

Table S2. Ion channel genes involved in this study

Gene symbol	Gene title	Channel type
<i>ANO1</i>	anoctamin 1, Calcium activated chloride channel	Calcium activated chloride channel
<i>ANO2</i>	anoctamin 2	Calcium activated chloride channel
<i>CACNA1A</i>	calcium channel, voltage-dependent, P/Q type, alpha 1A subunit	Voltage-gated calcium channels
<i>CACNA1B</i>	calcium channel, voltage-dependent, N type, alpha 1B subunit	Voltage-gated calcium channels
<i>CACNA1C</i>	calcium channel, voltage-dependent, L type, alpha 1C subunit	Voltage-gated calcium channels
<i>CACNA1D</i>	calcium channel, voltage-dependent, L type, alpha 1D subunit	Voltage-gated calcium channels
<i>CACNA1E</i>	calcium channel, voltage-dependent, R type, alpha 1E subunit	Voltage-gated calcium channels
<i>CACNA1F</i>	calcium channel, voltage-dependent, L type, alpha 1F subunit	Voltage-gated calcium channels
<i>CACNA1G</i>	calcium channel, voltage-dependent, T type, alpha 1G subunit	Voltage-gated calcium channels
<i>CACNA1H</i>	calcium channel, voltage-dependent, T type, alpha 1H subunit	Voltage-gated calcium channels
<i>CACNA1I</i>	calcium channel, voltage-dependent, T type, alpha 1I subunit	Voltage-gated calcium channels
<i>CACNA1S</i>	calcium channel, voltage-dependent, L type, alpha 1S subunit	Voltage-gated calcium channels
<i>CACNA2D1</i>	calcium channel, voltage-dependent, alpha 2/delta subunit 1	Voltage-gated calcium channels
<i>CACNA2D2</i>	calcium channel, voltage-dependent, alpha 2/delta subunit 2	Voltage-gated calcium channels
<i>CACNA2D3</i>	calcium channel, voltage-dependent, alpha 2/delta subunit 3	Voltage-gated calcium channels
<i>CACNA2D4</i>	calcium channel, voltage-dependent, alpha 2/delta subunit 4	Voltage-gated calcium channels
<i>CACNB1</i>	calcium channel, voltage-dependent, beta 1 subunit	Voltage-gated calcium channels
<i>CACNB2</i>	calcium channel, voltage-dependent, beta 2 subunit	Voltage-gated calcium channels
<i>CACNB3</i>	calcium channel, voltage-dependent, beta 3 subunit	Voltage-gated calcium channels
<i>CACNB4</i>	calcium channel, voltage-dependent, beta 4 subunit	Voltage-gated calcium channels
<i>CACNG1</i>	calcium channel, voltage-dependent, gamma subunit 1	Voltage-gated calcium channels
<i>CACNG2</i>	calcium channel, voltage-dependent, gamma subunit 2	Voltage-gated calcium channels
<i>CACNG3</i>	calcium channel, voltage-dependent, gamma subunit 3	Voltage-gated calcium channels
<i>CACNG4</i>	calcium channel, voltage-dependent, gamma subunit 4	Voltage-gated calcium channels
<i>CACNG5</i>	calcium channel, voltage-dependent, gamma subunit 5	Voltage-gated calcium channels
<i>CACNG6</i>	calcium channel, voltage-dependent, gamma subunit 6	Voltage-gated calcium channels
<i>CACNG7</i>	calcium channel, voltage-dependent, gamma subunit 7	Voltage-gated calcium channels
<i>CACNG8</i>	calcium channel, voltage-dependent, gamma subunit 8	Voltage-gated calcium channels
<i>CATSPER1</i>	cation channel, sperm associated 1	CatSper and Two-Pore channels
<i>CATSPER2</i>	cation channel, sperm associated 2	CatSper and Two-Pore channels
<i>CATSPER3</i>	cation channel, sperm associated 3	CatSper and Two-Pore channels
<i>CATSPER4</i>	cation channel, sperm associated 4	CatSper and Two-Pore channels
<i>CATSPERB</i>	catsper channel auxiliary subunit beta	CatSper and Two-Pore channels
<i>CATSPERD</i>	catsper channel auxiliary subunit delta	CatSper and Two-Pore channels
<i>CATSPERG</i>	catsper channel auxiliary subunit gamma	CatSper and Two-Pore channels
<i>CHRNA1</i>	cholinergic receptor, nicotinic, alpha 1 (muscle)	Nicotinic acetylcholine receptors
<i>CHRNA10</i>	cholinergic receptor, nicotinic, alpha 10 (neuronal)	Nicotinic acetylcholine receptors
<i>CHRNA2</i>	cholinergic receptor, nicotinic, alpha 2 (neuronal)	Nicotinic acetylcholine receptors
<i>CHRNA3</i>	cholinergic receptor, nicotinic, alpha 3 (neuronal)	Nicotinic acetylcholine receptors

Gene symbol	Gene title	Channel type
<i>CHRNA4</i>	cholinergic receptor, nicotinic, alpha 4 (neuronal)	Nicotinic acetylcholine receptors
<i>CHRNA5</i>	cholinergic receptor, nicotinic, alpha 5 (neuronal)	Nicotinic acetylcholine receptors
<i>CHRNA6</i>	cholinergic receptor, nicotinic, alpha 6 (neuronal)	Nicotinic acetylcholine receptors
<i>CHRNA7</i>	cholinergic receptor, nicotinic, alpha 7 (neuronal)	Nicotinic acetylcholine receptors
<i>CHRNA9</i>	cholinergic receptor, nicotinic, alpha 9 (neuronal)	Nicotinic acetylcholine receptors
<i>CHRNB1</i>	cholinergic receptor, nicotinic, beta 1 (muscle)	Nicotinic acetylcholine receptors
<i>CHRNB2</i>	cholinergic receptor, nicotinic, beta 2 (neuronal)	Nicotinic acetylcholine receptors
<i>CHRNB3</i>	cholinergic receptor, nicotinic, beta 3 (neuronal)	Nicotinic acetylcholine receptors
<i>CHRNB4</i>	cholinergic receptor, nicotinic, beta 4 (neuronal)	Nicotinic acetylcholine receptors
<i>CHRND</i>	cholinergic receptor, nicotinic, delta (muscle)	Nicotinic acetylcholine receptors
<i>CHRNE</i>	cholinergic receptor, nicotinic, epsilon (muscle)	Nicotinic acetylcholine receptors
<i>CHRNG</i>	cholinergic receptor, nicotinic, gamma (muscle)	Nicotinic acetylcholine receptors
<i>CLCA1</i>	chloride channel accessory 1	Calcium activated chloride channel
<i>CLCA2</i>	chloride channel accessory 2	Calcium activated chloride channel
<i>CLCA3</i>	chloride channel accessory 3	Calcium activated chloride channel
<i>CLCC1</i>	chloride channel CLIC-like 1	Mid-1-related chloride channel
<i>CLCN1</i>	chloride channel, voltage-sensitive 1	Voltage-sensitive chloride channel
<i>CLCN2</i>	chloride channel, voltage-sensitive 2	Voltage-sensitive chloride channel
<i>CLCN3</i>	chloride channel, voltage-sensitive 3	Voltage-sensitive chloride channel
<i>CLCN4</i>	chloride channel, voltage-sensitive 4	Voltage-sensitive chloride channel
<i>CLCN5</i>	chloride channel, voltage-sensitive 5	Voltage-sensitive chloride channel
<i>CLCN6</i>	chloride channel, voltage-sensitive 6	Voltage-sensitive chloride channel
<i>CLCN7</i>	chloride channel, voltage-sensitive 7	Voltage-sensitive chloride channel
<i>CLCNKA</i>	chloride channel, voltage-sensitive Ka	Voltage-sensitive chloride channel
<i>CLCNKB</i>	chloride channel, voltage-sensitive Kb	Voltage-sensitive chloride channel
<i>CLIC1</i>	chloride intracellular channel 1	Chloride intracellular channel
<i>CLIC2</i>	chloride intracellular channel 2	Chloride intracellular channel
<i>CLIC3</i>	chloride intracellular channel 3	Chloride intracellular channel
<i>CLIC4</i>	chloride intracellular channel 4	Chloride intracellular channel
<i>CLIC5</i>	chloride intracellular channel 5	Chloride intracellular channel
<i>CLIC6</i>	chloride intracellular channel 6	Chloride intracellular channel
<i>CNGA1</i>	cyclic nucleotide gated channel alpha 1	Cyclic nucleotide-regulated channels
<i>CNGA2</i>	cyclic nucleotide gated channel alpha 2	Cyclic nucleotide-regulated channels
<i>CNGA3</i>	cyclic nucleotide gated channel alpha 3	Cyclic nucleotide-regulated channels
<i>CNGA4</i>	cyclic nucleotide gated channel alpha 4	Cyclic nucleotide-regulated channels
<i>CNGB1</i>	cyclic nucleotide gated channel beta 1	Cyclic nucleotide-regulated channels
<i>CNGB3</i>	cyclic nucleotide gated channel beta 3	Cyclic nucleotide-regulated channels
<i>GABARAP</i>	GABA(A) receptor-associated protein	GABA _A receptors
<i>GABRA1</i>	gamma-aminobutyric acid (GABA) A receptor, alpha 1	GABA _A receptors
<i>GABRA2</i>	gamma-aminobutyric acid (GABA) A receptor, alpha 2	GABA _A receptors
<i>GABRA3</i>	gamma-aminobutyric acid (GABA) A receptor, alpha 3	GABA _A receptors
<i>GABRA4</i>	gamma-aminobutyric acid (GABA) A receptor, alpha 4	GABA _A receptors
<i>GABRA5</i>	gamma-aminobutyric acid (GABA) A receptor, alpha 5	GABA _A receptors
<i>GABRA6</i>	gamma-aminobutyric acid (GABA) A receptor, alpha 6	GABA _A receptors

Gene symbol	Gene title	Channel type
<i>GABRB1</i>	gamma-aminobutyric acid (GABA) A receptor, beta 1	GABA _A receptors
<i>GABRB2</i>	gamma-aminobutyric acid (GABA) A receptor, beta 2	GABA _A receptors
<i>GABRB3</i>	gamma-aminobutyric acid (GABA) A receptor, beta 3	GABA _A receptors
<i>GABRD</i>	gamma-aminobutyric acid (GABA) A receptor, delta	GABA _A receptors
<i>GABRE</i>	gamma-aminobutyric acid (GABA) A receptor, epsilon	GABA _A receptors
<i>GABRG1</i>	gamma-aminobutyric acid (GABA) A receptor, gamma 1	GABA _A receptors
<i>GABRG2</i>	gamma-aminobutyric acid (GABA) A receptor, gamma 2	GABA _A receptors
<i>GABRG3</i>	gamma-aminobutyric acid (GABA) A receptor, gamma 3	GABA _A receptors
<i>GABRP</i>	gamma-aminobutyric acid (GABA) A receptor, pi	GABA _A receptors
<i>GABRQ</i>	gamma-aminobutyric acid (GABA) A receptor, theta	GABA _A receptors
<i>GABRR1</i>	gamma-aminobutyric acid (GABA) A receptor, rho 1	GABA _A receptors
<i>GABRR2</i>	gamma-aminobutyric acid (GABA) A receptor, rho 2	GABA _A receptors
<i>GABRR3</i>	gamma-aminobutyric acid (GABA) A receptor, rho 3	GABA _A receptors
<i>GLRA1</i>	glycine receptor, alpha 1	Glycine receptors
<i>GLRA2</i>	glycine receptor, alpha 2	Glycine receptors
<i>GLRA3</i>	glycine receptor, alpha 3	Glycine receptors
<i>GLRA4</i>	glycine receptor, alpha 4	Glycine receptors
<i>GLRB</i>	glycine receptor, beta	Glycine receptors
<i>GRIA1</i>	glutamate receptor, ionotropic, AMPA 1	Ionotropic glutamate receptors
<i>GRIA2</i>	glutamate receptor, ionotropic, AMPA 2	Ionotropic glutamate receptors
<i>GRIA3</i>	glutamate receptor, ionotropic, AMPA 3	Ionotropic glutamate receptors
<i>GRIA4</i>	glutamate receptor, ionotropic, AMPA 4	Ionotropic glutamate receptors
<i>GRID1</i>	glutamate receptor, ionotropic, delta 1	Ionotropic glutamate receptors
<i>GRID2</i>	glutamate receptor, ionotropic, delta 2	Ionotropic glutamate receptors
<i>GRIK1</i>	glutamate receptor, ionotropic, kainate 1	Ionotropic glutamate receptors
<i>GRIK2</i>	glutamate receptor, ionotropic, kainate 2	Ionotropic glutamate receptors
<i>GRIK3</i>	glutamate receptor, ionotropic, kainate 3	Ionotropic glutamate receptors
<i>GRIK4</i>	glutamate receptor, ionotropic, kainate 4	Ionotropic glutamate receptors
<i>GRIK5</i>	glutamate receptor, ionotropic, kainate 5	Ionotropic glutamate receptors
<i>GRIN1</i>	glutamate receptor, ionotropic, N-methyl D-aspartate 1	Ionotropic glutamate receptors
<i>GRIN2A</i>	glutamate receptor, ionotropic, N-methyl D-aspartate 2A	Ionotropic glutamate receptors
<i>GRIN2B</i>	glutamate receptor, ionotropic, N-methyl D-aspartate 2B	Ionotropic glutamate receptors
<i>GRIN2C</i>	glutamate receptor, ionotropic, N-methyl D-aspartate 2C	Ionotropic glutamate receptors
<i>GRIN2D</i>	glutamate receptor, ionotropic, N-methyl D-aspartate 2D	Ionotropic glutamate receptors
<i>GRIN3A</i>	glutamate receptor, ionotropic, N-methyl-D-aspartate 3A	Ionotropic glutamate receptors
<i>GRIN3B</i>	glutamate receptor, ionotropic, N-methyl-D-aspartate 3B	Ionotropic glutamate receptors
<i>HCN1</i>	hyperpolarization activated cyclic nucleotide-gated potassium channel 1	Cyclic nucleotide-regulated channels
<i>HCN2</i>	hyperpolarization activated cyclic nucleotide-gated potassium channel 2	Cyclic nucleotide-regulated channels
<i>HCN3</i>	hyperpolarization activated cyclic nucleotide-gated potassium channel 3	Cyclic nucleotide-regulated channels
<i>HCN4</i>	hyperpolarization activated cyclic nucleotide-gated potassium channel 4	Cyclic nucleotide-regulated channels
<i>HTR3A</i>	5-hydroxytryptamine (serotonin) receptor 3A, ionotropic	5-HT ₃ receptors
<i>HTR3B</i>	5-hydroxytryptamine (serotonin) receptor 3B, ionotropic	5-HT ₃ receptors
<i>HTR3C</i>	5-hydroxytryptamine (serotonin) receptor 3C, ionotropic	5-HT ₃ receptors
<i>HTR3D</i>	5-hydroxytryptamine (serotonin) receptor 3D, ionotropic	5-HT ₃ receptors
<i>HTR3E</i>	5-hydroxytryptamine (serotonin) receptor 3E, ionotropic	5-HT ₃ receptors
<i>HVCN1</i>	hydrogen voltage-gated channel 1	Voltage-gated proton channel

Gene symbol	Gene title	Channel type
<i>KCNA1</i>	potassium voltage-gated channel, shaker-related subfamily, member 1 (episodic ataxia with myokymia)	Voltage-gated potassium channels
<i>KCNA10</i>	potassium voltage-gated channel, shaker-related subfamily, member 10	Voltage-gated potassium channels
<i>KCNA2</i>	potassium voltage-gated channel, shaker-related subfamily, member 2	Voltage-gated potassium channels
<i>KCNA3</i>	potassium voltage-gated channel, shaker-related subfamily, member 3	Voltage-gated potassium channels
<i>KCNA4</i>	potassium voltage-gated channel, shaker-related subfamily, member 4	Voltage-gated potassium channels
<i>KCNA5</i>	potassium voltage-gated channel, shaker-related subfamily, member 5	Voltage-gated potassium channels
<i>KCNA6</i>	potassium voltage-gated channel, shaker-related subfamily, member 6	Voltage-gated potassium channels
<i>KCNA7</i>	potassium voltage-gated channel, shaker-related subfamily, member 7	Voltage-gated potassium channels
<i>KCNAB1</i>	potassium voltage-gated channel, shaker-related subfamily, beta member 1	Voltage-gated potassium channels
<i>KCNAB2</i>	potassium voltage-gated channel, shaker-related subfamily, beta member 2	Voltage-gated potassium channels
<i>KCNAB3</i>	potassium voltage-gated channel, shaker-related subfamily, beta member 3	Voltage-gated potassium channels
<i>KCNB1</i>	potassium voltage-gated channel, Shab-related subfamily, member 1	Voltage-gated potassium channels
<i>KCNB2</i>	potassium voltage-gated channel, Shab-related subfamily, member 2	Voltage-gated potassium channels
<i>KCNC1</i>	potassium voltage-gated channel, Shaw-related subfamily, member 1	Voltage-gated potassium channels
<i>KCNC2</i>	potassium voltage-gated channel, Shaw-related subfamily, member 2	Voltage-gated potassium channels
<i>KCNC3</i>	potassium voltage-gated channel, Shaw-related subfamily, member 3	Voltage-gated potassium channels
<i>KCNC4</i>	potassium voltage-gated channel, Shaw-related subfamily, member 4	Voltage-gated potassium channels
<i>KCND1</i>	potassium voltage-gated channel, Shal-related subfamily, member 1	Voltage-gated potassium channels
<i>KCND2</i>	potassium voltage-gated channel, Shal-related subfamily, member 2	Voltage-gated potassium channels
<i>KCND3</i>	potassium voltage-gated channel, Shal-related subfamily, member 3	Voltage-gated potassium channels
<i>KCNE1</i>	potassium voltage-gated channel, Isk-related family, member 1	Voltage-gated potassium channels
<i>KCNE1L</i>	KCNE1-like	Voltage-gated potassium channels
<i>KCNE2</i>	potassium voltage-gated channel, Isk-related family, member 2	Voltage-gated potassium channels
<i>KCNE3</i>	potassium voltage-gated channel, Isk-related family, member 3	Voltage-gated potassium channels
<i>KCNE4</i>	potassium voltage-gated channel, Isk-related family, member 4	Voltage-gated potassium channels
<i>KCNF1</i>	potassium voltage-gated channel, subfamily F, member 1	Voltage-gated potassium channels
<i>KCNG1</i>	potassium voltage-gated channel, subfamily G, member 1	Voltage-gated potassium channels
<i>KCNG2</i>	potassium voltage-gated channel, subfamily G, member 2	Voltage-gated potassium channels
<i>KCNG3</i>	potassium voltage-gated channel, subfamily G, member 3	Voltage-gated potassium channels
<i>KCNG4</i>	potassium voltage-gated channel, subfamily G, member 4	Voltage-gated potassium channels

Gene symbol	Gene title	Channel type
<i>KCNH1</i>	potassium voltage-gated channel, subfamily H (eag-related), member 1	Voltage-gated potassium channels
<i>KCNH2</i>	potassium voltage-gated channel, subfamily H (eag-related), member 2	Voltage-gated potassium channels
<i>KCNH3</i>	potassium voltage-gated channel, subfamily H (eag-related), member 3	Voltage-gated potassium channels
<i>KCNH4</i>	potassium voltage-gated channel, subfamily H (eag-related), member 4	Voltage-gated potassium channels
<i>KCNH5</i>	potassium voltage-gated channel, subfamily H (eag-related), member 5	Voltage-gated potassium channels
<i>KCNH6</i>	potassium voltage-gated channel, subfamily H (eag-related), member 6	Voltage-gated potassium channels
<i>KCNH7</i>	potassium voltage-gated channel, subfamily H (eag-related), member 7	Voltage-gated potassium channels
<i>KCNH8</i>	potassium voltage-gated channel, subfamily H (eag-related), member 8	Voltage-gated potassium channels
<i>KCNJ1</i>	potassium inwardly-rectifying channel, subfamily J, member 1	Inwardly rectifying potassium channels
<i>KCNJ10</i>	potassium inwardly-rectifying channel, subfamily J, member 10	Inwardly rectifying potassium channels
<i>KCNJ11</i>	potassium inwardly-rectifying channel, subfamily J, member 11	Inwardly rectifying potassium channels
<i>KCNJ12</i>	potassium inwardly-rectifying channel, subfamily J, member 12	Inwardly rectifying potassium channels
<i>KCNJ13</i>	potassium inwardly-rectifying channel, subfamily J, member 13	Inwardly rectifying potassium channels
<i>KCNJ14</i>	potassium inwardly-rectifying channel, subfamily J, member 14	Inwardly rectifying potassium channels
<i>KCNJ15</i>	potassium inwardly-rectifying channel, subfamily J, member 15	Inwardly rectifying potassium channels
<i>KCNJ16</i>	potassium inwardly-rectifying channel, subfamily J, member 16	Inwardly rectifying potassium channels
<i>KCNJ18</i>	potassium inwardly-rectifying channel, subfamily J, member 18	Inwardly rectifying potassium channels
<i>KCNJ2</i>	potassium inwardly-rectifying channel, subfamily J, member 2	Inwardly rectifying potassium channels
<i>KCNJ3</i>	potassium inwardly-rectifying channel, subfamily J, member 3	Inwardly rectifying potassium channels
<i>KCNJ4</i>	potassium inwardly-rectifying channel, subfamily J, member 4	Inwardly rectifying potassium channels
<i>KCNJ5</i>	potassium inwardly-rectifying channel, subfamily J, member 5	Inwardly rectifying potassium channels
<i>KCNJ6</i>	potassium inwardly-rectifying channel, subfamily J, member 6	Inwardly rectifying potassium channels
<i>KCNJ8</i>	potassium inwardly-rectifying channel, subfamily J, member 8	Inwardly rectifying potassium channels
<i>KCNJ9</i>	potassium inwardly-rectifying channel, subfamily J, member 9	Inwardly rectifying potassium channels
<i>KCNK1</i>	potassium channel, subfamily K, member 1	Two-P potassium channels
<i>KCNK10</i>	potassium channel, subfamily K, member 10	Two-P potassium channels
<i>KCNK12</i>	potassium channel, subfamily K, member 12	Two-P potassium channels
<i>KCNK13</i>	potassium channel, subfamily K, member 13	Two-P potassium channels
<i>KCNK15</i>	potassium channel, subfamily K, member 15	Two-P potassium channels
<i>KCNK16</i>	potassium channel, subfamily K, member 16	Two-P potassium channels

Gene symbol	Gene title	Channel type
<i>KCNK17</i>	potassium channel, subfamily K, member 17	Two-P potassium channels
<i>KCNK18</i>	potassium channel, subfamily K, member 18	Two-P potassium channels
<i>KCNK2</i>	potassium channel, subfamily K, member 2	Two-P potassium channels
<i>KCNK3</i>	potassium channel, subfamily K, member 3	Two-P potassium channels
<i>KCNK4</i>	potassium channel, subfamily K, member 4	Two-P potassium channels
<i>KCNK5</i>	potassium channel, subfamily K, member 5	Two-P potassium channels
<i>KCNK6</i>	potassium channel, subfamily K, member 6	Two-P potassium channels
<i>KCNK7</i>	potassium channel, subfamily K, member 7	Two-P potassium channels
<i>KCNK9</i>	potassium channel, subfamily K, member 9	Two-P potassium channels
<i>KCNMA1</i>	potassium large conductance calcium-activated channel, subfamily M, alpha member 1	Calcium-activated potassium channels
<i>KCNMB1</i>	potassium large conductance calcium-activated channel, subfamily M, beta member 1	Calcium-activated potassium channels
<i>KCNMB2</i>	potassium large conductance calcium-activated channel, subfamily M, beta member 2	Calcium-activated potassium channels
<i>KCNMB3</i>	potassium large conductance calcium-activated channel, subfamily M beta member 3	Calcium-activated potassium channels
<i>KCNMB4</i>	potassium large conductance calcium-activated channel, subfamily M, beta member 4	Calcium-activated potassium channels
<i>KCNN1</i>	potassium intermediate/small conductance calcium-activated channel, subfamily N, member 1	Calcium-activated potassium channels
<i>KCNN2</i>	potassium intermediate/small conductance calcium-activated channel, subfamily N, member 2	Calcium-activated potassium channels
<i>KCNN3</i>	potassium intermediate/small conductance calcium-activated channel, subfamily N, member 3	Calcium-activated potassium channels
<i>KCNN4</i>	potassium intermediate/small conductance calcium-activated channel, subfamily N, member 4	Calcium-activated potassium channels
<i>KCNQ1</i>	potassium voltage-gated channel, KQT-like subfamily, member 1	Voltage-gated potassium channels
<i>KCNQ2</i>	potassium voltage-gated channel, KQT-like subfamily, member 2	Voltage-gated potassium channels
<i>KCNQ3</i>	potassium voltage-gated channel, KQT-like subfamily, member 3	Voltage-gated potassium channels
<i>KCNQ4</i>	potassium voltage-gated channel, KQT-like subfamily, member 4	Voltage-gated potassium channels
<i>KCNQ5</i>	potassium voltage-gated channel, KQT-like subfamily, member 5	Voltage-gated potassium channels
<i>KCNS1</i>	potassium voltage-gated channel, delayed-rectifier, subfamily S, member 1	Voltage-gated potassium channels
<i>KCNS2</i>	potassium voltage-gated channel, delayed-rectifier, subfamily S, member 2	Voltage-gated potassium channels
<i>KCNS3</i>	potassium voltage-gated channel, delayed-rectifier, subfamily S, member 3	Voltage-gated potassium channels
<i>KCNT1</i>	potassium channel, subfamily T, member 1	Calcium-activated potassium channels
<i>KCNT2</i>	potassium channel, subfamily T, member 2	Calcium-activated potassium channels
<i>KCNU1</i>	potassium channel, subfamily U, member 1	Calcium-activated potassium channels
<i>KCNV1</i>	potassium channel, subfamily V, member 1	Voltage-gated potassium channels
<i>KCNV2</i>	potassium channel, subfamily V, member 2	Voltage-gated potassium channels
<i>MCOLN1</i>	mucolipin 1	Transient receptor potential channels

Gene symbol	Gene title	Channel type
<i>MCOLN2</i>	mucolipin 2	Transient receptor potential channels
<i>MCOLN3</i>	mucolipin 3	Transient receptor potential channels
<i>NALCN</i>	sodium leak channel, non-selective	Voltage-independent cation channel
<i>P2RX1</i>	purinergic receptor P2X, ligand-gated ion channel, 1	P2X receptors
<i>P2RX2</i>	purinergic receptor P2X, ligand-gated ion channel, 2	P2X receptors
<i>P2RX3</i>	purinergic receptor P2X, ligand-gated ion channel, 3	P2X receptors
<i>P2RX4</i>	purinergic receptor P2X, ligand-gated ion channel, 4	P2X receptors
<i>P2RX5</i>	purinergic receptor P2X, ligand-gated ion channel, 5	P2X receptors
<i>P2RX6</i>	purinergic receptor P2X, ligand-gated ion channel, 6	P2X receptors
<i>P2RX7</i>	purinergic receptor P2X, ligand-gated ion channel, 7	P2X receptors
<i>PKD1</i>	polycystic kidney disease 1 (autosomal dominant)	Transient receptor potential channels
<i>PKD2</i>	polycystic kidney disease 2 (autosomal dominant)	Transient receptor potential channels
<i>PKD2L1</i>	polycystic kidney disease 2-like 1	Transient receptor potential channels
<i>PKD2L2</i>	polycystic kidney disease 2-like 2	Transient receptor potential channels
<i>SCN10A</i>	sodium channel, voltage-gated, type X, alpha subunit	Voltage-gated sodium channels
<i>SCN11A</i>	sodium channel, voltage-gated, type XI, alpha subunit	Voltage-gated sodium channels
<i>SCN1A</i>	sodium channel, voltage-gated, type I, alpha subunit	Voltage-gated sodium channels
<i>SCN1B</i>	sodium channel, voltage-gated, type I, beta subunit	Voltage-gated sodium channels
<i>SCN2A</i>	sodium channel, voltage-gated, type II, alpha subunit	Voltage-gated sodium channels
<i>SCN2B</i>	sodium channel, voltage-gated, type II, beta subunit	Voltage-gated sodium channels
<i>SCN3A</i>	sodium channel, voltage-gated, type III, alpha subunit	Voltage-gated sodium channels
<i>SCN3B</i>	sodium channel, voltage-gated, type III, beta subunit	Voltage-gated sodium channels
<i>SCN4A</i>	sodium channel, voltage-gated, type IV, alpha subunit	Voltage-gated sodium channels
<i>SCN4B</i>	sodium channel, voltage-gated, type IV, beta subunit	Voltage-gated sodium channels
<i>SCN5A</i>	sodium channel, voltage-gated, type V, alpha subunit	Voltage-gated sodium channels
<i>SCN7A</i>	sodium channel, voltage-gated, type VII, alpha subunit	Voltage-gated sodium channels
<i>SCN8A</i>	sodium channel, voltage gated, type VIII, alpha subunit	Voltage-gated sodium channels
<i>SCN9A</i>	sodium channel, voltage-gated, type IX, alpha subunit	Voltage-gated sodium channels
<i>SCNN1A</i>	sodium channel, non-voltage-gated 1 alpha subunit	Nonvoltage-gated sodium channels
<i>SCNN1B</i>	sodium channel, non-voltage-gated 1, beta subunit	Nonvoltage-gated sodium channels
<i>SCNN1D</i>	sodium channel, non-voltage-gated 1, delta subunit	Nonvoltage-gated sodium channels
<i>SCNN1G</i>	sodium channel, non-voltage-gated 1, gamma subunit	Nonvoltage-gated sodium channels
<i>TPCN1</i>	two pore segment channel 1	CatSper and two-pore channels
<i>TPCN2</i>	two pore segment channel 2	CatSper and two-pore channels
<i>TRPA1</i>	transient receptor potential cation channel, subfamily A, member 1	Transient receptor potential channels
<i>TRPC1</i>	transient receptor potential cation channel, subfamily C, member 1	Transient receptor potential channels
<i>TRPC3</i>	transient receptor potential cation channel, subfamily C, member 3	Transient receptor potential channels
<i>TRPC4</i>	transient receptor potential cation channel, subfamily C, member 4	Transient receptor potential channels
<i>TRPC5</i>	transient receptor potential cation channel, subfamily C, member 5	Transient receptor potential channels
<i>TRPC6</i>	transient receptor potential cation channel, subfamily C,	Transient receptor potential

Gene symbol	Gene title	Channel type
	member 6	channels
<i>TRPC7</i>	transient receptor potential cation channel, subfamily C, member 7	Transient receptor potential channels
<i>TRPM1</i>	transient receptor potential cation channel, subfamily M, member 1	Transient receptor potential channels
<i>TRPM2</i>	transient receptor potential cation channel, subfamily M, member 2	Transient receptor potential channels
<i>TRPM3</i>	transient receptor potential cation channel, subfamily M, member 3	Transient receptor potential channels
<i>TRPM4</i>	transient receptor potential cation channel, subfamily M, member 4	Transient receptor potential channels
<i>TRPM5</i>	transient receptor potential cation channel, subfamily M, member 5	Transient receptor potential channels
<i>TRPM6</i>	transient receptor potential cation channel, subfamily M, member 6	Transient receptor potential channels
<i>TRPM7</i>	transient receptor potential cation channel, subfamily M, member 7	Transient receptor potential channels
<i>TRPM8</i>	transient receptor potential cation channel, subfamily M, member 8	Transient receptor potential channels
<i>TRPV1</i>	transient receptor potential cation channel, subfamily V, member 1	Transient receptor potential channels
<i>TRPV2</i>	transient receptor potential cation channel, subfamily V, member 2	Transient receptor potential channels
<i>TRPV3</i>	transient receptor potential cation channel, subfamily V, member 3	Transient receptor potential channels
<i>TRPV4</i>	transient receptor potential cation channel, subfamily V, member 4	Transient receptor potential channels
<i>TRPV5</i>	transient receptor potential cation channel, subfamily V, member 5	Transient receptor potential channels
<i>TRPV6</i>	transient receptor potential cation channel, subfamily V, member 6	Transient receptor potential channels
<i>VDAC1</i>	voltage-dependent anion channel 1	voltage-dependent anion channel
<i>VDAC2</i>	voltage-dependent anion channel 2	voltage-dependent anion channel
<i>VDAC3</i>	voltage-dependent anion channel 3	voltage-dependent anion channel
<i>ZACN</i>	zinc activated ligand-gated ion channel	ZAC