

Supplementary Table 3A. *Drosophila* behavior-based candidate gene set

| FlyBase ID | <i>Drosophila</i> Gene Name | Human Entrez ID | Human Gene Name | Citation from reference | Reference |
|-------------------------|------------------------------------|------------------------|------------------------|--|--------------------------------------|
| FBgn0023129 | <i>aay</i> | 5723 | <i>PSPH</i> | aay[S042314] flies exhibit increased ethanol-induced hyperactivity and reduced ethanol sedation sensitivity and sedation tolerance compared to controls | Kong et al., 2010 |
| FBgn0040079 | <i>Akap200</i> | 10409 | <i>BASP1</i> | Akap200[NP6271] flies exhibit increased ethanol-induced hyperactivity during the first ethanol exposure, but reduced locomotor activity upon repeated ethanol exposure compared to controls. | Kong et al., 2010 |
| FBgn0050420 | <i>Atf-2</i> | 56654 | <i>NPDC1</i> | the locomotor activity of dATF-2 knockdown flies was 59% higher than that of control flies, overexpressing flies exhibited a 34% lower locomotor activity. dATF-2 suppresses locomotor activity but does not affect its circadian regulation. | Shimizu et al., 2008 |
| FBgn0039213 | <i>atl</i> | 51062 | <i>ATL1</i> | Mutants are "bang sensitive", being paralysed by mechanical shock; 44% of 10 day old mutant flies and 83% of 15 day old mutant flies are paralysed after vortexing for 5 seconds. reduced locomotor activity compared to control flies. | Lee et al., 2008 |
| FBgn0002921 | <i>Atpalpha</i> | 478 | <i>ATP1A3</i> | Demonstrates bang sensitivity. Vortexing for 10 seconds causes 5-10 sec paralysis proceeding through staggering to normal behaviour over the course of 1-2 mins., severe defects in movement and phototactic behaviour, and are bang sensitive | Hurd et al., 1996, Feng et al., 1997 |
| ADHD FBgn0087007 | <i>bbg</i> | 3603 | <i>IL16</i> | The gene is named "big bang" based on the fact that the gene is quite large, and mutants all appear to be mildly bang-sensitive. | Kim et al., 2006 |
| FBgn0050077 | <i>Blos1</i> | 2647 | <i>BLOC1S1</i> | blos1[ex2] homozygous flies show locomotor hyperactivity, including rapid jumping and running as well as interrupted flight. | Cheli et al., 2010 |
| FBgn0031150 | <i>bves</i> | 11149 | <i>BVES</i> | bves[f01175] flies exhibit increased ethanol-induced hyperactivity during the first ethanol exposure, but reduced locomotor activity upon repeated ethanol exposure compared to controls. | Kong et al., 2010 |
| FBgn0263006 | <i>Ca-P60A</i> | 487 | <i>ATP2A1</i> | comt; Kum double mutants are hyperactive and display activity-dependent synaptic growth and transmitter release | Freeman et al., 2010 |
| FBgn0005563 | <i>cac</i> | 774 | <i>CACNA1B</i> | bang-sensitive | Chan et al., 2002 |
| FBgn0002022 | <i>Catsup</i> | 7922 | <i>SLC39A7</i> | For example, the rare allele at the site affecting lifespan is associated with increased longevity, and the rare 57 bp deletion is associated with increased locomotor reactivity (Table S4) | Carbone et al., 2006 |
| FBgn0037890 | <i>CG17734</i> | 613227 | <i>HIGD1C</i> | CG17734[KG06609] flies exhibit increased ethanol-induced hyperactivity during the first ethanol exposure, but reduced locomotor activity upon repeated ethanol exposure compared to controls. | Kong et al., 2010 |

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|-------------|-----------------------------------|----------------------------|---------------------|---------------------------|---|---|
| | FBgn0029823 | CG3011 | 6470 | SHMT1 | CG3011[NP6075] flies exhibit increased ethanol-induced hyperactivity compared to controls. | Kong et al., 2010 |
| | FBgn0035088 | CG3776 | 79568 | C2orf47 | The total distances moved by the EP835/Gal4 flies during the 2 h recording period were significantly greater than by wild type Oregon R flies | Liu et al., 2008 |
| | FBgn0035989 | CG3967 | 79969 | ATAT1 | CG3967[KG05974] flies exhibit increased ethanol-induced hyperactivity compared to controls. | Kong et al., 2010 |
| | FBgn0261570 | CG42684 | 153090 | DAB2IP | CG42270[NP3418] flies exhibit increased ethanol-induced hyperactivity during the first ethanol exposure | Kong et al., 2010 |
| | FBgn0027579 | CG5508 | 57678 | GPAM | CG5508[NP0579] flies exhibit increased ethanol-induced hyperactivity during the first ethanol exposure, but reduced locomotor activity upon repeated ethanol exposure compared to controls? | Kong et al., 2010 |
| ADHD | FBgn0014141 FBgn0000346 | <i>cher</i> <i>comt</i> | 2318 4905 | FLNC <i>NSF</i> | less than normal optomotor response, opposite from <i>rut</i> and <i>dnc comt</i> ; <i>Kum</i> double mutants are hyperactive and display activity-dependent synaptic growth and transmitter release | van Swinderen, 2009 Freeman et al., 2010 |
| | FBgn0000363 | <i>cpo</i> | 348093 | <i>RBPMS2</i> | We show that mutation of <i>cpo</i> leads to bang-sensitive paralysis, seizure susceptibility, and synaptic transmission defects. | Glasscock, 2005 |
| | FBgn0014467 | <i>CrebB-17A</i> | 1385 | <i>CREB1</i> | Repetitive exposures to nicotine induce a hyper-responsiveness via the cAMP/PKA/CREB signal pathway in <i>Drosophila</i> | Hou et al., 2004 |
| ADHD | FBgn0034136 | DAT | 6531 | SLC6A3 | This indicates that <i>DAT^{fmn}</i> mutants are hyperactive because they have a longer period of daily activity rather than being more active during any given activity period. <i>DAT^{fmn}</i> flies are hyper-responsive to mechanical stimuli. | Kume et al., 2005 |
| | FBgn0000479 | <i>dnc</i> | 5142 | <i>PDE4B</i> | Attention defects in these mutants were associated with distinct optomotor effects in behavioral assays. | van Swinderen et al., 2007 |
| | FBgn0000504 | <i>dsx</i> | 1761 | <i>DMRT1</i> | XY males show courtship sluggishness when compared to wild type siblings, though they are generally hyperactive. | Villella and Hall, 1996 |
| | FBgn0000535 | <i>eag</i> | 27133 | <i>KCNH5</i> | <i>eag^{i°2}</i> . When initially isolated, this strain was extremely hyperactive, even by comparison with all other hyperactive mutants. | Homyk et al., 1980 |
| | FBgn0000536 | <i>eas</i> | 55224 | <i>ETNK2</i> | A brief bang causes a period of hyperactivity lasting 1-2s, during which flies fall over and vigorously flap their wings, shake and bend their legs, and flex their abdomens. The activity rapidly gives way to paralysis. After 20-30s, hyperactivity begins. | Pavlidis et al., 1994 |
| | FBgn0031604 | <i>Elp3</i> | 55140 | <i>ELP3</i> | Targeted reduction of <i>Dmel\ELP3</i> in the nervous system causes an increase in climbing and locomotor activities and a loss of sleep in flies | Singh et al., 2010 |
| | FBgn0020440 | <i>Fak56D</i> | 5747 | <i>PTK2</i> | decreased lifespan accompanied by a bang sensitivity that can be induced by mechanical and high-frequency electrical stimulation | Ueda et al., 2008 |

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|-------------|--------------------|-------------------|-------------|-----------------------|--|---------------------------|
| ADHD | FBgn0000721 | <i>for</i> | 5592 | <i>PRKG1</i> | For[R] adults are significantly more active compared to for[s] adults in a locomotor activity assay. | MacPherson et al., 2004 |
| | FBgn0026718 | <i>fu12</i> | 10554 | <i>AGPAT1</i> | fu12[EP1138] flies exhibit increased ethanol-induced hyperactivity during the first ethanol exposure, but reduced locomotor activity upon repeated ethanol exposure compared to controls. | Kong et al., 2010 |
| | FBgn0039487 | <i>gb</i> | 9057 | <i>SLC7A6</i> | genderblind mutants display faster recovery and increased negative geotaxis after strong mechanical stimuli (e.g., they climb faster and farther after vial banging) | Featherstone et al., 2009 |
| | FBgn0001203 | <i>Hk</i> | 8514 | <i>KCNAB2</i> | Walking activity is not affected by age in Hk[1] flies, which remain hyperactive relative to their wild-type siblings from day 2 until death. Late in life, Hk[1] flies are hyperactive but are no longer short-sleepers. | Bushey et al., 2010 |
| | FBgn0025777 | <i>homer</i> | 9455 | <i>HOMER2</i> | homer mutants are hyperactive for both spontaneous locomotion and courtship behavior, implicating Homer in the control of locomotor activity. | Diagana et al., 2002 |
| | FBgn0027655 | <i>htt</i> | 3064 | <i>HTT</i> | The HD-Q93 flies develop age-dependent neurodegenerative phenotypes in adults, which manifest as initial hyperactivity followed by a gradual loss of coordination and a decline in locomotor ability, with eventual death at around 20 days of age | Zhang et al., 2009 |
| | FBgn0016672 | <i>lpp</i> | 3628 | <i>INPP1</i> | The flies showed mild but reproducible hyper-excitability: they displayed the characteristic twitching of the legs seen in Shaker-like mutants while recovering from the anesthetic effects of diethyl ether. | Acharya et al., 1998 |
| | FBgn0028371 | <i>jbug</i> | 2317 | <i>FLNB</i> | Phenotype: Bang-sensitive Location: Chromosome 2R-59A Name: jitterbug Abbreviation:jbug | Song et al., 2006 |
| | FBgn0010052 | <i>Jhe</i> | 283848 | <i>CES4A</i> | Jhe[e01859] flies exhibit increased ethanol-induced hyperactivity during the first ethanol exposure, but reduced locomotor activity upon repeated ethanol exposure compared to controls. | Kong et al., 2010 |
| | FBgn0261794 | <i>kcc</i> | 6560 | <i>SLC12A4</i> | The penetrance of bang sensitivity in these flies decreases rapidly with age. | Hekmat-Scafe et al., 2006 |
| | FBgn0086133 | <i>kdn</i> | 1431 | <i>CS</i> | We mapped the bang-sensitive seizure mutation knockdown (kdn) to cytological position 5F3 and identified citrate synthase as the affected gene. | Fergestad et al., 2006 |
| | FBgn0034877 | <i>levy</i> | 1337 | <i>COX6A1</i> | progressive bang-induced paralysis in levy mutants | Liu et al., 2007 |
| | FBgn0259481 | <i>Mob2</i> | 81532 | <i>MOB2</i> | less than normal optomotor response, opposite from rut and dnc | van Swinderen, 2009 |
| | FBgn0013672 | <i>mt:ATPase6</i> | 4508 | <i>MT-ATP6</i> | Both sesB1 (ANT1) and ATP61 mutants have reduced locomotor function and conditional paralysis brought on by mechanical stress. | Celotto et al., 2006 |
| | FBgn0037705 | <i>mura</i> | 22838 | <i>RNF44</i> | less than normal optomotor response, opposite from rut and dnc | van Swinderen, 2009 |
| | FBgn0033764 | <i>nemy</i> | 27165 | <i>GLS2</i> | The mutant males show an increased level of locomotor activity unrelated to courtship, and spend more time in such an element of courtship as pursuit. | Kamyshev et al., 2002 |

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|-------------|------------------|--------|-----------------|--|---|
| FBgn0086768 | <i>Pcmt</i> | 5110 | <i>PCMT1</i> | Flies overexpressing PCMT consistently exhibited increased locomotor activity (data not shown). | Chavous et al., 2001 |
| FBgn0003068 | <i>per</i> | 8864 | <i>PER2</i> | The new mutation also leads to a tendency for flies to be hyperactive during activity monitoring and is thus dissimilar to the other arrhythmic variants in the <i>per</i> gene but similar to the effects of a deletion of the locus. | Hamblen-Coyle et al., 1989 |
| FBgn0000273 | <i>Pka-C1</i> | 5566 | <i>PRKACA</i> | Repetitive exposures to nicotine induce a hyper-responsiveness via the cAMP/PKA/CREB signal pathway in <i>Drosophila</i> | Hou et al., 2004 |
| FBgn0005626 | <i>ple</i> | 7054 | <i>TH</i> | mutant (TbH) with increased tyramine and depleted octopamine levels displays normal ethanol sensitivity, a startle repression, and hyperactivates more in response to ethanol. | Scholz et al., 2005 |
| FBgn0004363 | <i>porin</i> | 7417 | <i>VDAC2</i> | Homozygous flies are bang-sensitive, showing a 2-3 fold increase in recovery time compared to wild-type controls. | Graham et al., 2010 |
| FBgn0004595 | <i>pros</i> | 5629 | <i>PROX1</i> | The fact that CI and locomotor activity in these mutant males and in heterozygous <i>prosV1</i> males were similarly increased suggests that one copy of defective <i>prosV</i> mutation can cause these male-specific behavioural defects. | Grosjean et al., 2004 |
| FBgn0033068 | <i>Ptr</i> | 139411 | <i>PTCHD1</i> | <i>Ptr</i> [NP2732] flies exhibit increased ethanol-induced hyperactivity during the first ethanol exposure, but reduced locomotor activity upon repeated ethanol exposure compared to controls? | Kong et al., 2010 |
| FBgn0051005 | <i>qless</i> | 23590 | <i>PDSS1</i> | This alleles appears to have a dominant neurological or motor defect, although we have not confirmed that the phenotype observed in the balanced stock is caused by the insertion allele. CG31005EP984/TM6B adults have twitchy movements and they are flightless. | Bloomington <i>Drosophila</i> Stock Center, 2005.10.7 |
| FBgn0030318 | <i>rho-4</i> | 54933 | <i>RHBDL2</i> | <i>rho-4</i> [NP3452] flies exhibit increased ethanol-induced hyperactivity during the first ethanol exposure, which increases with repeated ethanol exposure compared to controls? | Kong et al., 2010 |
| FBgn0261461 | <i>RhoGAP18B</i> | 57636 | <i>ARHGAP23</i> | Adult overexpression of <i>RhoGAP18B</i> [RA.Scer\UAS] in wild-type flies (Scer\GAL4[whir3]/+, Scer\GAL80[ts. α Tub84B]; Avic\GFP[Scer\UAS]) causes a significant increase in ethanol-induced hyperactivity, compared to wild-type. | Rothenfluh et al., 2006 |
| FBgn0003301 | <i>rut</i> | 114 | <i>ADCY8</i> | amnesiac (<i>amn</i>) and rutabaga (<i>rut</i>) show similarly increased sensitivity to ethanol in the inebriometer, an apparatus that quantifies the effects of ethanol on postural control | Wolf et al., 2002 |
| FBgn0003328 | <i>scb</i> | 8516 | <i>ITGA8</i> | <i>scb</i> [NP7060] flies exhibit increased ethanol-induced hyperactivity during the first ethanol exposure, but reduced locomotor activity upon repeated ethanol exposure compared to controls. | Kong et al., 2010 |

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|-------------|--------------------|--------------------|-------------|---------------------|--|---------------------------|
| | FBgn0052056 | <i>scramb1</i> | 5359 | <i>PLSCR1</i> | The Scramblase double-mutant flies appear visibly more active in a vial compared with either of the single mutants or the control w1118 flies. | Acharya et al., 2006 |
| | FBgn0035390 | <i>scramb2</i> | 57047 | <i>PLSCR2</i> | The Scramblase double-mutant flies appear visibly more active in a vial compared with either of the single mutants or the control w1118 flies. | Acharya et al., 2006 |
| | FBgn0015541 | <i>sda</i> | 206338 | <i>AQPEP</i> | Homozygous flies show 100% bang sensitivity. | Hekmat-Scafe et al., 2005 |
| | FBgn0003353 | <i>sei</i> | 81033 | <i>KCNH6</i> | Mutations in the seizure (<i>sei</i>) locus cause temperature-induced hyperactivity, followed by paralysis | Wang et al., 1997 |
| | FBgn0003360 | <i>sesB</i> | 291 | <i>SLC25A4</i> | Our studies of the <i>Drosophila</i> ATP61 and <i>sesB1</i> (ANT1) mutations revealed common phenotypes, including conditional paralysis, shortened lifespan, and degeneration of the neuromuscular system. | Celotto et al., 2006 |
| | FBgn0003380 | <i>Sh</i> | 3736 | <i>KCNA1</i> | Hyperexcitable mutants like <i>Sh</i> display abnormal leg shaking and wing scissoring in etherized adults | Mosca, 2005 |
| ADHD | FBgn0003386 | <i>Shaw</i> | 3746 | <i>KCNC1</i> | Expression of <i>Shaw</i> [<i>RA.Scer\UAS.T:Zzzz\FLAG</i>] in clock cells under the control of <i>Scer\GAL4[tim.PE]</i> causes flies to have more locomotor activity compared to controls. Activity is significantly increased at night. | Hodge and Stanewsky, 2008 |
| | FBgn0003464 | <i>sol</i> | 6650 | <i>SOLH</i> | they are hyperactive, and they have a weak, abnormal optomotor response | Miklos et al., 1987 |
| | FBgn0086370 | <i>sra</i> | 10231 | <i>RCAN2</i> | Loss of <i>Sra</i> , a homolog of human <i>DSCR1</i> , induces locomotor hyperactivity in <i>Drosophila</i> | Shin et al., 2006 |
| | FBgn0086784 | <i>stmA</i> | 22979 | <i>EFR3B</i> | <i>stmA1</i> and <i>stmAP1</i> adults are hypoactive and <i>stmA2</i> hyperactive | Kumar et al., 2001 |
| | FBgn0003714 | <i>tko</i> | 6183 | <i>MRPS12</i> | Hemizygous males and homozygous females show a strong bang-sensitive phenotype with a mean recovery of over 30 seconds after 10 seconds of vortexing. | Toivonen et al., 2001 |
| | FBgn0086355 | <i>Tpi</i> | 7167 | <i>TPI1</i> | Mutants show a bang sensitive phenotype at both room temperature and at 29°C, taking longer to recover from mechanical stress than control flies | Seigle et al., 2008 |
| | FBgn0010287 | <i>Trf</i> | 6908 | <i>TBP</i> | Ether-induced leg shaking and male sterility due to immotile sperm. Shaker phenotype. | Crowley et al., 1993 |
| | FBgn0086782 | <i>amn</i> | na | <i>na</i> | amnesiac (<i>amn</i>) and rutabaga (<i>rut</i>) show similarly increased sensitivity to ethanol in the inebriometer, an apparatus that quantifies the effects of ethanol on postural control [mouse model is hyperactive: PACAP] | Wolf et al., 2002 |
| | FBgn0033928 | <i>Arc2</i> | na | <i>na</i> | <i>Arc2</i> [<i>EY14313</i>] flies exhibit increased ethanol-induced hyperactivity and reduced ethanol sedation sensitivity and sedation tolerance compared to controls? | Kong et al., 2010 |

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|-------------|--------------|----|-----------|--|--------------------------------|
| FBgn0028374 | <i>hug</i> | na | <i>na</i> | a lower hug level correlates with increased food-seeking behavior since <i>Drosophila</i> larvae become hyperactive and disperse when food is removed | Melcher et al., 2005 |
| FBgn0086912 | <i>mbm</i> | na | <i>na</i> | Increase motor response | Martin et al., 1998 |
| FBgn0003015 | <i>osk</i> | na | <i>na</i> | All the memory mutants we have found that compromise attention-like phenotypes target MB function: radish (van Swinderen and Brembs, submitted), dunce, rutabaga, D0067, and D0264. | van Swinderen, 2009 |
| FBgn0260499 | <i>qvr</i> | na | <i>na</i> | This mutation is similar in phenotype to the Shaker (Sh), ether-a-gogo (<i>eag</i>), and Hyperkinetic (Hk) mutations, all of which affect potassium channel function in <i>D. melanogaster</i> . | Humphreys et al., 1996 |
| FBgn0261379 | <i>rad</i> | na | <i>na</i> | In both behavioral and brain-recording assays, radish mutant flies consistently displayed responses characteristic of a reduced attention span, with more frequent perceptual alternations and more random behavior compared with wild-type flies. | van Swinderen and Brembs, 2010 |
| FBgn0085387 | <i>shakB</i> | na | <i>na</i> | Adultflies mutant for shaking-B or Passover are hyperactive and have difficulty flying, they also exhibit uncoordinated leg movements under ether anaesthesia | Perrimon et al., 1989 |
| FBgn0016976 | <i>stnA</i> | na | <i>na</i> | stnA1/stnA6 flies emerge late, are bang sensitive, uncoordinated, have an abnormal jump response and become rapidly debilitated at 35°C. | Miklos et al., 1987 |

Supplementary Table 3B. Randomly generated gene sets (n=20)

| set 1 | Entrez ID | Gene Name | set 2 | Entrez ID | Gene Name | set 3 | Entrez ID | Gene Name | set 4 | Entrez ID | Gene Name | set 5 | Entrez ID | Gene Name | set 6 | Entrez ID | Gene Name | set 7 | Entrez ID | Gene Name | set 8 | Entrez ID | Gene Name |
|--------|-----------|-------------|-------------|--------------|-----------|--------|-----------|-----------|--------|-----------|-----------|--------|------------|-----------|-----------|---------------|-----------|--------|-----------|-----------|---------|------------|-----------|
| 3725 | JUN | | 83886 | PRSS27 | | 85508 | SCRT2 | | 253190 | SERHL2 | | 7779 | SLC30A1 | | 79956 | ERMP1 | | 84131 | CEP78 | | 253959 | RALGAP1A | |
| 57647 | DHX37 | | 5926 | ARID4A | | 1730 | DIAPH2 | | 4552 | MTRR | | 3906 | LALBA | | 0 | RP11-392O18.1 | | 27125 | AFF4 | | 4216 | MARPK4 | |
| 124808 | CCDC43 | | 23413 | NCS1 | | 4512 | MT-CO1 | | 53635 | PTOV1 | | 26103 | LRI1 | | 6860 | SYT4 | | 60561 | RINT1 | | 55737 | VP535 | |
| 221223 | CESSA | | 6583 | SLC22A4 | | 92715 | WDR85 | | 11325 | DDX42 | | 23230 | VSP13A | | 8675 | STX16 | | 27258 | LSM3 | | 5134 | PDCD2 | |
| 56934 | CA10 | | 79660 | PPP1R3B | | 5937 | RBMS1 | | 51495 | PTPLAD1 | | 64506 | CPEB1 | | 84365 | MK67IP | | 27019 | DNAI1 | | 9772 | KIAA0195 | |
| 8453 | CUL2 | | 153020 | RASGEF1B | | 90580 | C19orf52 | | 5192 | PEX10 | | 122402 | TRDR9 | | 56267 | CKBL2 | | 283130 | SLC25A45 | | 128989 | C22orf25 | |
| 7802 | DNAL1 | | 6522 | SLC4A2 | | 9390 | SLC22A13 | | 1600 | DAB1 | | 3329 | HSPD1 | | 23464 | GCAT | | 529 | ATP6V1E1 | | 57661 | PHRF1 | |
| 1105 | CHD1 | | 6611 | SMS | | 54858 | PGPEP1 | | 51816 | CECR1 | | 79568 | C2orf47 | | 51365 | FLA1A | | 6834 | SURF1 | | 84249 | FSD2 | |
| 94233 | OPN4 | | 4976 | OPA1 | | 222894 | FERD3L | | 285521 | COX18 | | 9319 | TRIP13 | | 132789 | GNPDA2 | | 55334 | SLC39A9 | | 7982 | ST7 | |
| 10445 | MCRS1 | | 90864 | SPSB3 | | 56946 | C11orf30 | | 5885 | RAD21 | | 84769 | MPV17L2 | | 51008 | ASCC1 | | 59342 | SCPEP1 | | 83693 | HSOL1 | |
| 10901 | DHRS4 | | 9791 | PTDSS1 | | 2230 | FDX1 | | 7162 | TPBG | | 25876 | TPBG | | 143884 | CWF19L2 | | 23132 | RAD54L2 | | 123096 | SLC25A29 | |
| 54831 | BEST2 | | 30845 | EHD3 | | 128486 | FITM2 | | 57104 | PNPLA2 | | 84188 | FAR1 | | 662 | BNIP1 | | 2119 | ETV5 | | 11197 | WIF1 | |
| 4069 | LYZ | | 4089 | SMAD4 | | 51236 | FAM203A | | 284129 | SLC26A11 | | 64106 | NPPFR1 | | 84271 | POLDIP3 | | 29925 | GMPPB | | 80164 | ACO10336.1 | |
| 149998 | LIPI | | 64151 | NCAPG | | 285282 | RABL3 | | 4597 | MVD | | 112950 | MED8 | | 1506 | CTRL | | 57062 | DDX24 | | 3008 | HIST1H1E | |
| 112840 | WDR89 | | 1831 | TSC2D3 | | 51 | ACOX1 | | 1577 | CYP3A5 | | 405753 | DUOXA2 | | 64121 | RRRAGC | | 6934 | TCF7L2 | | 28970 | C11orf54 | |
| 10539 | GLRX3 | | 3720 | JARID2 | | 3142 | HLX | | 55750 | AGK | | 55740 | ENAH | | 146923 | RUNDC1 | | 978 | CDA | | 129531 | MITD1 | |
| 6621 | SNAPC4 | | 9221 | SNAPC1 | | 9371 | KIF3B | | 55109 | AGGF1 | | 80148 | PQLC1 | | 79892 | MCMBP | | 51306 | FAM13B | | 80119 | PIF1 | |
| 5406 | PNLIP | | 217 | ALDH2 | | 25873 | RPL36 | | 140735 | DYNLL2 | | 79657 | RPAP3 | | 79002 | C19orf43 | | 84239 | ATP13A4 | | 92715 | WDR85 | |
| 23076 | RRP1B | | 9355 | LHX2 | | 3248 | HPGD | | 9899 | SV2B | | 5728 | PTEN | | 22911 | WDR47 | | 129831 | RBM45 | | 51241 | COX16 | |
| 29882 | ANAPC2 | | 2521 | FUS | | 51637 | C14orf166 | | 3131 | HLF | | 4686 | NCBP1 | | 26088 | GGA1 | | 388753 | C1orf31 | | 84193 | SETD3 | |
| 493753 | C2orf64 | | 23383 | MAU2 | | 10367 | FAF1 | | 5230 | PGK1 | | 10367 | CBARA1 | | 2551 | GABPA | | 4038 | LRP4 | | 51150 | SDFA | |
| 9978 | RBX1 | | 8661 | EIF3A | | 6844 | VAMP2 | | 5629 | PROX1 | | 8899 | PRPF4B | | 440957 | C3orf78 | | 6497 | SKI | | 7162 | TPBG | |
| 26003 | GORASP2 | | 64167 | ERAP2 | | 4301 | MLLT4 | | 534 | ATP6V1G2 | | 3087 | HROX | | 283208 | P4HA3 | | 338917 | VSX2 | | 2833285 | MORN3 | |
| 431705 | ASTL | | 2108 | ETFA | | 79887 | PLBD1 | | 1894 | ECT2 | | 5202 | PFDN2 | | 79648 | MCPH1 | | 10933 | MORF4L1 | | 10458 | BAIAP2 | |
| 2274 | FHL2 | | 2752 | GLUL | | 54107 | POLE3 | | 5204 | PFDN5 | | 51 | ACOX1 | | 9126 | SMC3 | | 9446 | GSTO1 | | 153527 | ZMAT2 | |
| 8760 | CD52 | | 58505 | OSTC | | 3475 | IFRD1 | | 949 | SCARB1 | | 56848 | SPHK2 | | 56995 | TULP4 | | 91252 | SLC39A13 | | 54932 | EXD3 | |
| 123207 | C15orf40 | | 10514 | MYBBP1A | | 11059 | WWP1 | | 11059 | WWP1 | | 1504 | CEP135 | | 84188 | FAR1 | | 55206 | SBNO1 | | 10152 | AB12 | |
| 79993 | ELOVL7 | | 2110 | ETFDH | | 126789 | PUSL1 | | 23597 | ACOT9 | | 10330 | CNPY2 | | 260429 | PRSS33 | | 51111 | SUV420H1 | | 26589 | MRLP46 | |
| 84705 | GTPBP3 | | 6293 | VPS52 | | 4335 | MNT | | 11174 | ADAMTS6 | | 5884 | RAD17 | | 1939 | EIF2D | | 340280 | UNCX | | 23474 | ETHE1 | |
| 149998 | LIPI | | 55079 | FEZF7 | | 153222 | C5orf41 | | 50636 | ANO7 | | 3008 | HIST1H1E | | 254295 | PHYHD1 | | 2230 | FDX1 | | 8315 | BRAP | |
| 358 | AQP1 | | 51596 | CUTA | | 405753 | DUOXA2 | | 1457 | CSNK2A1 | | 60493 | FASTKD5 | | 51548 | SIR7E | | 84504 | NXK6-2 | | 51056 | LAP3 | |
| 79781 | IQCA1 | | 23426 | GRIP1 | | 222962 | SLC29A4 | | 9328 | SIRT2 | | 22933 | GTF3C5 | | 3480 | IGF1R | | 4999 | ORC2 | | 30820 | KCNIP1 | |
| 29925 | GMPPB | | 175 | AGA | | 2648 | KAT2A | | 9861 | PSMD6 | | 51079 | NDUFA13 | | 4907 | NTSE | | 7170 | TPM3 | | 284723 | SLC25A34 | |
| 55174 | INTS10 | | 56894 | AGPAT3 | | 51056 | LAP3 | | 390916 | NUDT19 | | 97 | ACYP1 | | 54529 | ASNSD1 | | 1523 | CUX1 | | 118424 | UBE2J2 | |
| 55726 | C12orf11 | | 6389 | SDHA | | 4014 | LOR | | 64106 | NPPFR1 | | 51306 | FAM13B | | 7360 | UGP2 | | 54346 | UNC93A | | 8715 | NOL4 | |
| 55526 | DHTKD1 | | 25782 | RAB3GAP2 | | 2562 | GABRB3 | | 10157 | AASS | | 5693 | PMSB5 | | 83604 | TMEM47 | | 23125 | CAMTA2 | | 79568 | C2orf47 | |
| 3156 | HMGCR | | 8301 | PICALM | | 10629 | TAF6L | | 343702 | XKR7 | | 51318 | MRLP35 | | 10476 | ATP5H | | 54861 | SNRK | | 7465 | WEE1 | |
| 11333 | PDAP1 | | 51637 | C14orf166 | | 26275 | STRADA | | 10399 | GNB2L1 | | 26275 | HIBCH | | 9355 | LHX2 | | 8800 | PEX11A | | 28964 | GIT1 | |
| 5970 | RELA | | 25911 | DPCD | | 4807 | NHLH1 | | 54456 | MOV10L1 | | 9527 | GOSR1 | | 5864 | RAB3A | | 10157 | AASS | | 708 | C1QBP | |
| 5411 | PNN | | 83693 | HSDL1 | | 57534 | MIB1 | | 27340 | UTP20 | | 2072 | ORCC4 | | 3326 | HSP90AB1 | | 53831 | GPR84 | | 89782 | LMLN | |
| 4711 | NDUFB5 | | 1781 | DYNC1I2 | | 51477 | ISYNA1 | | 10056 | FAR5B | | 4841 | NONO | | 2960 | GTF2E1 | | 142679 | DUSP19 | | 137695 | TMEM68 | |
| 54880 | BCOR | ADHD | 3603 | IL16 | | 2132 | EXT2 | | 27306 | HPGDS | | 5422 | POLA1 | | 4069 | LYZ | | 4839 | NOP2 | | 57649 | PHF12 | |
| 7084 | TK2 | | 9945 | GFP22 | | 285527 | FRYL | | 84288 | EPCAB2 | | 728489 | DNLZ | | 474 | ATOH1 | | 143941 | ZNF407 | | 56913 | TTC36 | |
| 30012 | TLX3 | | 2021 | ENDOG | | 4331 | ENMAT1 | | 79969 | ATAT1 | | 206338 | ACO10282.1 | | 55628 | ZNF407 | | 11171 | STRAP | | 1983 | EIF5 | |
| 80176 | SPSB1 | | 90637 | ZFAND2A | | 10199 | MPHOSPH10 | | 6726 | SRP9 | | 79183 | TTPAL | | 10153 | CEBPZ | | 79157 | MFSD11 | | 84908 | FAM136A | |
| 54825 | CDHR2 | ADHD | 3746 | KCNC1 | | 9201 | DCLK1 | | 3398 | ID2 | | 51759 | C9orf78 | | 27336 | HTATSF1 | | 6136 | RPL12 | | 83855 | KLF16 | |
| 26994 | RNF11 | | 821 | CANX | | 55611 | OTUB1 | | 54919 | HEATR2 | | 9202 | ZMYM4 | | 2898 | GRK2 | | 60493 | FASTKD5 | | 677 | ZFP36L1 | |
| 9040 | UBE2M | | 255426 | RASGEF1C | | 79643 | CHMP6 | | 87178 | PNPT1 | | 64097 | EPB41L4A | | 10090 | UST | | 51102 | MECR | | 51255 | RNF181 | |
| 51741 | WVOX | | 535 | ATP6VOA1 | | 3781 | KCNN2 | | 55266 | TMEM19 | | 163688 | CALML6 | | 55711 | FAR2 | | 7298 | TYMS | | 3945 | LDHB | |
| 284723 | SLC25A34 | | 133690 | CAPSL | | 9379 | NRXN2 | | 4783 | NFIL3 | | 113174 | SAAL1 | | 26268 | FBXO9 | | 255426 | RASGEF1C | | 10935 | PRDX3 | |
| 122769 | LRR1 | | 55814 | BDP1 | | 25921 | ZDHHC5 | | 80308 | FLAD1 | | 266675 | BEST4 | | 51003 | MED31 | | 25841 | ABT2 | | 58508 | MLL3 | |
| 10459 | MAD2L2 | | 23519 | ANP32D | | 5469 | MED1 | | 64518 | TEKT3 | | 10257 | ABCC4 | | 9895 | TECPR2 | | 84897 | TBRG1 | | 1487 | CTBP1 | |
| 79657 | RPAP3 | | 2239 | GPC4 | | 1104 | RCC1 | | 113510 | HELQ | | 9153 | SLC28A2 | | 59336 | PRDM13 | | 84539 | MCHR2 | | 122011 | CSNK1A1L | |
| 53 | ACP2 | | 7307 | UZAF1 | | 63036 | CELA2A | | 51365 | PLA1A | | 9772 | KIAA0195 | | 25909 | AHCTF1 | | 10449 | ACAA2 | | 1041 | CDSN | |
| 85369 | FAM40A | | 23406 | COTL1 | | 4617 | MYF5 | | 51312 | NDP88 | | 4927 | WDR6 | | 79154 | DHRS11 | | 9400 | RECQL5 | | 54455 | FBXO42 | |
| 23294 | ANKS1A | | 130557 | ZNF513 | | 3175 | ONECUT1 | | 55112 | WDR6 | | 22821 | RASA3 | | 126326 | GIPC3 | | 51070 | NOSIP | | 353 | APRT | |
| 51650 | MRPS33 | | 112399 | EGLN3 | | 7170 | TPM3 | | 25940 | FAM98A | | 995 | CDCC25C | | 9046 | DOK2 | | 84986 | ARHGAP19 | | 51081 | MRPS7 | |
| 54769 | DIRAS2 | | 8562 | DENR | | 80031 | SEMA6D | | 317762 | CCDC85C | | 10730 | YME1L1 | | 2764 | GMFB | | 29901 | SAC3D1 | | 260429 | PRSS33 | |
| 6319 | SCD | | 55567 | DNAH3 | | 200205 | IBA57 | | 5245 | PHB | | 10138 | PHB | | 9543 | IGDC33 | | 527 | ATP6VOC | | 996 | CDCC27 | |
| 79813 | EHMT1 | | 84487 | DGCR8 | | 2784 | GNB3 | | 51646 | YPEL5 | | 6146 | RPL22 | | 79039 | DDX54 | | 6223 | RPS19 | | 23383 | MAU2 | |
| 219855 | SLC37A2 | | 5804 | CREG1 | | 8243 | SMC1A | | 79685 | SAP30L | | 9487 | FIGL | | 27075 | SPAN13 | | 7189 | TRAF6 | | 50674 | NEUROG3 | |
| 3718 | JAK3 | | 80155 | NAA15 | | 80207 | OPA3 | | 9610 | RIN1 | | 64318 | NOC3L | | 55571 | C2orf29 | | 1603 | DAD1 | | 27304 | MOC53 | |
| 192877 | C22orf39 | | 55739 | CARKD | | 4927 | NUP88 | | 57864 | SLC46A2 | | 493753 | C2orf64 | | 1603 | DAD1 | | 3141 | HLCS | | 9293 | GPR52 | |
| 728294 | D2HGDH | | 1586 | CYP17A1 | | 2128 | EVX1 | | 1089 | TXNRD2 | | 56996 | SLC12A9 | | 5862 | RBD2A | | 147912 | SIX5 | | 5540 | PPYR1 | |
| 3312 | HSPA8 | | 6167 | RPL37 | | 5136 | PDE1A | | 3 | CREBL2 | | 1117 | CHL3L2 | | 100131187 | TSTD1 | | 285672 | SREK1IP1 | | 2239 | GP4C | |
| 55768 | NGLY1 | | 56986 | DTWD1 | | 444 | ASPH | | 374407 | DNAJB13 | | 5707 | PSMD1 | | 55687 | TRMU | | 8022 | LHX3 | | 51499 | TRIP1A | |
| 5303 | PIN4 | | 5170 | PDPK1 | | 5538 | PTT1 | | 56344 | CABP5 | | 164633 | CABP7 | | 342371 | ATXNL1 | | 5540 | PPYR1 | | 1655 | DDX5 | |
| 95 | ACY1 | | 390637 | C15orf58 | | 94015 | TTYH2 | | 154313 | C6orf165 | | 10291 | SF3A1 | | 57577 | KIAA1407 | | 3421 | IDH3G | | 54033 | RBM11 | |
| 89845 | ABCC1 | | | | | | | | | | | | | | | | | | | | | | |

| set 9 | Entrez ID | Gene Name | set 10 | Entrez ID | Gene Name | set 11 | Entrez ID | Gene Name | set 12 | Entrez ID | Gene Name | set 13 | Entrez ID | Gene Name | set 14 | Entrez ID | Gene Name | set 15 | Entrez ID | Gene Name | set 16 | Entrez ID | Gene Name |
|-------------|--------------|----------------|--------|---------------|-----------|---------------|------------------|---------------|--------|-------------|-----------|--------------|-----------|--------------|------------------|--------------|-----------|--------|-----------|-----------|--------|-----------|-----------|
| | 6945 | MLX | 23397 | NCAPH | 6581 | SLC22A3 | 4015 | LOX | 22984 | PDCD11 | 5578 | PRKCA | 23386 | NUDCD3 | 8379 | MADL1 | | | | | | | |
| | 10229 | COQ7 | 64419 | MTMR14 | 840 | CASP7 | 6565 | SLC15A2 | 117584 | RFLP | 6924 | TCEB3 | 2242 | FES | 9568 | GABBR2 | | | | | | | |
| | 92822 | ZNF276 | 57122 | NUP107 | 49855 | SCAPER | 10051 | SMC4 | 55351 | STK32B | 9217 | VAPB | 22796 | COG2 | 1477 | CSTF1 | | | | | | | |
| | 84188 | FAR1 | 1781 | DYNC112 | 22919 | MAPRE1 | 10211 | FLOT1 | 64786 | TBC1D15 | 84662 | GLIS2 | 54802 | TRIT1 | 84900 | RNF272 | | | | | | | |
| | 11194 | ABCB8 | 23440 | QTP | 7110 | TMF1 | 201232 | SLC16A13 | 129831 | RBM45 | 84823 | LMNB2 | 54814 | QPCTL | 1491 | CTH | | | | | | | |
| | 51389 | RWDD1 | 6581 | SLC22A3 | 1576 | CYP3A4 | 246175 | CNO176L | 9325 | TRIP4 | 1339 | COXA2 | 83938 | C10orf11 | 114826 | SMYD4 | | | | | | | |
| | 253190 | SERHL2 | 51654 | CDK5RAP1 | 2925 | GRPR | 11338 | U2AF2 | 8864 | PER2 | 2050 | EPHB4 | 9055 | PRC1 | 57476 | GRAMD1B | | | | | | | |
| | 54726 | OTUD4 | 51107 | APH1A | 51218 | GLRX5 | 83440 | ADPGK | 206338 | ACO10282.1 | 387755 | INSC | 27339 | PRPF19 | 63908 | NAPB | | | | | | | |
| | 3008 | HIST1H1E | 65080 | MRPL44 | 51729 | WBP11 | 23071 | ERP44 | 9908 | G3BP2 | 9328 | GTF3C5 | 8563 | THOC5 | 28514 | DLL1 | | | | | | | |
| | 144233 | BCDIN3D | 3642 | INSM1 | 5778 | PTPN7 | 55972 | SLC25A40 | 112399 | EGLN3 | 51479 | ANKFY1 | 6205 | RPS11 | 51529 | ANAPC11 | | | | | | | |
| | 51726 | DNAJB11 | 151473 | SLC16A14 | 2648 | KAT2A | 95 | ACY1 | 260429 | PRSS33 | 29959 | NRBP1 | 9406 | ZRANB2 | 54881 | TEX10 | | | | | | | |
| | 54970 | TTC12 | 3074 | HEXB | 80176 | SPSB1 | 79877 | DCAKD | 1464 | CSPG4 | 90627 | STAR13 | 4976 | OPA1 | 9589 | WTAP | | | | | | | |
| | 8549 | LGR5 | 83606 | C22orf13 | 55614 | KIF16B | 7355 | SLC35A2 | 1053 | CEBPE | 5534 | PPP3R1 | 80279 | CDK5RAP3 | 148979 | GLIS1 | | | | | | | |
| | 55735 | DNAJC11 | 84075 | FSCB | 219409 | GSX1 | 1464 | CSPG4 | 51673 | TPPP3 | 115548 | FCHO2 | 29914 | UBOAA1 | 23005 | MAPKBP1 | | | | | | | |
| | 414301 | DDI1 | 339287 | MSL1 | 9973 | CCS | 9066 | SYT7 | 7737 | RNF113A | 9869 | SETDB1 | 23054 | NCOA6 | 11231 | SEC63 | | | | | | | |
| | 529 | ATP6V1E1 | 3796 | KIF2A | 117143 | TADA1 | 51084 | CRYL1 | 6608 | SMO | 481 | ATP1B1 | 84647 | PLA2G12B | 64146 | COG8 | | | | | | | |
| | 10901 | DHRS4 | 55011 | PIH1D1 | 25851 | TECPR1 | 1576 | CYP3A4 | 57799 | RAB40C | 8988 | HSBP3 | 51389 | RWDD1 | 2729 | GCLC | | | | | | | |
| | 55571 | C2orf29 | 85417 | CCNB3 | 60436 | TGIF2 | 5884 | RAD17 | 55753 | OGDHL | 2483 | FRG1 | 55218 | EXD2 | 9784 | SINX7 | | | | | | | |
| | 125061 | AFMID | 115825 | WDFY2 | 64786 | TBL1D15 | 254528 | C16orf73 | 255374 | MBLAC1 | 5829 | PXN | 1362 | CPD | 83444 | INO108 | | | | | | | |
| | 5527 | PPP2R5C | 6399 | TRAPPC2 | 26103 | LRI1T | 84858 | ZNF503 | 7205 | TRIP6 | 6557 | SLC12A1 | 51008 | ASCC1 | 3725 | JUN | | | | | | | |
| | 402055 | SRRD | 5780 | PTPN9 | 10250 | PTPN9 | 55568 | GALNT10 | 9641 | IKRKE | 29599 | KANK2 | 114826 | SMYD4 | 79598 | CEP97 | | | | | | | |
| | 54708 | 40607 | 91147 | TMEM67 | 9790 | BMS1 | 95 | ACY1 | 51399 | TRAPPC4 | 1586 | CYP17A1 | 1117 | CH13L2 | 81554 | WBSRC16 | | | | | | | |
| | 79796 | ALG9 | 388585 | HES5 | 85302 | FBF1 | 3008 | HIST1H1E | 23016 | EXOSC7 | 51398 | C19orf56 | 27039 | PKD2L2 | 9202 | ZMYM4 | | | | | | | |
| | 535 | ATP6V0A1 | 9869 | SETDB1 | 4338 | MOC52 | 55611 | OTUB1 | 2571 | GAD1 | 25821 | MTO1 | 55729 | ATF7IP | 6103 | RPGR | | | | | | | |
| | 11197 | WIF1 | 85414 | SLC45A3 | 84440 | RAB11FIP4 | 23262 | PPP5K2 | 54108 | CHRAC1 | 85302 | FBF1 | 9451 | E1F2AK3 | 54606 | DDX56 | | | | | | | |
| | 79660 | PPP1R3B | 55677 | IWS1 | 9202 | ZMYM4 | 6500 | SKP1 | 9950 | GOLGA5 | 68005 | CHID1 | 5921 | RASA1 | 80164 | ACO10336.1 | | | | | | | |
| | 1410 | CRYAB | 6096 | RORB | 0 | ALV121963.1 | 10231 | RCAN2 | 1576 | CYP3A4 | 64801 | ARV1 | 84950 | PRPF38A | 4802 | NFYC | | | | | | | |
| | 255758 | TC1X1D2 | 196385 | DNAH10 | 90 | ACV1R1 | 10645 | CAMKK2 | 150159 | NHEDC1 | 7570 | ZNF22 | 221400 | TDRD6 | 84720 | PIGO | | | | | | | |
| | 284361 | C19orf63 | 54785 | C17orf59 | 1800 | DPEP1 | 57502 | NLGN4X | 9821 | RB1CC1 | 3516 | RBJF | 79956 | ERMP1 | 9700 | ESPL1 | | | | | | | |
| | 6875 | TAF4B | 163688 | CALML6 | 9899 | SV2B | 51433 | ANAPC5 | 29915 | HCFC2 | 27042 | DIEXF | 5459 | POU4F3 | 4999 | ORC2 | | | | | | | |
| | 5814 | PURB | 9698 | PUM1 | 29970 | IQGJ-SCHIP1 | 23258 | DENND5A | 51135 | IRAK4 | 84289 | ING5 | 4199 | ME1 | 5191 | PEX7 | | | | | | | |
| | 5048 | PAFAH1B1 | 1653 | DDX1 | 28970 | C11orf54 | 93973 | DDX1 | 253190 | SERHL2 | 22888 | UBOX5 | 231 | AKR1B1 | 116840 | CNTROB | | | | | | | |
| | 8100 | IFT88 | 8815 | BANF1 | 118924 | FRA10AC1 | 1053 | CEBPE | 116151 | C20orf108 | 6582 | SLC22A2 | 151473 | SLC16A14 | 259232 | NALCN | | | | | | | |
| | 6678 | SPARC | 8394 | PIP5K1A | 284129 | SLC26A11 | 358 | AQP1 | 538 | ATP7A | 414149 | ACBD7 | 50999 | TMED5 | 23184 | MESDC2 | | | | | | | |
| | 2639 | GCDH | 22936 | ELL2 | 51170 | HSD17B11 | 79675 | FASTKD1 | 64902 | AGXT2 | 9908 | G3BP2 | 54482 | CCDC76 | 56624 | ASAH2 | | | | | | | |
| | 1389 | CREBL2 | 114088 | TRIM9 | 8881 | CDC16 | 55708 | MIER1 | 55081 | IFT57 | 374291 | NDUF57 | 1207 | CLNS1A | 25875 | LETMD1 | | | | | | | |
| | 23399 | CTDNEP1 | 51678 | MPP6 | 63893 | UBE2O | 286 | ANK1 | 7917 | BAG6 | 7274 | TTPA | 2820 | GPD2 | 196394 | AMN1 | | | | | | | |
| | 210 | ALAD | 535 | ATP6V0A1 | 10352 | WARS2 | 90196 | SYS1 | 6473 | SHOX | 9136 | RRP9 | 84271 | FOLDIP3 | 3008 | HIST1H1E | | | | | | | |
| | 64854 | USP46 | 10398 | MYL9 | 9986 | RCE1 | 4907 | NT5E | 6557 | SLC12A1 | 5105 | PCK1 | 282890 | ZNF311 | 414149 | ACBD7 | | | | | | | |
| | 254359 | ZDHC24 | 55094 | GPATCH1 | 51390 | AIG1 | 8445 | DYRK2 | 7411 | VBP1 | 6943 | TCF21 | 51295 | EC5IT | 821 | CANX | | | | | | | |
| | 9685 | CLINT1 | 55207 | ARL8B | 4829 | NMBR | 122769 | LRR1 | 142678 | MB2 | 8649 | LAMTOR3 | 51517 | NCKIPSD | 54346 | UNC93A | | | | | | | |
| | 493753 | C2orf64 | 10912 | GADD45G | 3280 | HES1 | 56922 | MCC1 | 26100 | WPI2 | 55657 | ZNF692 | 115825 | WDFY2 | 83451 | ABHD11 | | | | | | | |
| | 1111 | CHEK1 | 55753 | OGDHL | 9400 | RECL5 | 51639 | AC008073.5 | 79753 | SNIP1 | 3053 | SERPIND1 | 115948 | CCDC151 | 92960 | PEX11G | | | | | | | |
| | 951 | CD37 | 28973 | MRPS18B | 534 | ATP6V1G2 | 9182 | RASSF9 | 92342 | METTL18 | 206338 | ACO10282.1 | 23179 | RGL1 | 57794 | SURP1 | | | | | | | |
| | 5245 | PHB | 374291 | NDUFS7 | 401409 | RAB19 | 57446 | NDRG3 | 6654 | SOS1 | 6519 | SLC3A1 | 129787 | TMEM18 | 473 | RERE | | | | | | | |
| | 23028 | KDM1A | 1757 | SARDH | 142679 | DLSP19 | 1117 | CHI3L2 | 50487 | PLA2G3 | 117584 | RFLP | 55716 | LMBR1L | 50861 | STMN3 | | | | | | | |
| | 9068 | ANGPTL1 | 156 | ADRBK1 | 51185 | CRBN | 259232 | NALCN | 3954 | LETM1 | 79576 | NKAP | 22980 | TCF25 | 442117 | GALNTL6 | | | | | | | |
| | 5563 | PRKAA2 | 79956 | ERMP1 | 0 | AC120498.1 | 1504 | CTRB1 | 7936 | RDBP | 5439 | POLR2J | 6051 | RNPEP | 6873 | TF2 | | | | | | | |
| | 51604 | PIGT | 7274 | TTFA | 55505 | NOP10 | ADHD 2897 | GRIK1 | 11033 | ADAP1 | 54456 | MOV10L1 | 9477 | MED20 | 64747 | MFS1 | | | | | | | |
| | 79154 | DHRS11 | 11169 | WDHD1 | 131474 | CHCHD4 | 11047 | ADM1 | 9896 | FIG4 | 84951 | TNS4 | 6181 | RPLP2 | 144699 | FBXL14 | | | | | | | |
| | 23092 | ARHGAP26 | 50487 | PLA2G3 | 58490 | RPRD1B | 84315 | MON1A | 9442 | MED27 | 1358 | CPA2 | 30820 | KCNIP1 | 2108 | ETFA | | | | | | | |
| | 81932 | HDHD3 | 79147 | FKRP | 10933 | MORF4L1 | 11197 | WIF1 | 8543 | LMO4 | 51501 | C11orf73 | 29836 | NIPBL | 387521 | TMEM189 | | | | | | | |
| | 9931 | HELZ | 1585 | CYP11B2 | 113251 | LARP4 | 10092 | ARPC5 | 7841 | MOGS | 286205 | SCAI | 54707 | GNP2 | 55174 | INTS10 | | | | | | | |
| | 168544 | ZNF467 | 9546 | APBA3 | 84890 | ADO | 84188 | FAR1 | 2539 | G6PD | 6426 | SRSF1 | 6120 | RPE | 9039 | UBA3 | | | | | | | |
| | 254956 | MORN5 | 10573 | MRPL28 | 34 | ACADM | 115024 | NT5C3L | 10257 | ABCC4 | 64772 | ENGASE | 55856 | ACOT13 | 60561 | RINT1 | | | | | | | |
| | 8317 | CDC7 | 64080 | RBKS | 79993 | ELOVL7 | 128 | ADH5 | 149041 | RC3H1 | 4647 | MYO7A | 7307 | U2AF1 | 29767 | TMOD2 | | | | | | | |
| ADHD | 79659 | DYNC2H1 | 80725 | SRGIN1 | 260429 | PRSS33 | 55729 | ATF7IP | 81577 | FRS3 | 55332 | DRAM1 | 84516 | DCTN5 | 93099 | DMKN | | | | | | | |
| | 22856 | CHSY1 | 54949 | SDHAF2 | 5631 | PRPS1 | 23074 | UHRF1BP1L | 83902 | KRTAP17-1 | 441381 | LRRRC24 | 388403 | YPEL2 | 91012 | LASS5 | | | | | | | |
| | 1504 | CTRB1 | 64682 | ANAPC1 | 80725 | SRGIN1 | 10437 | IFI30 | 51119 | SBDS | 285343 | CRCC23 | 7507 | XPA | 79001 | VKORC2 | | | | | | | |
| | 3713 | IVL | 11021 | RAB35 | 57095 | PITHD1 | 4905 | NSF | 317781 | DDX51 | 26057 | ANKRD17 | 310 | ANXA7 | 83937 | RASSF4 | | | | | | | |
| | 26235 | FBXL4 | 23248 | RPRD2 | 9128 | PRPF4 | 55351 | STK32B | 84908 | FAM136A | 1719 | DHFR | 89978 | ATPB04 | 25804 | LSM4 | | | | | | | |
| | 56945 | MRPS22 | 55917 | CTTNBP2NL | 24137 | KIF4A | 7186 | TRAF2 | 128240 | APOA1BP | 95 | ACY1 | 4925 | NUCB2 | 92255 | LMBRD2 | | | | | | | |
| | 64080 | RBKS | 260429 | PRSS33 | 143884 | CWF19L2 | 10200 | MPHOSPH6 | 94233 | OPN4 | 84316 | LSMD1 | 1317 | SLC31A1 | 832 | CAFZB | | | | | | | |
| | 51433 | ANAPC5 | 347404 | LANCL3 | 91304 | C19orf6 | 55781 | RIOK2 | 10474 | TADA3 | 347 | APD2 | 10458 | BAIAP2 | 283385 | MORN3 | | | | | | | |
| | 11044 | PAPD7 | 25880 | TMEM186 | 53948 | MRPL16 | 1389 | CREBL2 | 53947 | A4GALT | 29951 | PDRN4 | 3091 | HIF1A | ADHD 7905 | REPS5 | | | | | | | |
| | 4668 | NAGA | 53981 | CPSF2 | 9818 | NUPL1 | 3911 | LAMA5 | 9133 | CCNB2 | 160728 | SLC5A8 | 57696 | DDX55 | 144717 | FAM109A | | | | | | | |
| | 9146 | HGS | 84334 | C14orf153 | 1357 | CPA1 | 55324 | ABCF3 | 157769 | FAM91A1 | 54606 | DDX56 | 4222 | MEOX1 | 23205 | ACSBG1 | | | | | | | |
| | 254552 | NUDT8 | 8646 | CHRD | 11070 | TMEM115 | 51499 | TRIA1P1 | 8668 | E1F3 | 905 | CCNT2 | 6150 | MRPL23 | 3182 | HNRNPAB | | | | | | | |
| | 51056 | LAP3 | 6345 | SRL | 9068 | ANGPTL1 | 100137047 | JMJD7 | 23116 | FAM179B | 116843 | C6orf192 | 8564 | KMO | 79065 | ATG9A | | | | | | | |

| set 17 | Entrez ID | Gene Name | set 18 | Entrez ID | Gene Name | set 19 | Entrez ID | Gene Name | set 20 | Entrez ID | Gene Name |
|--------|-----------|-----------|-------------|-------------|---------------|--------|-----------|-----------|-------------|--------------|-------------|
| | 92960 | PEX11G | | 2720 | GLB1 | | 203062 | TSNARE1 | | 54521 | WDR44 |
| | 738 | C11orf2 | | 5111 | PCNA | | 27232 | GNMT | | 26103 | LRIT1 |
| | 284129 | SLC26A11 | | 206358 | SLC36A1 | | 23519 | ANP32D | | 5394 | EXOSC10 |
| | 57448 | BIRC6 | | 90007 | MIDN | | 471 | ATIC | | 90139 | TSPAN18 |
| | 1175 | AP2S1 | | 58472 | SQRDL | | 286207 | C9orf117 | | 55651 | NHP2 |
| | 1993 | ELAVL2 | | 25904 | CNOT10 | | 26576 | SRPK3 | | 26074 | C20orf26 |
| | 10184 | LHFPL2 | | 307 | ANXA4 | | 51167 | CYB5R4 | | 474354 | LRRC18 |
| | 63036 | CELA2A | | 3996 | LLGL1 | | 11153 | FICD | | 81555 | YIPF5 |
| | 10042 | HMGXB4 | | 84334 | C14orf153 | | 7372 | UMPS | | 81888 | HY1 |
| | 666 | BOK | | 9452 | ITM2A | | 2799 | GNS | | 5001 | ORC5 |
| | 284451 | ODF3L2 | | 4659 | PPP1R12A | | 1812 | DRD1 | | 134430 | WDR36 |
| | 6872 | TAF1 | | 83450 | LRRC48 | | 2040 | STOM | | 7252 | TSHB |
| | 84542 | KIAA1841 | | 79893 | GGNBP2 | | 23406 | COTL1 | | 4086 | SMAD1 |
| | 6259 | RYK | | 5160 | PDHA1 | | 79087 | ALG12 | | 51569 | UFM1 |
| | 6730 | SRP68 | ADHD | 8464 | SUPT3H | | 80199 | FUZ | | 54939 | COMMD4 |
| | 8690 | JRKL | | 8834 | TMEM11 | | 6342 | SCP2 | | 4729 | NDUFV2 |
| | 27229 | TUBGCP4 | | 29071 | C1GALT1C1 | | 23063 | WAPAL | | 25920 | COBRA1 |
| | 4899 | NRF1 | | 80303 | EFHD1 | | 3224 | HOXC8 | ADHD | 55084 | SOBP |
| | 10951 | CBX1 | | 84545 | MRPL43 | | 4436 | MSH2 | | 54932 | EXD3 |
| | 4537 | MT-ND3 | | 284723 | SLC25A34 | | 9917 | FAM20B | | 27075 | TSPAN13 |
| | 442117 | GALNTL6 | | 285440 | CYP4V2 | | 2530 | FUT8 | | 5524 | PPP2R4 |
| | 9070 | ASH2L | | 1802 | DPH2 | | 51365 | PLA1A | | 5905 | RANGAP1 |
| | 53635 | PTOV1 | | 56986 | DTWD1 | | 5287 | PIK3C2B | | 6183 | MRRS12 |
| | 23091 | ZC3H13 | | 51028 | VPS36 | | 5714 | PSMD8 | | 93436 | ARMC6 |
| | 9493 | KIF23 | | 284098 | PIGW | | 5909 | RAP1GAP | | 10586 | MAB2L2 |
| | 37 | ACADV1 | | 112479 | ER12 | | 93624 | TADA2B | | 79064 | TMEM223 |
| | 23412 | COMMD3 | | 9238 | TBRG4 | | 8898 | MTMR2 | | 92558 | CCDC64 |
| | 29079 | MED4 | | 206358 | SLC36A1 | | 9046 | DOK2 | | 8879 | SGPL1 |
| | 25841 | ABTB2 | | 117283 | IP6K3 | | 2677 | GGCX | | 7386 | UQCRRS1 |
| | 284723 | SLC25A34 | | 92399 | MRRF | | 118426 | LOH12CR1 | | 3795 | KHK |
| | 771 | CA12 | | 10857 | PGRMC1 | | 129880 | BBS5 | | 57045 | TWSG1 |
| | 1305 | COL13A1 | | 2932 | GSK3B | | 151651 | EFHB | | 23480 | SEC61G |
| | 3248 | HPGD | | 4857 | NOVA1 | | 3008 | HIST1H1E | | 26088 | GGA1 |
| | 55272 | IMP3 | | 84188 | FAR1 | | 57020 | C16orf62 | | 1607 | DGKB |
| | 64422 | ATG3 | | 4841 | NONO | | 22876 | INPP5F | | 22895 | RPH3A |
| | 10885 | WDR3 | | 8226 | HDHD1 | | 6210 | RPS15A | | 55388 | MCM10 |
| | 84273 | C4orf14 | | 545 | ATR | | 4125 | MAN2B1 | | 6121 | RPE65 |
| | 10257 | ABCC4 | | 91445 | RNF185 | | 64783 | RBM15 | | 83786 | FRMD8 |
| | 80145 | THOC7 | | 5498 | PPOX | | 202559 | KHDRBS2 | | 11171 | STRAP |
| | 9400 | RECQL5 | | 54997 | TESC | | 949 | SCARB1 | | 8694 | DGAT1 |
| | 387338 | NSUN4 | | 3778 | KCNMA1 | | 5170 | PDPK1 | | 840 | CASP7 |
| | 6950 | TCP1 | | 8566 | PDXK | | 58259 | CTNBL1 | | 80725 | SRCIN1 |
| | 51365 | PLA1A | | 51528 | JKAMP | | 202018 | TAPT1 | | 9328 | GTF3C5 |
| | 124491 | TMEM170A | | 25886 | POC1A | | 5083 | PAX9 | | 55972 | SLC25A40 |
| | 56886 | UGGT1 | | 6256 | RXRA | | 55503 | TRPV6 | | 25979 | DHRS7B |
| | 10072 | DPP3 | | 56940 | DUSP22 | | 6522 | SLC4A2 | | 9277 | WDR46 |
| | 54903 | MKS1 | | 4351 | MPI | | 340156 | MYLK4 | | 21 | ABCA3 |
| | 23647 | ARFIP2 | | 389207 | GRXCR1 | | 54516 | MTRF1L | | 254170 | FBXO33 |
| | 6581 | SLC22A3 | | 3796 | KIF2A | | 10399 | GNB2L1 | | 54796 | BNC2 |
| | 9213 | XPR1 | | 54980 | C2orf42 | | 64750 | SMURF2 | | 25796 | PGLS |
| | 54915 | YTHDF1 | | 8266 | UBL4A | | 4695 | NDUFA2 | | 91647 | ATPAF2 |
| | 51552 | RAB14 | | 6829 | SUPT5H | | 114826 | SMYD4 | | 84145 | ZFYVE20 |
| | 55088 | C10orf118 | | 79863 | RBFA | | 115265 | DDIT4L | | 5184 | PEPD |
| | 4668 | NAGA | | 1410 | CRYAB | | 8611 | PPAP2A | | 648 | BMI1 |
| | 653437 | AQP12B | | 8533 | COPS3 | | 64768 | IPPK | | 5425 | POLD2 |
| | 51650 | MRPS33 | | 5322 | PLA2G5 | | 26960 | NBEA | | 3991 | LIPE |
| | 200081 | TXLNA | | 642 | BLMH | | 27095 | TRAPPC3 | | 57476 | GRAMD1B |
| | 22987 | SV2C | | 23241 | PACS2 | | 23054 | NCOA6 | | 867 | CBL |
| | 51009 | DERL2 | | 51763 | INPP5K | | 442117 | GALNTL6 | | 5780 | PTPN9 |
| | 728294 | D2HGDH | | 51390 | AIG1 | | 65080 | MRPL44 | | 80856 | KIAA1715 |
| | 26747 | NUFIP1 | | 29843 | SENP1 | | 57122 | NUP107 | | 124936 | CYB5D2 |
| | 10409 | BASP1 | | 6582 | SLC22A2 | | 143884 | CWF19L2 | | 113251 | LARP4 |
| | 22794 | CASC3 | | 4069 | LYZ | | 6147 | RPL23A | | 6610 | SMPD2 |
| | 51495 | PTPLAD1 | | 92609 | TIMMSO | | 835 | CASP2 | | 1783 | DYNC1L12 |
| | 55082 | ARGLU1 | | 54729 | NKX1-1 | | 23335 | WDR7 | | 2899 | GRIK3 |
| | 6209 | RPS15 | | 51660 | BRP44L | | 79794 | C12orf49 | | 836 | CASP3 |
| | 147912 | SIX5 | | 729991 | MEF2BNB | | 84826 | SFT2D3 | | 84900 | RNFT2 |
| | 4873 | NAP1L1 | | 5430 | AMAC1L3 | | 1933 | EEF1B2 | | 1665 | DHX15 |
| | 51642 | MRPL48 | | 84191 | FAM96A | | 284129 | SLC26A11 | | 83440 | ADPGK |