

Additional File 1

Table S1
Primer Sequences for qRT-PCR

| Gene | Direction | Sequence |
|----------------|------------------|--------------------------------|
| <i>Adora2a</i> | Forward | CACGCAGAGTTCCATCTTCAGC |
| <i>Adora2a</i> | Reverse | CCCAGCAAATCGCAATGATGCC |
| <i>Aldh1a2</i> | Forward | CACAAGACACGAGCCCATTGGA |
| <i>Aldh1a2</i> | Reverse | GGTTTGATGACCACGGTGTACC |
| <i>Cacna1e</i> | Forward | ATGGACAAGGCTACCACGGAGA |
| <i>Cacna1e</i> | Reverse | GACTGGCTTCTCCATCCGTCTT |
| <i>Ccl12</i> | Forward | GCTACAGGAGAATCACAAGCAGC |
| <i>Ccl12</i> | Reverse | ACGTCTTATCCAAGTGGTTTATGG |
| <i>Ccl2</i> | Forward | TGGCTCAGCCAGATGCAGT |
| <i>Ccl2</i> | Reverse | TTGGGATCATCTTGCTGGTG |
| <i>Ccl5</i> | Forward | CCTGCTGCTTTGCCTACCTCTC |
| <i>Ccl5</i> | Reverse | ACACACTTGCGGTTCTTCGA |
| <i>Cd69</i> | Forward | TTTGGAGGGGTTTCAGTGGT |
| <i>Cd69</i> | Reverse | GCTGTCTACACGGAGGAAGT |
| <i>Chac1</i> | Forward | TGACCCTCCTGAAGACCGTGA |
| <i>Chac1</i> | Reverse | AGTGTCATAGCCACCAAGCACG |
| <i>Cpne6</i> | Forward | TCAGCTTCACGGTGGCTATCGA |
| <i>Cpne6</i> | Reverse | CTGTCATAGTCCTGGCAGATACC |
| <i>Dpp6</i> | Forward | CAATCCTGACCCTCTGTGATGC |
| <i>Dpp6</i> | Reverse | GCCATCTTTGGAGAACACAGGC |
| <i>Gpr84</i> | Forward | AAGCCTTCCAGAAGTGCATCGC |
| <i>Gpr84</i> | Reverse | CAGAGGAACACTGCGAAGCACA |
| <i>Icam1</i> | Forward | AAACCAGACCCTGGAAGTGCAC |
| <i>Icam1</i> | Reverse | GCCTGGCATTTCAGAGTCTGCT |
| <i>Ifna6</i> | Forward | CTTCCACAGGATCACTGTGTACCT |
| <i>Ifna6</i> | Reverse | TTCTGCTCTGACCACCTCCC |
| <i>Ifnb</i> | Forward | CTGGAGCAGCTGAATGGAAAG |
| <i>Ifnb</i> | Reverse | CTT CTC CGT CAT CTC CAT AGG G |
| <i>Ifng</i> | Forward | AACGCTACACACTGCATCTTGG |
| <i>Ifng</i> | Reverse | GCCGTGGCAGTAACAGCC |
| <i>Il1b</i> | Forward | ACCTGTCCTGTGTAATGAAAGACG |
| <i>Il1b</i> | Reverse | TGGGTATTGCTTGGGATCCA |
| <i>Il6</i> | Forward | CAGAATTGCCATCGTACAACCTTTTTCTCA |
| <i>Il6</i> | Reverse | AAGGTCATCATCGTTGTTCATACA |
| <i>Itgb3</i> | Forward | GTGAGTGCGATGACTTCTCCTG |
| <i>Itgb3</i> | Reverse | CAGGTGTCAGTGCGTGTAGTAC |

| | | |
|-----------------|---------|----------------------------|
| <i>Lepr</i> | Forward | CTTTCCTGTGGACAGAACCAGC |
| <i>Lepr</i> | Reverse | AGCACTGAGTGA CTCCACAGCA |
| <i>Lhx6</i> | Forward | AGAGAAAGCACCTCCAGAA |
| <i>Lhx6</i> | Reverse | TGGAGTTCTGAACCAAACCA |
| <i>Met</i> | Forward | GTTCTGCTTGGCAACGAGAGCT |
| <i>Met</i> | Reverse | GGAGAATGCACTGTATTGCGTCG |
| <i>Myt1l</i> | Forward | TGTCTGGATGCCCGCACAAAGA |
| <i>Myt1l</i> | Reverse | CTTCTGTGCGAGTTCCTGTTGC |
| <i>Nlgn1</i> | Forward | TGATGGGAGTGTCTTGGCAAGC |
| <i>Nlgn1</i> | Reverse | CCGTAGTTTCCTTTGGCAGCCT |
| <i>Nr4a2</i> | Forward | GCATACAGGTCCAACCCAGT |
| <i>Nr4a2</i> | Reverse | AATGCAGGAGAAGGCAGAAA |
| <i>Penk</i> | Forward | TGCAGCCAGGACTGCGCTAAAT |
| <i>Penk</i> | Reverse | GATCCTTGCAGGTCTCCAGAT |
| <i>Pmch</i> | Forward | CTCTGGAACAATACAAAAACGACG |
| <i>Pmch</i> | Reverse | GGTTTTACAGCCAGACTCAGTGG |
| <i>Parb</i> | Forward | GCTTCGTTTGCCAGGACAAGTC |
| <i>Parb</i> | Reverse | TGGCATCGGTTTCTAGTGACCT |
| <i>Stat1</i> | Forward | GAACGCGCTCTGCTCAA |
| <i>Stat1</i> | Reverse | TGCGAATAATATCTGGGAAAGTAA |
| <i>Syn3</i> | Forward | CCATCTCTGGAAACTGGAAGGC |
| <i>Syn3</i> | Reverse | CGCCGAACATTTCTGAGCAGCT |
| <i>Tac1</i> | Forward | TAATGGGCAAGCGGGATGCTGA |
| <i>Tac1</i> | Reverse | CCATTAGTCCAACAAAGGAATCTG |
| <i>Tnfa</i> | Forward | AAAATTTCGAGTGACAAGCCTGTAGC |
| <i>Tnfa</i> | Reverse | GTGGGTGAGGAGCACGTAG |
| <i>Tnfrsf1a</i> | Forward | ACGAATCACTCTGCTCCGTG |
| <i>Tnfrsf1a</i> | Reverse | TCGCAAGGTCTGCATTGTCA |
| <i>Tnfrsf1b</i> | Forward | GAGATGCCAAGGTGCCTCAT |
| <i>Tnfrsf1b</i> | Reverse | AACTGGGTGCTGTGGTCAAC |
| <i>Tor3a</i> | Forward | GGTGCCTATGTCTCAGCCTCTT |
| <i>Tor3a</i> | Reverse | GCCATAGA ACTGATGAGAGGGAG |

Table S2
Curated Psychiatric Disorder-Associated Gene List

| Schizophrenia | Bipolar Disorder | Major Depressive Disorder | ADHD | Autism Spectrum Disorder | Implicated gene | Reference(s) |
|---------------|------------------|---------------------------|------|--------------------------|-----------------|--|
| | | | X | | <i>5HT1B</i> | (Hawi et al., 2005) |
| | | X | | | <i>5HTT</i> | (Lohoff, 2010) |
| | | | | X | <i>ACHE</i> | (Abrahams et al., 2013) |
| | | | X | X | <i>ACTB</i> | (Mill et al., 2005), (Zamanian Azodi et al., 2019) |
| | | | | X | <i>ACTL6B</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ACY1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ADA</i> | (Abrahams et al., 2013) |
| | X | | | | <i>ADCY2</i> | (Mühleisen et al., 2014) |
| | | | | X | <i>ADCY3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ADNP</i> | (Abrahams et al., 2013) |
| | | | X | | <i>ADRA1A</i> | (Hayman and Fernandez, 2018) |
| | | | X | | <i>ADRA1B</i> | (Hayman and Fernandez, 2018) |
| | | | | X | <i>ADSL</i> | (Abrahams et al., 2013) |
| | | | | X | <i>AFF2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>AGAP2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>AGO1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>AGO2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>AGO4</i> | (Abrahams et al., 2013) |
| | | | | X | <i>AHDC1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>AHI1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>AHNAK</i> | (Abrahams et al., 2013) |
| | | | | X | <i>AKAP9</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ALDH1A3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ALDH5A1</i> | (Abrahams et al., 2013) |
| X | | | | | <i>ALDOA</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>ALG6</i> | (Abrahams et al., 2013) |
| X | | | | | <i>ALPK3</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>AMPD1</i> | (Abrahams et al., 2013) |
| | X | | | | <i>AMPD3</i> | (Huang et al., 2010) |
| | | | | X | <i>AMT</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ANK2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ANK3</i> | (Abrahams et al., 2013) |
| | | | X | X | <i>ANKRD11</i> | (Abrahams et al., 2013) |

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|---|---|---|---|---|----------------|--------------------------------|
| | | | | X | <i>ANXA1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>AP1S2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>AP2S1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>APBB1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>APH1A</i> | (Abrahams et al., 2013) |
| | | X | | | <i>APOE</i> | (Lohoff, 2010) |
| | | | | X | <i>ARHGEF9</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ARID1B</i> | (Abrahams et al., 2013) |
| | | | X | | <i>ARTN</i> | (Demontis et al., 2019) |
| X | | | | | <i>ARVCF</i> | (Liu et al., 2019) |
| | | | | X | <i>ARX</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ASAP2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ASH1L</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ASPM</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ASTN2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ASXL3</i> | (Abrahams et al., 2013) |
| X | | | | | <i>ATK3</i> | (Schmidt-Kastner et al., 2020) |
| | | | X | | <i>ATM</i> | (Hayman and Fernandez, 2018) |
| | | | | X | <i>ATP10A</i> | (Abrahams et al., 2013) |
| X | | | | | <i>ATP2A2</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>ATP2B2</i> | (Abrahams et al., 2013) |
| | | | X | | <i>ATP6V0B</i> | (Demontis et al., 2019) |
| | | | | X | <i>ATRX</i> | (Abrahams et al., 2013) |
| | X | | | | <i>ATXN7L3</i> | (Stahl et al., 2019) |
| | | | | X | <i>AUTS2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>AVPR1A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>B4GALT2</i> | (Demontis et al., 2019) |
| | | | | X | <i>BAZ2B</i> | (Abrahams et al., 2013) |
| | | | | X | <i>BCKDK</i> | (Abrahams et al., 2013) |
| | | | | X | <i>BCL11A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>BCORL1</i> | (Abrahams et al., 2013) |
| | X | X | | | <i>BDNF</i> | (Lohoff, 2010) |
| | | | | X | <i>BICRA</i> | (Abrahams et al., 2013) |
| X | | | | | <i>BNIP3L</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>BRAF</i> | (Abrahams et al., 2013) |
| | | | | X | <i>BRSK2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>BRWD3</i> | (Abrahams et al., 2013) |

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|---|---|---|---|---|-----------------|--|
| | | | | X | <i>BTAF1</i> | (Abrahams et al., 2013) |
| X | | | | | <i>BTG1</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>C12orf57</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CACNA1A</i> | (Abrahams et al., 2013) |
| X | X | | | X | <i>CACNA1C</i> | (Abrahams et al., 2013), (Bhat et al., 2012), (Charney et al., 2017), (Yoshikawa et al., 2021) |
| | | | | X | <i>CACNA1D</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CACNA1E</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CACNA1H</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CACNA2D3</i> | (Abrahams et al., 2013) |
| | X | | | X | <i>Cacna2d4</i> | (Schmidt-Kastner et al., 2020) |
| X | | | | X | <i>CACNB2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CAMK2B</i> | (Abrahams et al., 2013) |
| | | | X | | <i>CAMK2D</i> | (Hayman and Fernandez, 2018) |
| | | | X | | <i>CAMK2G</i> | (Hayman and Fernandez, 2018) |
| | | | | X | <i>CAPRIN1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CASK</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CASZ1</i> | (Abrahams et al., 2013) |
| | | X | | | <i>CATSPER1</i> | (Stahl et al., 2019) |
| | | | | X | <i>CC2D1A</i> | (Abrahams et al., 2013) |
| | | | X | | <i>CCDC24</i> | (Demontis et al., 2019) |
| | | | | X | <i>CCNG1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CCNK</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CCT4</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CDC42BPB</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CDH13</i> | (Abrahams et al., 2013) |
| | | | | X | <i>Cdh8</i> | (Pagnamenta et al., 2011) |
| | | | | X | <i>CDK13</i> | (Abrahams et al., 2013) |
| X | | | | | <i>CDK2AP1</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>CDK8</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CDKL5</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CELF4</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CEP135</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CEP41</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CGNL1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CHAMP1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CHD2</i> | (Abrahams et al., 2013) |

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|---|---|---|---|---|----------------|--|
| | | | | X | <i>CHD3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CHD7</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CHD8</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CHKB</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CHMP1A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CHRNA7</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CIB2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CIC</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CLASP1</i> | (Abrahams et al., 2013) |
| X | | | | | <i>CLCN3</i> | (Christensen and Børglum, 2019) |
| X | | | | | <i>CLU</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>CNKSR2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CNOT1</i> | (Abrahams et al., 2013), (Arcos-Burgos et al., 2012) |
| | | | | X | <i>CNOT3</i> | (Abrahams et al., 2013), (Christensen and Børglum, 2019) |
| | | | X | X | <i>CNR1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CNTN3</i> | (Chaste and Leboyer, 2012) |
| X | | | | X | <i>CNTN4</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CNTN5</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CNTN6</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CNTNAP2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CNTNAP3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CNTNAP4</i> | (Abrahams et al., 2013) |
| | | X | X | | <i>COMT</i> | (Shadrina et al., 2018) |
| | | | | X | <i>CORO1A</i> | (Abrahams et al., 2013) |
| X | | | | | <i>CPEB1</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>CPEB4</i> | (Abrahams et al., 2013) |
| X | | | | | <i>CPT1C</i> | (Schmidt-Kastner et al., 2020) |
| X | | | | | <i>CREB3L1</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>CREBBP</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CSDE1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CSNK2A1</i> | (Abrahams et al., 2013) |
| | X | | | | <i>CSRNP3</i> | (Stahl et al., 2019) |
| | | | | X | <i>CTCF</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CTNNA2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CTNNB1</i> | (Abrahams et al., 2013) |

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|---|---|---|---|---|------------------|---|
| | | | | X | <i>CTNND2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CTTNBP2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CUL3</i> | (Abrahams et al., 2013) |
| X | | | | | <i>CUL3EP300</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>CUL7</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CUX1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CYFIP1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>CYP27A1</i> | (Abrahams et al., 2013), (Liu et al., 2019) |
| X | | | | | <i>DAO</i> | (Verrall et al., 2010) |
| X | | X | | | <i>DAOA</i> | (Arias et al., 2014) |
| | | | | X | <i>DAPP1</i> | (Abrahams et al., 2013) |
| | X | X | X | | <i>DAT1</i> | (Hawi et al., 2005) |
| | | | X | | <i>DBH</i> | (Hawi et al., 2005) |
| | | | | X | <i>DCC</i> | (Abrahams et al., 2013) |
| | X | | | | <i>DCLK3</i> | (Chen et al., 2013), (McMahon and Detera-Wadleigh, 2020) |
| | | | | X | <i>DDHD2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>DDX3X</i> | (Abrahams et al., 2013) |
| | | | | X | <i>DEAF1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>DENR</i> | (Abrahams et al., 2013) |
| | | | | X | <i>DEPDC5</i> | (Abrahams et al., 2013) |
| | X | | | | <i>DGKH</i> | (Baum et al., 2008) |
| | | | | X | <i>DHCR7</i> | (Abrahams et al., 2013) |
| | X | | | | <i>DHH</i> | (Charney et al., 2017), (McMahon and Detera-Wadleigh, 2020), (Hou et al., 2016) |
| | | | | X | <i>DHX30</i> | (Abrahams et al., 2013) |
| | | | | X | <i>DIP2A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>DIP2C</i> | (Abrahams et al., 2013) |
| | | | X | | <i>DIRAS2</i> | (Hayman and Fernandez, 2018) |
| X | | X | | X | <i>DISC1</i> | (Abrahams et al., 2013), (Thomson et al., 2013) |
| | | | | X | <i>DLG2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>DLG4</i> | (Abrahams et al., 2013) |
| | | | | X | <i>DLGAP1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>Dlgap2</i> | (Poquet et al., 2016) |
| | | | | X | <i>DLX3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>DMD</i> | (Abrahams et al., 2013) |
| | | | | X | <i>DMPK</i> | (Abrahams et al., 2013) |

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|---|---|---|---|---|----------------|--|
| | X | | | | <i>DNAH1</i> | (McMahon and Detera-Wadleigh, 2020), (Chen et al., 2013) |
| | | | | X | <i>DNMT3A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>DOCK8</i> | (Abrahams et al., 2013) |
| | | | | X | <i>DOLK</i> | (Abrahams et al., 2013) |
| | | | X | | <i>DPH2</i> | (Demontis et al., 2019) |
| | | | | X | <i>DPP10</i> | (Abrahams et al., 2013) |
| | | | | X | <i>Dpp6</i> | (Marshall et al., 2008) |
| | | | | X | <i>DPYSL2</i> | (Abrahams et al., 2013) |
| | X | | | | <i>DRD1</i> | (Ni et al., 2002) |
| X | | | | | <i>DRD2</i> | (Beaulieu and Gainetdinov, 2011) |
| | | | | X | <i>DRD3</i> | (Shadrina et al., 2018) |
| | X | X | X | | <i>DRD4</i> | (Shadrina et al., 2018) |
| | | | X | | <i>DRD5</i> | (Mill et al., 2005) |
| | | | | X | <i>DSCAM</i> | (Abrahams et al., 2013) |
| | | | X | | <i>DUSP6</i> | (Demontis et al., 2019) |
| | | | | X | <i>DYNC1H1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>DYRK1A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>EBF3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>EEF1A2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>EFR3A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>EHMT1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>EIF3G</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ELAVL3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ELP4</i> | (Abrahams et al., 2013) |
| | | | | X | <i>EMSY</i> | (Abrahams et al., 2013) |
| | | | | X | <i>EP300</i> | (Abrahams et al., 2013) |
| | | | | X | <i>EP400</i> | (Abrahams et al., 2013) |
| X | | | | | <i>ERBB4</i> | (Mei and Xiong, 2008) |
| | | | | X | <i>ERBIN</i> | (Abrahams et al., 2013) |
| X | | | | | <i>ESRP2</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>ETFB</i> | (Abrahams et al., 2013), (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>FAM92B</i> | (Abrahams et al., 2013) |
| | | | | X | <i>FBN1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>FBRSL1</i> | (Abrahams et al., 2013) |
| X | | | | X | <i>FGFR1</i> | (Abrahams et al., 2013), (Demontis et al., 2019) |

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|---|---|--|---|---|----------------|---|
| | | | | X | <i>FMR1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>FOXG1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>FOXP1</i> | (Abrahams et al., 2013) |
| | | | X | X | <i>FOXP2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>FRMPD4</i> | (Abrahams et al., 2013) |
| | X | | | | <i>FSTL5</i> | (Stahl et al., 2019) |
| X | | | | | <i>FURIN</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>GABRA3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>GABRB2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>GABRB3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>GABRG3</i> | (Abrahams et al., 2013) |
| | X | | | | <i>GAL3ST3</i> | (Stahl et al., 2019) |
| | | | | X | <i>GALNT10</i> | (Abrahams et al., 2013) |
| | | | | X | <i>GALNT2</i> | (Abrahams et al., 2013) |
| | X | | | | <i>GALNT3</i> | (Stahl et al., 2019) |
| | | | | X | <i>GALNT8</i> | (Abrahams et al., 2013) |
| | | | | X | <i>GATM</i> | (Abrahams et al., 2013) |
| | | | | X | <i>GFAP</i> | (Abrahams et al., 2013) |
| | | | | X | <i>GGNBP2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>GIGYF1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>GIGYF2</i> | (Abrahams et al., 2013) |
| | | | X | | <i>GIT1</i> | (Palladino et al., 2019) |
| | | | | X | <i>GNAI1</i> | (Abrahams et al., 2013) |
| X | | | | | <i>GNB3</i> | (Lohoff, 2010), |
| | | | | X | <i>GPC4</i> | (Abrahams et al., 2013) |
| | | | | X | <i>GPHN</i> | (Abrahams et al., 2013) |
| | X | | | | <i>GRB7</i> | (McMahon and Detera-Wadleigh, 2020), (Hou et al., 2016) |
| X | | | | X | <i>GRIA1</i> | (Abrahams et al., 2013), (Barkus et al., 2014) |
| | | | | X | <i>Gria3</i> | (Chaste and Leboyer, 2012) |
| | | | | X | <i>GRID1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>GRIK2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>GRIK5</i> | (Abrahams et al., 2013) |
| | | | | X | <i>GRIN1</i> | (Abrahams et al., 2013) |
| X | X | | | X | <i>GRIN2A</i> | (Abrahams et al., 2013) |
| X | | | X | X | <i>GRIN2B</i> | (Abrahams et al., 2013), (Yoshikawa et al., 2021) |

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|---|---|---|---|---|----------------|--------------------------------|
| | | | | X | <i>GRIP1</i> | (Abrahams et al., 2013) |
| | | | X | | <i>GRM1</i> | (Hayman and Fernandez, 2018) |
| X | X | | | | <i>GRM3</i> | (Kandaswamy et al., 2013) |
| | | | | X | <i>HCFC1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>HCN1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>HDAC8</i> | (Abrahams et al., 2013) |
| | | | | X | <i>HDLBP</i> | (Abrahams et al., 2013) |
| | | | | X | <i>HECTD4</i> | (Abrahams et al., 2013) |
| | | | | X | <i>HECW2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>HEPACAM</i> | (Abrahams et al., 2013) |
| | | | | X | <i>HERC2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>HIVEP2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>HIVEP3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>HMGN1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>HNRNPH2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>HNRNPU</i> | (Abrahams et al., 2013) |
| | | | | X | <i>HOXA1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>HRAS</i> | (Abrahams et al., 2013) |
| X | | | | | <i>HSPA9</i> | (Schmidt-Kastner et al., 2020) |
| X | | | | | <i>HSPD1</i> | (Schmidt-Kastner et al., 2020) |
| X | | | | | <i>HSPE1</i> | (Schmidt-Kastner et al., 2020) |
| | | X | | | <i>HTR12A</i> | (Shadrina et al., 2018) |
| | | X | | | <i>HTR1A</i> | (Shadrina et al., 2018) |
| | | X | | | <i>HTR1B</i> | (Shadrina et al., 2018) |
| | X | X | | | <i>HTR2A</i> | (Lohoff, 2010) |
| | | X | | | <i>HTR2C</i> | (Shadrina et al., 2018) |
| | X | | | | <i>HTTLPR</i> | (Neves et al., 2008) |
| | | | | X | <i>HUWE1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ICA1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ILF2</i> | (Abrahams et al., 2013) |
| X | | | | | <i>INA</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>INTS1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>INTS6</i> | (Abrahams et al., 2013) |
| | | | X | | <i>IPO13</i> | (Demontis et al., 2019) |
| | | | | X | <i>IQSEC2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>IRF2BPL</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ITGB3</i> | (Abrahams et al., 2013) |

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|---|---|--|---|---|------------------|---|
| | | | | X | <i>JARID2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>KANSL1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>KAT2B</i> | (Abrahams et al., 2013) |
| X | | | | | <i>KAT5</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>KAT6A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>KATNAL2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>KCNB1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>KCNJ10</i> | (Abrahams et al., 2013) |
| | | | | X | <i>KCNQ2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>KCNQ3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>KCNS3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>KDM3B</i> | (Abrahams et al., 2013) |
| X | | | X | | <i>KDM4A</i> | (Demontis et al., 2019) |
| | | | | X | <i>KDM4C</i> | (Abrahams et al., 2013) |
| | | | | X | <i>KDM5B</i> | (Abrahams et al., 2013) |
| | | | | X | <i>KDM5C</i> | (Abrahams et al., 2013) |
| | | | | X | <i>KDM6A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>KDM6B</i> | (Abrahams et al., 2013) |
| | | | X | | <i>KDMA-AS1</i> | (Demontis et al., 2019) |
| | | | | X | <i>KIAA0232</i> | (Abrahams et al., 2013) |
| | | | | X | <i>KIAA1586</i> | (Abrahams et al., 2013) |
| | | | | X | <i>KIF14</i> | (Abrahams et al., 2013) |
| | | | | X | <i>KIRREL3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>KMT2A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>KMT2C</i> | (Abrahams et al., 2013) |
| | X | | | | <i>KMT2D</i> | (Charney et al., 2017), (McMahon and Detera-Wadleigh, 2020), (Hou et al., 2016) |
| | | | | X | <i>KMT2E</i> | (Abrahams et al., 2013) |
| | | | | X | <i>KMT5B</i> | (Abrahams et al., 2013) |
| | | | | X | <i>KPTN</i> | (Abrahams et al., 2013) |
| | | | | X | <i>LAMB1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>LDB1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>LEO1</i> | (Abrahams et al., 2013) |
| | | | X | | <i>LINC00461</i> | (Demontis et al., 2019) |
| | X | | | | <i>LINC01215</i> | (Stahl et al., 2019) |
| | | | X | | <i>LINC01288</i> | (Demontis et al., 2019) |

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|---|---|---|---|---|---------------------|--|
| | | | X | | <i>LINC01572</i> | (Demontis et al., 2019) |
| | | | X | | <i>LINC02060</i> | (Demontis et al., 2019) |
| | | | X | | <i>LINC02497</i> | (Demontis et al., 2019) |
| | | | | X | <i>LMX1B</i> | (Abrahams et al., 2013) |
| | | | | X | <i>LNPk</i> | (Abrahams et al., 2013) |
| | X | | | | <i>LOC101927314</i> | (Mühleisen et al., 2014) |
| | X | | | | <i>LOC102725191</i> | (Stahl et al., 2019) |
| | X | | | | <i>LOC105371789</i> | (Stahl et al., 2019) |
| | | | X | | <i>LPHN3</i> | (Schmidt-Kastner et al., 2020) |
| X | | | | X | <i>LRP1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>LRRC4C</i> | (Abrahams et al., 2013) |
| X | | | | | <i>LSM1</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>LZTR1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>MACROD2</i> | (Abrahams et al., 2013) |
| X | | | | | <i>MAD1L1</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>MAGEL2</i> | (Abrahams et al., 2013) |
| | | X | | | <i>MAOA</i> | (Shadrina et al., 2018) |
| | | | | X | <i>MAP1A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>MAPT-AS1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>MBD5</i> | (Abrahams et al., 2013) |
| | | | | X | <i>MBOAT7</i> | (Abrahams et al., 2013) |
| X | | | | | <i>MDK</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>MECP2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>MED13</i> | (Abrahams et al., 2013) |
| | | | | X | <i>MED13L</i> | (Abrahams et al., 2013) |
| X | | | | X | <i>MEF2C</i> | (Abrahams et al., 2013) |
| | | | | X | <i>MEIS2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>MET</i> | (Abrahams et al., 2013) |
| | | | | X | <i>MFRP</i> | (Abrahams et al., 2013) |
| | | | | X | <i>MIEN1</i> | (McMahon and Detera-Wadleigh, 2020), (Hou et al., 2016) |
| X | | | | X | <i>MIR137</i> | (Pasquinelli, 2012) |
| | X | | | | <i>MIR3127</i> | (McMahon and Detera-Wadleigh, 2020), (Chen et al., 2013) |
| | | | X | | <i>MIR3666</i> | (Demontis et al., 2019) |
| | X | | | | <i>MIR4655</i> | (McMahon and Detera-Wadleigh, 2020), (Hou et al., 2016) |

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|---|---|---|---|---|---------------------|---|
| | X | | | | <i>MIR4728</i> | (McMahon and Detera-Wadleigh, 2020), (Hou et al., 2016) |
| | X | | | | <i>MIR640</i> | (Cichon et al., 2011), (McMahon and Detera-Wadleigh, 2020) |
| | | | X | | <i>MIR9-2</i> | (Demontis et al., 2019) |
| | X | | | | <i>MIRLET7G</i> | (McMahon and Detera-Wadleigh, 2020), (Chen et al., 2013) |
| | | | | X | <i>MKX</i> | (Abrahams et al., 2013) |
| | | | | X | <i>MSL3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>MSNP1AS</i> | (Abrahams et al., 2013) |
| X | | X | | | <i>MTHFR</i> | (Lohoff, 2010) |
| | | | | X | <i>MTOR</i> | (Abrahams et al., 2013) |
| | X | | | | <i>MXI1</i> | (Charney et al., 2017), (McMahon and Detera-Wadleigh, 2020) |
| | | | | X | <i>MYH10</i> | (Abrahams et al., 2013) |
| | | | | X | <i>MYH9</i> | (Abrahams et al., 2013) |
| | | | | X | <i>MYO5A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>MYO9B</i> | (Abrahams et al., 2013) |
| | | | | X | <i>MYT1L</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NAA15</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NACC1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NAV2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NBEA</i> | (Abrahams et al., 2013) |
| | X | | | | <i>NCAM1</i> | (Escamilla and Zavala, 2008) |
| X | X | | | | <i>NCAN</i> | (Cichon et al., 2011), (McMahon and Detera-Wadleigh, 2020) |
| | | | | X | <i>NCKAP1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NCOA1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NCOR1</i> | (Abrahams et al., 2013) |
| X | | | | | <i>NDST3</i> | (Liu et al., 2019) |
| X | | | | | <i>NEK1</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>NEXMIF</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NF1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NFE2L3</i> | (Abrahams et al., 2013) |
| | X | | | X | <i>NFIX</i> | (Abrahams et al., 2013) |
| X | | | | | <i>NGEF</i> | (Schmidt-Kastner et al., 2020) |
| X | | | | | <i>NGN2/NEUROG2</i> | (Christensen and Børglum, 2019) |
| | | | | X | <i>NINL</i> | (Abrahams et al., 2013) |

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|---|---|---|---|---|---------------|---|
| | | | | X | <i>NIPBL</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NLGN1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NLGN2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NLGN3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NLGN4X</i> | (Abrahams et al., 2013) |
| X | | | | | <i>NMB</i> | (Schmidt-Kastner et al., 2020) |
| | | | X | | <i>NOS1</i> | (Weber et al., 2015) |
| X | | | | | <i>NOTCH4</i> | (Liu et al., 2019) |
| | | | | X | <i>NOVA2</i> | (Abrahams et al., 2013) |
| | | X | | | <i>NR3C1</i> | (Lohoff, 2010) |
| | | | | X | <i>NR3C2</i> | (Abrahams et al., 2013) |
| X | | X | | X | <i>NR4A2</i> | (Abrahams et al., 2013) |
| X | X | | | | <i>NRG1</i> | (Mei and Nave, 2014), (Escamilla and Zavala, 2008) |
| X | | | | | <i>NRGN</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>NRXN1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NRXN2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NRXN3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NSD1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NSD2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NTNG2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NTRK2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NUAK1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NUDCD2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>NUP155</i> | (Abrahams et al., 2013) |
| | | | | X | <i>OCRL</i> | (Abrahams et al., 2013) |
| | X | | | | <i>ODZ4</i> | (Kerner, 2014) |
| X | | | | | <i>OGFOD2</i> | (Schmidt-Kastner et al., 2020) |
| X | | | | | <i>OPCML</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>OPHN1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>OR52M1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>OTUD7A</i> | (Abrahams et al., 2013) |
| X | X | | | | <i>OTUD7B</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>OXTR</i> | (Abrahams et al., 2013) |
| | | | | X | <i>P2RX5</i> | (Abrahams et al., 2013) |
| | | | | X | <i>P4HA2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PACS1</i> | (Abrahams et al., 2013) |

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|---|---|---|---|---|----------------|--|
| | | | | X | <i>PACS2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PAH</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PAK1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PAK2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PARD3B</i> | (Abrahams et al., 2013) |
| | | | X | | <i>PARK2</i> | (Hayman and Fernandez, 2018) |
| | | | | X | <i>PAX5</i> | (Abrahams et al., 2013) |
| X | | | | X | <i>PAX6</i> | (Abrahams et al., 2013), (Yoshikawa et al., 2021) |
| | | | | X | <i>PCCA</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PCCB</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PCDH19</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PCDH7</i> | (Demontis et al., 2019) |
| | | | | X | <i>Pcdh9</i> | (Marshall et al., 2008) |
| | | X | | | <i>PCLO</i> | (Shadrina et al., 2018) |
| | X | | | | <i>PDE10A</i> | (Kerner et al., 2011) |
| X | | | | | <i>PDE4B</i> | (Liu et al., 2019) |
| | | | X | | <i>PDE4D</i> | (Hayman and Fernandez, 2018) |
| | | | | X | <i>PER2</i> | (Abrahams et al., 2013) |
| X | | | | | <i>PGBD1</i> | (Liu et al., 2019) |
| X | | | | | <i>PGM3</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>PHB</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PHF12</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PHF2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PHF21A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PHF3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PHF7</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PHF8</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PHIP</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PHRF1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PIK3R2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PLCB1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PLXNA4</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PLXNB1</i> | (Abrahams et al., 2013) |
| | | | X | | <i>POC1B</i> | (Demontis et al., 2019) |
| | | | | X | <i>POGZ</i> | (Abrahams et al., 2013) |
| | | | | X | <i>POMGNT1</i> | (Abrahams et al., 2013) |

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|---|--|--|---|---|-----------------------------|--------------------------------|
| | | | | X | <i>PON1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>POU3F3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PPP1R9B</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PPP2CA</i> | (Abrahams et al., 2013) |
| X | | | | | <i>PPP2R2A</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>PPP2R5D</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PPP5C</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PREX1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PRICKLE1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PRICKLE2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PRKCB</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PRKD1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PRKD2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PRKN</i> | (Abrahams et al., 2013) |
| X | | | | | <i>PRMT1</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>PRODH</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PRR12</i> | (Abrahams et al., 2013) |
| X | | | | | <i>PRSS16/POM121 L2</i> | (Liu et al., 2019) |
| | | | | X | <i>PSMD12</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PTCHD1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PTCHD1-AS</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PTEN</i> | (Abrahams et al., 2013) |
| X | | | | | <i>PTK2B</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>PTK7</i> | (Abrahams et al., 2013) |
| | | | | X | <i>PTPN11</i> | (Abrahams et al., 2013) |
| | | | X | | <i>PTPRF</i> | (Demontis et al., 2019) |
| | | | | X | <i>PYHIN1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>QRICH1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>RAB2A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>RAB43</i> | (Abrahams et al., 2013) |
| | | | | X | <i>RAC1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>RAD21</i> | (Abrahams et al., 2013) |
| | | | X | X | <i>RAI1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>RALA</i> | (Abrahams et al., 2013) |
| X | | | | | <i>RALGAPA2</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>RALGAPB</i> | (Abrahams et al., 2013) |

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|---|---|--|---|---|--------------------|---|
| | | | | X | <i>RANBP17</i> | (Abrahams et al., 2013) |
| X | | | | | <i>RANGAP1</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>RBFOX1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>RBM27</i> | (Abrahams et al., 2013) |
| | X | | | | <i>RBPJL</i> | (Stahl et al., 2019) |
| X | | | | | <i>RELA</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>RELN</i> | (Abrahams et al., 2013) |
| | | | | X | <i>RERE</i> | (Abrahams et al., 2013) |
| | | | | X | <i>RFX3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>RHEB</i> | (Abrahams et al., 2013) |
| | | | | X | <i>RHEBL1</i> | (Charney et al., 2017), (McMahon and Detera-Wadleigh, 2020), (Hou et al., 2016) |
| | | | | X | <i>RIMS1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>RLIM</i> | (Abrahams et al., 2013) |
| | X | | | | <i>RNA5SP223</i> | (McMahon and Detera-Wadleigh, 2020) |
| | X | | | | <i>RNU2-17P</i> | (Stahl et al., 2019) |
| | X | | | | <i>RNU6-1028P</i> | (Cichon et al., 2011), (McMahon and Detera-Wadleigh, 2020) |
| | X | | | | <i>RNU6-131P</i> | (Stahl et al., 2019) |
| | | | | X | <i>ROBO2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>RORA</i> | (Abrahams et al., 2013) |
| | | | | X | <i>RORB</i> | (Abrahams et al., 2013) |
| | | | | X | <i>RPS10P2-AS1</i> | (Abrahams et al., 2013) |
| | X | | | | <i>RPS6KA2</i> | (Kerner et al., 2011) |
| X | | | | | <i>RPTOR</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>RSRC1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SAE1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SATB1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SBF1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SCAF4</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SCN1A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SCN2A</i> | (Abrahams et al., 2013) |
| | X | | | | <i>SCN2A</i> | (Stahl et al., 2019) |
| | | | | X | <i>SCN8A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SCN9A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SEMA5A</i> | (Abrahams et al., 2013) |
| | | | X | | <i>SEMA6D</i> | (Demontis et al., 2019) |

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|---|---|---|---|---|-----------------|--|
| X | | | | | <i>SERPING1</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>SET</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SETBP1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SETD1A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SETD2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SETD5</i> | (Abrahams et al., 2013) |
| X | | | | | <i>SF3B1</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>SGSH</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SHANK1</i> | (Abrahams et al., 2013) |
| X | X | | | X | <i>SHANK2</i> | (Abrahams et al., 2013), (Yoshikawa et al., 2021) |
| | | | | X | <i>SHANK3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SHOX</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SIK1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SIN3A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SKI</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SLC12A5</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SLC1A2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SLC35B1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SLC38A10</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SLC45A1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SLC6A1</i> | (Abrahams et al., 2013) |
| | | X | | | <i>SLC6A2</i> | (Lohoff, 2010) |
| | | X | X | X | <i>SLC6A3</i> | (Abrahams et al., 2013) |
| | X | X | X | | <i>SLC6A4</i> | (Escamilla and Zavala, 2008) |
| | | | X | | <i>SLC6A9</i> | (Demontis et al., 2019) |
| | | | | X | <i>SLC7A3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SLC7A5</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SLC9A6</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SLITRK5</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SMAD4</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SMARCA2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SMARCA4</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SMARCC2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SMC1A</i> | (Abrahams et al., 2013) |
| | X | | | | <i>SMNDC1</i> | (Charney et al., 2017), (McMahon and Detera-Wadleigh, 2020) |
| | | | X | | <i>SNAP25</i> | (Mill et al., 2005) |

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|---|---|--|---|---|------------------|--|
| X | | | | | <i>SNAP91</i> | (Christensen and Børglum, 2019) |
| | | | | X | <i>SNX14</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SNX5</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SON</i> | (Abrahams et al., 2013) |
| | X | | | | <i>SORCS1</i> | (Charney et al., 2017), (McMahon and Detera-Wadleigh, 2020) |
| | | | X | X | <i>SORCS3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SOX5</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SOX6</i> | (Abrahams et al., 2013) |
| | | | X | | <i>SPAG16</i> | (Demontis et al., 2019) |
| | | | | X | <i>SPARCL1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SPAST</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SPEN</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SRCAP</i> | (Abrahams et al., 2013) |
| X | | | | | <i>SREBF1</i> | (Schmidt-Kastner et al., 2020) |
| X | | | | | <i>SRPK2</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>SRPRA</i> | (Abrahams et al., 2013) |
| X | | | | | <i>SRR</i> | (Balu et al., 2013) |
| | | | | X | <i>SRSF11</i> | (Abrahams et al., 2013) |
| | | | X | | <i>ST3GAL3</i> | (Demontis et al., 2019) |
| | | | | X | <i>ST8SIA2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>STAG1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>STXBP1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>STXBP5</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SUPT16H</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SYN1</i> | (Abrahams et al., 2013) |
| X | | | | | <i>Syn3</i> | (Chen et al., 2009) |
| | X | | | | <i>SYNE1</i> | (McMahon and Detera-Wadleigh, 2020) |
| | X | | | | <i>SYNE1-AS1</i> | (McMahon and Detera-Wadleigh, 2020) |
| | | | | X | <i>SYNGAP1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>SYT1</i> | (Abrahams et al., 2013) |
| | | | X | | <i>SYT2</i> | (Hayman and Fernandez, 2018) |
| | | | | X | <i>TAF1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TAF6</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TANC2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TAOK1</i> | (Abrahams et al., 2013) |

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|---|---|---|---|---|-----------------|--|
| | | | | X | <i>TAOK2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TBC1D23</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TBC1D31</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TBCK</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TBL1XR1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TBR1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TBX1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TCF20</i> | (Abrahams et al., 2013) |
| X | | | | X | <i>TCF4</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TCF7L2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TEK</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TERF2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TET2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TET3</i> | (Abrahams et al., 2013) |
| | | X | | | <i>TH</i> | (Shadrina et al., 2018) |
| | X | | | | <i>THSD7A</i> | (Stahl et al., 2019) |
| | | | | X | <i>TLK2</i> | (Abrahams et al., 2013) |
| | X | | | | <i>TLR9</i> | (Chen et al., 2013), (McMahon and Detera-Wadleigh, 2020) |
| | | | | X | <i>TM4SF20</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TM9SF4</i> | (Abrahams et al., 2013) |
| | X | | | | <i>TMEM151A</i> | (Stahl et al., 2019) |
| | | | | X | <i>TMLHE</i> | (Abrahams et al., 2013) |
| | X | | | | <i>TMUB2</i> | (Stahl et al., 2019) |
| | | | | X | <i>TNRC6B</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TOR3A</i> | (LeDoux, 2012) |
| | | X | X | | <i>TPH1</i> | (Palladino et al., 2019) |
| | | X | X | | <i>TPH2</i> | (Palladino et al., 2019) |
| | | | | X | <i>TRAF7</i> | (Abrahams et al., 2013) |
| | X | | | | <i>TRANK1</i> | (Chen et al., 2013), (McMahon and Detera-Wadleigh, 2020) |
| | | | | X | <i>TRAPPC6B</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TRAPPC9</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TRIM23</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TRIO</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TRIP12</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TRPC6</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TRPM1</i> | (Abrahams et al., 2013) |

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|---|---|--|--|---|----------------|---------------------------------|
| | | | | X | <i>TSC1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TSC2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>TSHZ3</i> | (Abrahams et al., 2013) |
| X | | | | | <i>TSNARE1</i> | (Christensen and Børglum, 2019) |
| | | | | X | <i>TTI2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>UBE3A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>UBE3C</i> | (Abrahams et al., 2013) |
| | | | | X | <i>UBN2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>UBR1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>UBR5</i> | (Abrahams et al., 2013) |
| | | | | X | <i>UNC79</i> | (Abrahams et al., 2013) |
| | | | | X | <i>UPF3B</i> | (Abrahams et al., 2013) |
| | | | | X | <i>USP15</i> | (Abrahams et al., 2013) |
| | | | | X | <i>USP45</i> | (Abrahams et al., 2013) |
| | | | | X | <i>USP7</i> | (Abrahams et al., 2013) |
| | | | | X | <i>USP9X</i> | (Abrahams et al., 2013) |
| | | | | X | <i>VAMP2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>VEZF1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>VIL1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>VPS13B</i> | (Abrahams et al., 2013) |
| | | | | X | <i>WAC</i> | (Abrahams et al., 2013) |
| | | | | X | <i>WASF1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>WDFY3</i> | (Abrahams et al., 2013) |
| | | | | X | <i>WDFY4</i> | (Abrahams et al., 2013) |
| | | | | X | <i>WDR26</i> | (Abrahams et al., 2013) |
| | | | | X | <i>WFDC5</i> | (Stahl et al., 2019) |
| | | | | X | <i>WWOX</i> | (Abrahams et al., 2013) |
| | | | | X | <i>XPC</i> | (Abrahams et al., 2013) |
| | | | | X | <i>YY1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ZBTB20</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ZC3H4</i> | (Abrahams et al., 2013) |
| | X | | | | <i>ZCCHC2</i> | (Stahl et al., 2019) |
| X | | | | | <i>ZEB2</i> | (Schmidt-Kastner et al., 2020) |
| | | | | X | <i>ZMIZ1</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ZMYM2</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ZMYND11</i> | (Abrahams et al., 2013) |

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|---|--|--|--|---|----------------|-------------------------|
| | | | | X | <i>ZMYND8</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ZNF292</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ZNF462</i> | (Abrahams et al., 2013) |
| X | | | | X | <i>ZNF804A</i> | (Abrahams et al., 2013) |
| | | | | X | <i>ZSWIM6</i> | (Abrahams et al., 2013) |