
| ab57538 | 36 | 71 | Down | 15.7 |
| ab57048 | 71 | 71 | Down | 5.7 |
| ab74373 | 63 | 70 | Down | 5.1 |
| ab171732 | 76 | 70 | Up | 3.5 |
| ab64164 | 65 | 70 | Down | 2.3 |
| ab28636 | 72 | 70 | Up | 1.8 |
| ab128090 | 70 | 70 | Down | 1.2 |
| ab127548 | 65 | 70 | Up | 1 |
| ab104375 | 75 | 70 | Down | 0.8 |
| ab129315 | 78 | 70 | Down | 0.6 |
| ab129938 | 65 | 70 | None | 0 |
| ab23423 | 45 | 69 | Down | 7.6 |
| ab180850 | 78 | 69 | Up | 2 |
| ab86207 | 68 | 68 | Down | 5.1 |
| ab122022 | 15 | 67 | Down | 13.1 |
| ab154635 | 56 | 67 | Down | 6.8 |
| ab111840 | 61 | 67 | Up | 3.9 |
| ab171659 | 67 | 66 | Down | 2.9 |
| ab134927 | 65 | 66 | Up | 2.7 |
| ab83811 | 73 | 65 | Down | 9 |
| ab84321 | 56 | 65 | Up | 8.1 |
| ab32027 | 80 | 65 | Up | 4.1 |
| ab200389 | 78 | 65 | Down | 1.2 |
| ab169288 | 77 | 65 | Down | 1.1 |
| ab4184 | 80 | 62 | Down | 10 |
| ab28672 | 40 | 62 | Up | 2.1 |
| ab51475 | 59 | 62 | Up | 1.2 |
| ab133200 | 66 | 62 | Down | 0.8 |
| ab86383 | 68 | 61 | Up | 6.5 |
| ab118651 | 66 | 60 | Down | 3.7 |
| ab178416 | 55 | 60 | Up | 1.8 |
| ab92730 | 60 | 60 | Up | 1.5 |
| ab85294 | 60 | 60 | None | 0 |
| ab173954 | 63 | 59 | Up | 12 |
| ab59159 | 66 | 59 | Up | 3.5 |
| ab97508 | 68 | 59 | Down | 0.7 |
| ab70195 | 45 | 57 | Up | 0.8 |
| ab21278 | 62 | 56 | Down | 8.8 |
| ab186261 | 81 | 56 | Down | 4.7 |
| ab87711 | 45 | 56 | Up | 3.2 |
| ab173411 | 80 | 55 | Up | 6.9 |
| ab205021 | 54 | 55 | Down | 4.4 |

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|----------|----|----|------|-----|
| ab59152 | 54 | 55 | Up | 3.2 |
| ab80435 | 54 | 55 | Up | 1.8 |
| ab168511 | 65 | 55 | Up | 1 |
| ab84108 | 54 | 55 | None | 0 |
| ab95997 | 70 | 54 | Up | 4.6 |
| ab86078 | 92 | 53 | Down | 1.6 |
| ab25961 | 55 | 53 | Up | 1 |
| ab99346 | 67 | 52 | Up | 6.1 |
| ab108991 | 50 | 52 | Up | 6.1 |
| ab189907 | 66 | 52 | Up | 2.7 |
| ab138017 | 45 | 50 | Up | 3.4 |
| ab32629 | 44 | 50 | Up | 2.3 |
| ab153925 | 56 | 50 | Down | 1.2 |
| ab175506 | 48 | 49 | Up | 1.7 |
| ab137261 | 44 | 45 | Up | 14 |
| ab181999 | 65 | 45 | Up | 7.6 |
| ab10483 | 33 | 45 | Down | 5 |
| ab70560 | 51 | 45 | Up | 3.2 |
| ab200386 | 55 | 45 | Up | 3 |
| ab108045 | 56 | 45 | Down | 2.9 |
| ab155549 | 32 | 45 | Down | 1 |
| ab86546 | 23 | 45 | Down | 0.8 |
| ab60335 | 45 | 44 | Down | 5.4 |
| ab82647 | 47 | 44 | Up | 1.6 |
| ab166421 | 55 | 43 | Up | 9 |
| ab183042 | 45 | 43 | Up | 5.7 |
| ab108361 | 32 | 42 | Down | 13 |
| ab87169 | 65 | 42 | Up | 7.6 |
| ab167154 | 44 | 42 | Down | 0.7 |
| ab118770 | 32 | 41 | Down | 2.3 |
| ab91110 | 29 | 41 | Up | 0.1 |
| ab155782 | 30 | 40 | Down | 6 |
| ab171668 | 41 | 40 | Down | 5.3 |
| ab94409 | 39 | 40 | Up | 0.7 |
| ab133653 | 41 | 39 | Up | 1.6 |
| ab15954 | 25 | 37 | Down | 3.7 |
| ab83526 | 78 | 36 | Up | 5 |
| ab111694 | 45 | 36 | Up | 1.8 |
| ab58606 | 32 | 35 | Up | 5.1 |
| ab56395 | 23 | 35 | Down | 2.1 |
| ab101273 | 34 | 33 | Down | 6.7 |
| ab82680 | 51 | 33 | Down | 2.7 |
| ab203677 | 32 | 33 | Up | 2.6 |
| ab86862 | 33 | 33 | Up | 0.9 |
| ab11423 | 54 | 32 | Up | 5.1 |
| ab77255 | 30 | 32 | Down | 3.6 |
| ab156011 | 56 | 32 | Down | 2.7 |
| ab208642 | 33 | 32 | Up | 1.9 |
| ab106389 | 35 | 32 | Up | 1.4 |
| ab90362 | 17 | 31 | Up | 4.1 |
| ab76380 | 32 | 30 | Down | 13 |
| ab83077 | 35 | 30 | Up | 9 |
| ab163622 | 32 | 30 | Down | 7.9 |
| ab103592 | 30 | 30 | Down | 5.7 |
| ab84302 | 32 | 30 | Down | 1.7 |
| ab76716 | 31 | 30 | Down | 0.7 |
| ab42502 | 34 | 29 | Down | 5 |
| ab105362 | 32 | 29 | Up | 2.1 |
| ab24181 | 17 | 28 | Down | 4 |
| ab97303 | 13 | 28 | Down | 3.2 |
| ab108045 | 27 | 27 | Up | 1 |
| ab81642 | 25 | 25 | Up | 3.4 |
| ab79046 | 26 | 24 | Up | 3.1 |
| ab139689 | 10 | 23 | Down | 11 |
| ab173396 | 10 | 23 | Down | 7 |
| ab75054 | 23 | 23 | Down | 3.7 |
| ab183102 | 25 | 23 | Up | 2.1 |
| ab76841 | 32 | 22 | Up | 8 |
| ab94458 | 35 | 22 | Down | 3.4 |
| ab77577 | 28 | 22 | Down | 3.1 |
| ab175837 | 35 | 22 | Up | 2.9 |
| ab170424 | 23 | 22 | Up | 2.1 |
| ab201511 | 23 | 22 | Down | 1.5 |
| ab151048 | 23 | 22 | Down | 1.2 |
| ab181986 | 12 | 20 | Down | 7.2 |

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|----------|----|----|------|-----|
| ab123911 | 19 | 20 | Down | 5.6 |
| ab57614 | 30 | 20 | Up | 3.1 |
| ab60099 | 22 | 20 | Up | 2 |
| ab116643 | 18 | 20 | Up | 1.5 |
| ab91423 | 13 | 20 | Down | 0.8 |
| ab67815 | 12 | 19 | Up | 12 |
| ab177886 | 18 | 19 | Down | 3.4 |
| ab47255 | 12 | 19 | Down | 0.9 |
| ab168303 | 18 | 18 | Down | 1.7 |
| ab138534 | 10 | 18 | Up | 1.6 |
| ab166119 | 19 | 17 | Up | 1.4 |
| ab170869 | 5 | 17 | Up | 1.3 |
| ab179670 | 16 | 16 | Up | 3.7 |
| ab110458 | 13 | 16 | Down | 1.2 |
| ab174521 | 16 | 16 | Down | 0.3 |
| ab61284 | 15 | 15 | Up | 18 |
| ab121487 | 12 | 15 | Down | 3.1 |
| ab57559 | 13 | 15 | Down | 2.9 |
| ab108044 | 10 | 15 | Down | 2.6 |
| ab74930 | 15 | 15 | Up | 1.5 |
| ab79763 | 18 | 14 | Up | 3.4 |
| ab83812 | 13 | 13 | Down | 13 |
| ab174880 | 15 | 13 | Down | 5.7 |
| ab201212 | 13 | 13 | Down | 3.2 |
| ab138030 | 13 | 13 | Up | 2.7 |
| ab47994 | 36 | 12 | Up | 18 |
| ab53773 | 24 | 12 | Down | 3.1 |
| ab170907 | 27 | 12 | Up | 1.9 |
| ab104715 | 38 | 12 | Up | 1.8 |
| ab101722 | 12 | 12 | Down | 1.5 |
| ab131118 | 12 | 12 | None | 0 |
| ab192395 | 23 | 11 | Down | 3.4 |
| ab122348 | 12 | 11 | Down | 2.7 |
| ab79041 | 10 | 10 | Up | 5 |
| ab204600 | 10 | 10 | Up | 3.5 |
| ab103456 | 10 | 10 | Down | 2.3 |
| ab170294 | 17 | 10 | Down | 1.7 |
| ab164670 | 13 | 10 | Up | 1.6 |
| ab130833 | 17 | 10 | Down | 0.6 |
| ab210804 | 13 | 10 | None | 0 |
| ab180170 | 4 | 10 | None | 0 |
| ab134787 | 10 | 10 | None | 0 |
| ab179672 | 8 | 9 | Up | 8.9 |
| ab28673 | 9 | 9 | Up | 3.1 |
| ab113101 | 12 | 9 | Up | 3 |
| ab42420 | 8 | 9 | Down | 1.7 |
| ab178069 | 9 | 9 | Down | 1.3 |
| ab203629 | 9 | 9 | Down | 0.9 |
| ab102579 | 9 | 9 | None | 0 |
| ab154831 | 7 | 8 | Down | 1.1 |
| ab170901 | 6 | 8 | Up | 0.8 |
| ab38540 | 7 | 8 | None | 0 |
| ab69639 | 15 | 7 | Up | 9 |
| ab47062 | 13 | 7 | Down | 7.1 |
| ab76393 | 8 | 7 | Down | 6.1 |
| ab165952 | 7 | 7 | Down | 3.2 |
| ab114848 | 7 | 7 | Up | 1.2 |
| ab82654 | 7 | 7 | Up | 0.9 |
| ab70889 | 9 | 6 | Up | 3 |
| ab173479 | 4 | 5 | Up | 7.1 |
| ab105520 | 5 | 5 | Up | 4.9 |
| ab76397 | 5 | 5 | Down | 0.3 |
| ab127023 | 6 | 4 | Down | 3.2 |
| ab173625 | 4 | 4 | Up | 1.6 |
| ab179660 | 4 | 4 | Up | 1.1 |
| ab106180 | 3 | 3 | Up | 3.1 |
| ab88535 | 3 | 3 | Down | 1.7 |
| ab34847 | 3 | 3 | Up | 1.3 |
| ab49993 | 3 | 3 | Down | 0.3 |
| ab187667 | 3 | 3 | Down | 0.3 |
| ab79208 | 2 | 2 | Down | 1.7 |
| ab127735 | 7 | 2 | Up | 1.5 |
| ab73113 | 4 | 1 | Up | 3 |
| ab172637 | 1 | 1 | None | 0 |
| ab70621 | 0 | 0 | Down | 1.7 |

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|----------|----|----|------|------|
| ab115300 | 0 | 0 | Up | 0.9 |
| ab171454 | 13 | 0 | Up | 0.6 |
| No | 0 | 0 | None | 0 |
| No | 0 | 0 | None | 0 |
| No | 0 | 0 | None | 0 |
| No | 0 | 0 | None | 0 |
| No | 0 | 0 | None | 0 |
| No | 0 | 0 | None | 0 |
| No | 0 | 0 | None | 0 |
| No | 0 | 0 | None | 0 |
| ab99231 | 0 | 0 | None | 0 |
| ab97350 | 0 | 0 | None | 0 |
| ab9664 | 0 | 0 | None | 0 |
| ab96612 | 0 | 0 | None | 0 |
| ab92793 | 0 | 0 | None | 0 |
| ab91464 | 0 | 0 | None | 0 |
| ab87007 | 0 | 0 | None | 0 |
| ab86393 | 0 | 0 | None | 0 |
| ab84067 | 0 | 0 | None | 0 |
| ab83762 | 0 | 0 | None | 0 |
| ab80427 | 0 | 0 | None | 0 |
| ab78005 | 0 | 0 | None | 0 |
| ab77721 | 0 | 0 | None | 0 |
| ab74262 | 0 | 0 | None | 0 |
| ab72055 | 0 | 0 | None | 0 |
| ab72054 | 0 | 0 | None | 0 |
| ab70770 | 0 | 0 | None | 0 |
| ab67379 | 0 | 0 | None | 0 |
| ab61308 | 0 | 0 | None | 0 |
| ab54326 | 0 | 0 | None | 0 |
| ab49312 | 0 | 0 | None | 0 |
| ab46020 | 0 | 0 | None | 0 |
| ab38295 | 0 | 0 | None | 0 |
| ab34750 | 0 | 0 | None | 0 |
| ab24335 | 0 | 0 | None | 0 |
| ab214937 | 0 | 0 | None | 0 |
| ab199299 | 0 | 0 | None | 0 |
| ab196279 | 0 | 0 | None | 0 |
| ab190676 | 0 | 0 | None | 0 |
| ab174959 | 0 | 0 | None | 0 |
| ab171850 | 0 | 0 | None | 0 |
| ab169546 | 0 | 0 | None | 0 |
| ab16895 | 0 | 0 | None | 0 |
| ab167154 | 0 | 0 | None | 0 |
| ab155674 | 0 | 0 | None | 0 |
| ab155197 | 0 | 0 | None | 0 |
| ab154821 | 0 | 0 | None | 0 |
| ab151995 | 0 | 0 | None | 0 |
| ab135730 | 0 | 0 | None | 0 |
| ab134815 | 0 | 0 | None | 0 |
| ab127724 | 0 | 0 | None | 0 |
| ab124929 | 0 | 0 | None | 0 |
| ab124039 | 0 | 0 | None | 0 |
| ab121169 | 0 | 0 | None | 0 |
| ab119076 | 0 | 0 | None | 0 |
| ab116084 | 0 | 0 | None | 0 |
| ab115604 | 0 | 0 | None | 0 |
| ab109690 | 0 | 0 | None | 0 |
| ab106547 | 0 | 0 | None | 0 |
| ab213223 | 87 | 88 | Down | 9 |
| ab126765 | 90 | 90 | Up | 4.4 |
| ab109018 | 45 | 89 | Down | 17 |
| ab60130 | 89 | 88 | Up | 18 |
| ab46521 | 54 | 88 | Down | 7.8 |
| ab70311 | 81 | 88 | Up | 4.5 |
| ab53316 | 57 | 83 | Down | 4.1 |
| ab92711 | 80 | 82 | Down | 1.2 |
| ab100908 | 56 | 80 | Down | 7.9 |
| ab83853 | 98 | 79 | Up | 20 |
| ab38866 | 80 | 79 | None | 0 |
| ab46521 | 89 | 78 | Up | 2.2 |
| ab133637 | 92 | 76 | Up | 19.3 |
| ab85832 | 34 | 75 | Down | 13 |
| ab151071 | 88 | 72 | Up | 8.9 |

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|----------|----|-----|------|------|
| ab83834 | 77 | 71 | None | 0 |
| ab85732 | 70 | 70 | Up | 5.6 |
| ab43791 | 76 | 69 | Up | 11 |
| ab173122 | 75 | 65 | Up | 5.6 |
| ab70161 | 65 | 60 | Down | 1.5 |
| ab177511 | 67 | 56 | Up | 3.9 |
| ab86220 | 52 | 45 | Up | 7.1 |
| ab173572 | 23 | 31 | Down | 1.7 |
| ab83801 | 1 | 1 | None | 0 |
| ab69905 | 1 | 1 | None | 0 |
| ab99949 | 0 | 0 | None | 0 |
| ab121264 | 0 | 0 | None | 0 |
| ab117763 | 0 | 0 | None | 0 |
| ab101992 | 0 | 0 | None | 0 |
| ab68455 | 93 | 100 | Up | 8.1 |
| ab154070 | 96 | 100 | Down | 3.1 |
| ab181801 | 90 | 85 | Up | 9.1 |
| ab140175 | 85 | 85 | Up | 5.7 |
| ab135547 | 80 | 82 | Down | 2.4 |
| ab133197 | 75 | 80 | Up | 2.5 |
| ab153853 | 79 | 74 | None | 0 |
| ab57768 | 90 | 72 | Up | 3.7 |
| ab136614 | 85 | 71 | Up | 7.1 |
| ab86137 | 35 | 70 | Down | 4.7 |
| ab84129 | 88 | 67 | Up | 11.1 |
| ab82974 | 75 | 67 | Up | 4.5 |
| ab96645 | 52 | 65 | Down | 1.7 |
| ab67232 | 67 | 65 | Up | 1.2 |
| ab109617 | 70 | 63 | Down | 6.7 |
| ab129454 | 56 | 57 | None | 0 |
| ab115521 | 38 | 54 | Down | 9.1 |
| ab154347 | 65 | 54 | Up | 7.9 |
| ab59149 | 57 | 54 | Down | 1.8 |
| ab179818 | 43 | 50 | Down | 1.8 |
| ab74023 | 88 | 48 | Up | 12.1 |
| ab170300 | 45 | 45 | Down | 3.1 |
| ab168240 | 33 | 45 | None | 0 |
| ab194570 | 30 | 41 | Down | 1.1 |
| ab153803 | 36 | 41 | Down | 0.6 |
| ab5309 | 45 | 40 | Up | 1.7 |
| ab187144 | 44 | 31 | Up | 1.3 |
| ab191387 | 23 | 28 | Up | 1.3 |
| ab190688 | 23 | 28 | Down | 0.9 |
| ab58784 | 41 | 22 | Up | 3 |
| ab96831 | 41 | 22 | Up | 1.5 |
| ab126471 | 11 | 17 | Down | 0.5 |
| ab130498 | 15 | 14 | Up | 0.8 |
| ab81317 | 13 | 13 | None | 0 |
| ab101516 | 6 | 10 | Down | 0.7 |
| ab71753 | 10 | 10 | None | 0 |
| ab153812 | 13 | 9 | Up | 2.4 |
| ab181199 | 5 | 7 | Down | 0.3 |
| No | 0 | 0 | None | 0 |
| No | 0 | 0 | None | 0 |
| ab96832 | 0 | 0 | None | 0 |
| ab87729 | 0 | 0 | None | 0 |
| ab81638 | 0 | 0 | None | 0 |
| ab69873 | 0 | 0 | None | 0 |
| ab68226 | 0 | 0 | None | 0 |
| ab68224 | 0 | 0 | None | 0 |
| ab60116 | 0 | 0 | None | 0 |
| ab57056 | 0 | 0 | None | 0 |
| ab45379 | 0 | 0 | None | 0 |
| ab203117 | 0 | 0 | None | 0 |
| ab191387 | 0 | 0 | None | 0 |
| ab183753 | 0 | 0 | None | 0 |
| ab175296 | 0 | 0 | None | 0 |
| ab171150 | 0 | 0 | None | 0 |
| ab17018 | 0 | 0 | None | 0 |
| ab165616 | 0 | 0 | None | 0 |
| ab165069 | 0 | 0 | None | 0 |
| ab154068 | 0 | 0 | None | 0 |
| ab151964 | 0 | 0 | None | 0 |
| ab133717 | 0 | 0 | None | 0 |
| ab103719 | 0 | 0 | None | 0 |

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|----------|----|----|------|------|
| ab209402 | 67 | 79 | Down | 6.3 |
| ab109027 | 89 | 76 | Up | 15 |
| ab81552 | 0 | 0 | None | 0 |
| ab170961 | 78 | 90 | Up | 2.3 |
| ab103292 | 70 | 89 | Down | 7.2 |
| ab191186 | 67 | 87 | Down | 19 |
| ab203894 | 88 | 87 | None | 0 |
| ab196776 | 89 | 86 | Up | 5.3 |
| ab170432 | 75 | 85 | Down | 3.1 |
| ab19011 | 60 | 31 | Up | 27 |
| ab126903 | 67 | 80 | Down | 12 |
| ab32433 | 32 | 78 | Down | 8.1 |
| ab111122 | 64 | 78 | Down | 7.8 |
| ab177926 | 31 | 78 | Down | 7.1 |
| ab49345 | 67 | 78 | Down | 3.6 |
| ab65794 | 56 | 78 | Down | 2.3 |
| ab85207 | 76 | 77 | None | 0 |
| ab130374 | 77 | 77 | None | 0 |
| ab87228 | 45 | 76 | Down | 5.1 |
| ab175918 | 85 | 75 | Up | 13.5 |
| ab48889 | 85 | 73 | Up | 12.5 |
| ab154713 | 89 | 72 | Up | 7.1 |
| ab111604 | 88 | 70 | Up | 9 |
| ab204051 | 78 | 70 | Up | 1.4 |
| ab86585 | 72 | 68 | Up | 4.1 |
| ab178672 | 89 | 67 | Up | 12 |
| ab117756 | 78 | 67 | Up | 9.1 |
| ab70991 | 43 | 67 | Down | 7.1 |
| ab174976 | 32 | 67 | Down | 2.6 |
| ab126041 | 56 | 67 | Down | 1.5 |
| ab76403 | 70 | 67 | None | 0 |
| ab79445 | 75 | 66 | Up | 8.5 |
| ab173716 | 60 | 66 | None | 0 |
| ab111404 | 60 | 65 | Down | 3.6 |
| ab102662 | 58 | 65 | None | 0 |
| ab156040 | 37 | 61 | Down | 1.9 |
| ab106554 | 67 | 60 | Up | 6.1 |
| ab104021 | 43 | 60 | Down | 2.8 |
| ab106536 | 60 | 60 | None | 0 |
| ab33029 | 13 | 56 | Down | 27 |
| ab23943 | 92 | 56 | Up | 8.8 |
| ab177878 | 89 | 56 | Up | 3.6 |
| ab39354 | 38 | 55 | Down | 7.8 |
| ab80879 | 67 | 54 | Down | 2.4 |
| ab137537 | 45 | 51 | Down | 11 |
| ab69984 | 13 | 50 | Down | 8.8 |
| ab80844 | 56 | 50 | Up | 1.4 |
| ab175505 | 54 | 50 | None | 0 |
| ab106631 | 51 | 49 | None | 0 |
| ab66620 | 82 | 45 | Up | 13.3 |
| ab129610 | 13 | 45 | Down | 3.7 |
| ab83364 | 44 | 45 | Up | 2.7 |
| ab154189 | 45 | 45 | None | 0 |
| ab59123 | 23 | 44 | Down | 6.6 |
| ab85841 | 65 | 43 | Up | 5.1 |
| ab176201 | 40 | 40 | Up | 5.8 |
| ab98148 | 33 | 40 | Down | 5.4 |
| ab174612 | 36 | 40 | Down | 1.7 |
| ab66788 | 32 | 39 | Down | 1.2 |
| ab49657 | 45 | 33 | Up | 2.3 |
| ab138542 | 19 | 31 | Down | 2.7 |
| ab203880 | 13 | 30 | Down | 7.1 |
| ab192266 | 45 | 30 | Up | 6.8 |
| ab110982 | 45 | 30 | Up | 3.4 |
| ab126060 | 23 | 30 | Down | 1.2 |
| ab173698 | 40 | 29 | Up | 4.7 |
| ab112610 | 17 | 28 | Down | 1.4 |
| ab50588 | 20 | 26 | None | 0 |
| ab90147 | 23 | 20 | Up | 1.8 |
| ab32974 | 13 | 20 | Down | 1.3 |
| ab125342 | 3 | 14 | Down | 5.8 |
| ab106373 | 5 | 14 | Down | 1.6 |
| ab55987 | 23 | 11 | Up | 9.2 |
| ab86934 | 17 | 10 | Up | 4.9 |
| ab106655 | 10 | 9 | Up | 7.8 |

| | | | | |
|----------------|----|---|------|------|
| ab151521 | 7 | 9 | None | 0 |
| ab50664 | 5 | 8 | Down | 2.1 |
| ab26163 | 8 | 8 | None | 0 |
| ab194825 | 5 | 7 | None | 0 |
| ab181798 | 23 | 6 | Up | 17.1 |
| ab107852 | 15 | 6 | Up | 4.5 |
| ab99547 | 3 | 3 | Down | 1.4 |
| ab127566 | 2 | 3 | None | 0 |
| ab186660 | 0 | 1 | None | 0 |
| ab129261 | 1 | 1 | None | 0 |
| No | 0 | 0 | None | 0 |
| No | 0 | 0 | None | 0 |
| No | 0 | 0 | None | 0 |
| ab94410 | 0 | 0 | None | 0 |
| ab93605 | 0 | 0 | None | 0 |
| ab87607 | 0 | 0 | None | 0 |
| ab86418 | 0 | 0 | None | 0 |
| ab86330 | 0 | 0 | None | 0 |
| ab86330 | 0 | 0 | None | 0 |
| ab85707 | 0 | 0 | None | 0 |
| ab85509 | 0 | 0 | None | 0 |
| ab84058 | 0 | 0 | None | 0 |
| ab83237 | 0 | 0 | None | 0 |
| ab82898 | 0 | 0 | None | 0 |
| ab80457 | 0 | 0 | None | 0 |
| ab80304 | 0 | 0 | None | 0 |
| ab80270 | 0 | 0 | None | 0 |
| ab75208 | 0 | 0 | None | 0 |
| ab74931 | 0 | 0 | None | 0 |
| ab69333(mouse) | 0 | 0 | None | 0 |
| ab66637 | 0 | 0 | None | 0 |
| ab66605 | 0 | 0 | None | 0 |
| ab65535 | 0 | 0 | None | 0 |
| ab62596 | 0 | 0 | None | 0 |
| ab62181 | 0 | 0 | None | 0 |
| ab56255 | 0 | 0 | None | 0 |
| ab53158 | 0 | 0 | None | 0 |
| ab50950 | 0 | 0 | None | 0 |
| ab49353 | 0 | 0 | None | 0 |
| ab49349 | 0 | 0 | None | 0 |
| ab48927 | 0 | 0 | None | 0 |
| ab42465 | 0 | 0 | None | 0 |
| ab37195 | 0 | 0 | None | 0 |
| ab29047 | 0 | 0 | None | 0 |
| ab28724 | 0 | 0 | None | 0 |
| ab214323 | 0 | 0 | None | 0 |
| ab213445 | 0 | 0 | None | 0 |
| ab21089 | 0 | 0 | None | 0 |
| ab204232 | 0 | 0 | None | 0 |
| ab204047 | 0 | 0 | None | 0 |
| ab201086 | 0 | 0 | None | 0 |
| ab192259 | 0 | 0 | None | 0 |
| ab190274 | 0 | 0 | None | 0 |
| ab188006 | 0 | 0 | None | 0 |
| ab187865 | 0 | 0 | None | 0 |
| ab184979 | 0 | 0 | None | 0 |
| ab182358 | 0 | 0 | None | 0 |
| ab180937 | 0 | 0 | None | 0 |
| ab178336 | 0 | 0 | None | 0 |
| ab175569 | 0 | 0 | None | 0 |
| ab175548 | 0 | 0 | None | 0 |
| ab173687 | 0 | 0 | None | 0 |
| ab173010 | 0 | 0 | None | 0 |
| ab170299 | 0 | 0 | None | 0 |
| ab169551 | 0 | 0 | None | 0 |
| ab16719 | 0 | 0 | None | 0 |
| ab16718 | 0 | 0 | None | 0 |
| ab165175 | 0 | 0 | None | 0 |
| ab154923 | 0 | 0 | None | 0 |
| ab154482 | 0 | 0 | None | 0 |
| ab140930 | 0 | 0 | None | 0 |
| ab139119 | 0 | 0 | None | 0 |
| ab129245 | 0 | 0 | None | 0 |
| ab127744 | 0 | 0 | None | 0 |
| ab127633 | 0 | 0 | None | 0 |

| | | | | |
|----------|---|---|------|---|
| ab127314 | 0 | 0 | None | 0 |
| ab126078 | 0 | 0 | None | 0 |
| ab124902 | 0 | 0 | None | 0 |
| ab124777 | 0 | 0 | None | 0 |
| ab124349 | 0 | 0 | None | 0 |
| ab122243 | 0 | 0 | None | 0 |
| ab122164 | 0 | 0 | None | 0 |
| ab122094 | 0 | 0 | None | 0 |
| ab121913 | 0 | 0 | None | 0 |
| ab113906 | 0 | 0 | None | 0 |
| ab111353 | 0 | 0 | None | 0 |
| ab110904 | 0 | 0 | None | 0 |
| ab110759 | 0 | 0 | None | 0 |
| ab106628 | 0 | 0 | None | 0 |
| ab106562 | 0 | 0 | None | 0 |
| ab104315 | 0 | 0 | None | 0 |
| ab104089 | 0 | 0 | None | 0 |
| ab104084 | 0 | 0 | None | 0 |
| ab103963 | 0 | 0 | None | 0 |
| ab101484 | 0 | 0 | None | 0 |
| ab101065 | 0 | 0 | None | 0 |
| ab100997 | 0 | 0 | None | 0 |
