

**Supplementary Table S1.** NGS-Cardiovascular gene panel sequenced for all inherited cardiovascular conditions at our institution.

Gene	Chromosome	Num. Amplicons	TotalBases	Covered Bases	Missed Bases	Overall Coverage (%)
<i>ABCC8</i>	chr11	47	5139	5139	0	100
<i>ABCC9</i>	chr12	44	5178	5178	0	100
<i>ACTA2</i>	chr10	8	1214	1214	0	100
<i>ACTC1</i>	chr15	8	1194	1194	0	100
<i>ACTN2</i>	chr1	28	3112	3112	0	100
<i>ACVRL1</i>	chr12	14	1602	1602	0	100
<i>AKAP9</i>	chr7	90	12224	12224	0	100
<i>ANK2</i>	chr4	93	12411	12411	0	100
<i>ANKRD1</i>	chr10	9	1050	1050	0	100
<i>APOB</i>	chr2	85	13982	13982	0	100
<i>APOE</i>	chr19	11	1232	1232	0	100
<i>APPL1</i>	chr3	34	3230	3230	0	100
<i>B3GAT3</i>	chr11	13	1474	1471	3	99.8
<i>BAG3</i>	chr10	12	1768	1768	0	100
<i>BGN</i>	chrX	12	1457	1457	0	100
<i>BLK</i>	chr8	21	2118	2118	0	100
<i>BMP10</i>	chr2	9	1375	1375	0	100
<i>BMPRI1A</i>	chr10	13	1709	1709	0	100
<i>BMPRI1B</i>	chr4	13	1709	1709	0	100
<i>BMPR2</i>	chr2	25	3247	3247	0	100
<i>BRAF</i>	chr7	23	2481	2481	0	100
<i>CACNA1C</i>	chr12	64	7626	7626	0	100
<i>CACNA1D</i>	chr3	64	7150	7150	0	100
<i>CACNA2D1</i>	chr7	51	5327	5327	0	100
<i>CACNB2</i>	chr10	26	3269	3269	0	100
<i>CALM1</i>	chr14	7	690	690	0	100
<i>CALM2</i>	chr2	7	664	664	0	100
<i>CALM3</i>	chr19	8	750	750	0	100
<i>CALR3</i>	chr19	14	1605	1574	31	98.07
<i>CASQ2</i>	chr1	13	1750	1750	0	100
<i>CAV1</i>	chr7	6	687	687	0	100
<i>CAV3</i>	chr3	4	476	476	0	100
<i>CBL</i>	chr11	23	2881	2881	0	100
<i>CBS</i>	chr21	21	1806	1806	0	100
<i>CHRM2</i>	chr7	8	1451	1451	0	100
<i>CHST14</i>	chr15	7	1181	1181	0	100
<i>COL1A1</i>	chr17	56	4905	4905	0	100
<i>COL1A2</i>	chr7	55	4621	4621	0	100
<i>COL3A1</i>	chr2	57	4911	4911	0	100
<i>COL5A1</i>	chr9	78	6256	6256	0	100
<i>COL5A2</i>	chr2	64	7200	7200	0	100

<i>CRYAB</i>	chr11	5	678	678	0	100
<i>CSRP3</i>	chr11	6	635	635	0	100
<i>CTNNA3</i>	chr10	29	3758	3758	0	100
<i>CTNNB1</i>	chr3	19	2486	2486	0	100
<i>DES</i>	chr2	15	1503	1503	0	100
<i>DMD</i>	chrX	106	12161	12161	0	100
<i>DNAJC19</i>	chr3	6	411	411	0	100
<i>DOLK</i>	chr9	9	1667	1667	0	100
<i>DSC2</i>	chr18	25	2912	2912	0	100
<i>DSG2</i>	chr18	28	3507	3507	0	100
<i>DSP</i>	chr6	57	8856	8856	0	100
<i>DTNA</i>	chr18	29	3795	3795	0	100
<i>EIF2AK3</i>	chr2	32	4201	4201	0	100
<i>EIF2AK4</i>	chr15	51	6900	6900	0	100
<i>ELN</i>	chr7	37	4094	4094	0	100
<i>EMD</i>	chrX	9	1005	1005	0	100
<i>ENG</i>	chr9	22	2753	2753	0	100
<i>EYA4</i>	chr6	26	3039	3039	0	100
<i>FBN1</i>	chr15	73	9266	9266	0	100
<i>FBN2</i>	chr5	88	9389	9389	0	100
<i>FHL1</i>	chrX	11	1472	1466	6	99.59
<i>FHOD3</i>	chr18	48	6319	6319	0	100
<i>FKRP</i>	chr19	11	1498	1498	0	100
<i>FKTN</i>	chr9	13	1509	1509	0	100
<i>FLNA</i>	chrX	76	10294	10294	0	100
<i>FLNC</i>	chr7	75	8658	8658	0	100
<i>GAA</i>	chr17	27	3049	3049	0	100
<i>GATA4</i>	chr8	12	1392	1392	0	100
<i>GATA5</i>	chr20	12	1494	1494	0	100
<i>GATAD1</i>	chr7	9	1060	1060	0	100
<i>GCK</i>	chr7	17	1608	1608	0	100
<i>GDF2</i>	chr10	7	1390	1390	0	100
<i>GLA</i>	chrX	10	1360	1360	0	100
<i>GLIS3</i>	chr9	22	3293	3293	0	100
<i>GPDL1</i>	chr3	11	1376	1376	0	100
<i>HCN4</i>	chr15	28	4012	4012	0	100
<i>HFE</i>	chr6	9	1125	1107	18	98.4
<i>HNF1A</i>	chr12	16	2017	2017	0	100
<i>HNF1B</i>	chr17	16	1856	1856	0	100
<i>HNF4A</i>	chr20	20	1860	1860	0	100
<i>HRAS</i>	chr11	5	683	683	0	100
<i>ILK</i>	chr11	14	1959	1959	0	100
<i>INS</i>	chr11	3	433	433	0	100
<i>JAG1</i>	chr20	35	3917	3917	0	100
<i>JPH2</i>	chr20	17	2402	2402	0	100

<i>JUP</i>	chr17	21	2368	2368	0	100
<i>KCNA5</i>	chr12	11	1892	1892	0	100
<i>KCND2</i>	chr7	15	2193	2193	0	100
<i>KCND3</i>	chr1	17	2318	2318	0	100
<i>KCNE1</i>	chr21	2	400	400	0	100
<i>KCNE2</i>	chr21	2	382	382	0	100
<i>KCNE3</i>	chr11	2	362	362	0	100
<i>KCNE5</i>	chrX	3	479	479	0	100
<i>KCNH2</i>	chr7	28	4017	4017	0	100
<i>KCNJ11</i>	chr11	6	1183	1183	0	100
<i>KCNJ2</i>	chr17	8	1294	1294	0	100
<i>KCNJ5</i>	chr11	9	1340	1340	0	100
<i>KCNJ8</i>	chr12	8	1375	1375	0	100
<i>KCNK3</i>	chr2	9	1285	1285	0	100
<i>KCNQ1</i>	chr11	20	2206	2206	0	100
<i>KLF11</i>	chr2	11	1739	1739	0	100
<i>KRAS</i>	chr12	6	737	737	0	100
<i>LAMA4</i>	chr6	55	7540	7540	0	100
<i>LAMP2</i>	chrX	15	1626	1626	0	100
<i>LDB3</i>	chr10	24	2668	2664	4	99.85
<i>LDLR</i>	chr19	21	2763	2763	0	100
<i>LDLRAP1</i>	chr1	14	1377	1377	0	100
<i>LIPA</i>	chr10	14	1650	1650	0	100
<i>LMNA</i>	chr1	18	2369	2369	0	100
<i>LOX</i>	chr5	13	1604	1604	0	100
<i>LZTR1</i>	chr22	29	2733	2733	0	100
<i>MAP2K1</i>	chr15	12	1292	1292	0	100
<i>MAP2K2</i>	chr19	13	1313	1313	0	100
<i>MAT2A</i>	chr2	11	1638	1638	0	100
<i>MED12</i>	chrX	59	6984	6984	0	100
<i>MFAP5</i>	chr12	9	972	972	0	100
<i>MIB1</i>	chr18	36	4071	4071	0	100
<i>MURC</i>	chr9	7	1195	1195	0	100
<i>MYBPC3</i>	chr11	35	4155	4155	0	100
<i>MYH11</i>	chr16	51	6391	6391	0	100
<i>MYH6</i>	chr14	51	6190	6190	0	100
<i>MYH7</i>	chr14	45	6188	6188	0	100
<i>MYL2</i>	chr12	7	571	571	0	100
<i>MYL3</i>	chr3	6	648	648	0	100
<i>MYLK</i>	chr3	41	6055	6055	0	100
<i>MYLK2</i>	chr20	21	2391	2391	0	100
<i>MYOZ2</i>	chr4	8	1045	1045	0	100
<i>MYPN</i>	chr10	36	4983	4983	0	100
<i>NEBL</i>	chr10	38	5002	5002	0	100
<i>NEUROD1</i>	chr2	6	1121	1121	0	100

<i>NEXN</i>	chr1	21	2628	2628	0	100
<i>NF1</i>	chr17	74	9161	9161	0	100
<i>NKX2-5</i>	chr5	9	1142	1142	0	100
<i>NNT</i>	chr5	37	4311	4306	5	99.88
<i>NOTCH1</i>	chr9	63	8008	7987	21	99.74
<i>NOTCH3</i>	chr19	51	7296	7296	0	100
<i>NPPA</i>	chr1	4	486	486	0	100
<i>NRAS</i>	chr1	5	610	610	0	100
<i>PAX4</i>	chr7	10	1482	1482	0	100
<i>PAX6</i>	chr11	13	2035	2035	0	100
<i>PCSK9</i>	chr1	16	2199	2199	0	100
<i>PDLIM3</i>	chr4	13	1733	1733	0	100
<i>PDX1</i>	chr13	7	952	952	0	100
<i>PKP2</i>	chr12	21	2786	2786	0	100
<i>PLN</i>	chr6	1	169	169	0	100
<i>PLOD1</i>	chr1	28	3325	3325	0	100
<i>PPARG</i>	chr3	12	1588	1588	0	100
<i>PRDM16</i>	chr1	37	4681	4654	27	99.42
<i>PRKAG2</i>	chr7	19	1974	1974	0	100
<i>PRKG1</i>	chr10	26	3087	3087	0	100
<i>PSEN1</i>	chr14	12	1504	1504	0	100
<i>PSEN2</i>	chr1	15	1447	1447	0	100
<i>PTPN11</i>	chr12	16	1936	1936	0	100
<i>RAF1</i>	chr3	18	2107	2107	0	100
<i>RASA1</i>	chr5	39	3412	3411	1	99.97
<i>RASA2</i>	chr3	38	3815	3793	22	99.42
<i>RBM20</i>	chr10	27	3824	3817	7	99.82
<i>RIT1</i>	chr1	8	771	771	0	100
<i>RYR2</i>	chr1	134	15954	15954	0	100
<i>SCN10A</i>	chr3	49	7221	7221	0	100
<i>SCN1B</i>	chr19	9	1066	1066	0	100
<i>SCN2B</i>	chr11	7	848	848	0	100
<i>SCN3B</i>	chr11	8	898	898	0	100
<i>SCN4B</i>	chr11	7	887	887	0	100
<i>SCN5A</i>	chr3	44	6423	6423	0	100
<i>SDHA</i>	chr5	19	2145	2145	0	100
<i>SGCD</i>	chr5	8	1025	1025	0	100
<i>SHOC2</i>	chr10	14	1829	1829	0	100
<i>SKI</i>	chr1	18	2537	2537	0	100
<i>SLC22A5</i>	chr5	14	1856	1856	0	100
<i>SLC2A10</i>	chr20	14	1876	1876	0	100
<i>SLMAP</i>	chr3	33	3799	3799	0	100
<i>SMAD1</i>	chr4	12	1698	1698	0	100
<i>SMAD2</i>	chr18	13	1504	1504	0	100
<i>SMAD3</i>	chr15	14	1452	1452	0	100

<i>SMAD4</i>	chr18	18	1769	1769	0	100
<i>SMAD9</i>	chr13	13	1704	1704	0	100
<i>SNTA1</i>	chr20	17	1918	1918	0	100
<i>SOS1</i>	chr2	40	4232	4232	0	100
<i>SOS2</i>	chr14	46	4919	4919	0	100
<i>SPRED1</i>	chr15	13	1405	1405	0	100
<i>TAZ</i>	chrX	14	1043	1043	0	100
<i>TBX20</i>	chr7	15	1748	1748	0	100
<i>TBX4</i>	chr17	16	2038	2038	0	100
<i>TBX5</i>	chr12	12	1637	1637	0	100
<i>TCAP</i>	chr17	5	524	524	0	100
<i>TGFB2</i>	chr1	12	1409	1409	0	100
<i>TGFB3</i>	chr14	10	1589	1589	0	100
<i>TGFBR1</i>	chr9	13	1614	1614	0	100
<i>TGFBR2</i>	chr3	12	1859	1859	0	100
<i>TMEM43</i>	chr3	13	1323	1323	0	100
<i>TMPO</i>	chr12	25	3385	3385	0	100
<i>TNNC1</i>	chr3	7	546	546	0	100
<i>TNNI3</i>	chr19	7	702	702	0	100
<i>TNNI3K</i>	chr1	30	3758	3710	48	98.72
<i>TNNT2</i>	chr1	17	1081	1081	0	100
<i>TPM1</i>	chr15	15	1500	1500	0	100
<i>TRDN</i>	chr6	48	4418	4418	0	100
<i>TRPM4</i>	chr19	32	3895	3895	0	100
<i>TTN</i>	chr2	800	132581	129775	2806	97.88
<i>TTR</i>	chr18	5	484	484	0	100
<i>TXNRD2</i>	chr22	23	2543	2543	0	100
<i>VCL</i>	chr10	36	4505	4505	0	100
<i>ZDHHC9</i>	chrX	10	1545	1545	0	100