**Supplementary Table 1.** Summary of the 127 targeted deafness genes.

| Gene        | NS/S | Inheritance | mRNA         | Exons |
|-------------|------|-------------|--------------|-------|
| ACTG1       | NS   | AD          | NM_001199954.1 | 6     |
| ALMS1       | S    | AR          | NM_015120.4   | 23    |
| ATP2B2      | NS   | AR          | NM_001001331.2 | 23    |
| BSND        | NS/S | AR          | NM_057176.2   | 4     |
| CACNA1D     | NS/S | AR          | NM_000720.3   | 49    |
| CCDC50      | NS   | AD          | NM_178335.2   | 12    |
| CDH23       | NS/S | AR          | NM_022124.5,  | 70    |
| CEACAM16    | NS   | AD          | NM_001039213.3 | 7     |
| CHD7        | S    | AD          | NM_017780.3   | 38    |
| CLDN14      | NS   | AR          | NM_144492.2   | 3     |
| CLRN1       | NS/S | AR          | NM_174878.2   | 3     |
| COCH        | NS   | AD          | NM_001135058.1 | 11    |
| COL11A1     | S    | AR/AD       | NM_001854.3   | 67    |
| COL2A1      | S    | AD          | NM_033150.2   | 53    |
| COL4A3      | S    | AR          | NM_000091.4   | 52    |
| COL4A4      | S    | AR          | NM_000092.4   | 48    |
| COL4A5      | S    | X-linked    | NM_000495.4   | 51    |
| COL9A1      | S    | AR          | NM_001851.4   | 38    |
| COL9A2      | S    | AR          | NM_001852.3   | 32    |
| CRYM        | NS   | AD          | NM_001888.4   | 10    |
| DFNA5       | NS   | AD          | NM_004403.2   | 10    |
| DFNB31      | NS/S | AR          | NM_015404.3   | 12    |
| DFNB59/PJVK | NS   | AR          | NM_001042702.3 | 7     |
| DIABLO      | NS   | AD          | NM_019887.5   | 7     |
| DIAPH1      | NS   | AD          | NM_005219.4   | 28    |
| DIAPH3      | NS   | AD          | NM_001258366.1 | 27    |
| DLX5        | S    | AD          | NM_005221.5   | 3     |
| DSPP        | NS   | AD          | NM_014208.3   | 5     |
| EDN3        | S    | AD          | NM_207032.2   | 5     |
| EDNRB       | S    | AD          | NM_000115.3   | 8     |
| Gene  | Age | Region  | GenBank ID  | No. |
|-------|-----|---------|-------------|-----|
| ESPN  | NS  | AR/AD   | NM_031475.2 | 13  |
| ESRRB | NS  | AR      | NM_004452.3 | 11  |
| EYA1  | S   | AD      | NM_000503.5 | 18  |
| EYA4  | NS  | AD      | NM_004100.4 | 20  |
| FGF3  | S   | AR      | NM_005247.2 | 3   |
| FGFR1 | S   | AD      | NM_023110.2 | 18  |
| FGFR2 | S   | AD      | NM_000141.4 | 18  |
| FGFR3 | S   | AD      | NM_000142.4 | 18  |
| FOXI1 | NS/S| AR/AD   | NM_012188.4 | 2   |
| GATA3 | S   | AD      | NM_001002295.1 | 6   |
| GIPC3 | NS  | AR      | NM_133261.2 | 6   |
| GJA1  | NS  | AR      | NM_000165.4 | 2   |
| GJB2  | NS  | AR/AD   | NM_004004.5 | 2   |
| GJB3  | NS  | AR/AD   | NM_024009.2 | 2   |
| GJB6  | NS  | AR/AD   | NM_001110219.2 | 5  |
| GLI3  | S   | AD      | NM_000168.5 | 15  |
| GPR98 | NS/S| AR      | NM_032119.3 | 90  |
| GPSM2 | NS  | AR      | NM_013296.4 | 15  |
| GRHL2 | NS  | AD      | NM_024915.3 | 16  |
| GRXCR1| NS  | AR      | NM_001080476.2 | 4  |
| HGF   | NS  | AR      | NM_000601.4 | 18  |
| HOXA1 | S   | AR      | NM_005522.4 | 2   |
| HOXA2 | S   | AR      | NM_006735.3 | 2   |
| IGF1  | S   | AR      | NM_001111283.1 | 5  |
| ILDR1 | NS  | AR      | NM_001199799.1 | 8  |
| KCNE1 | NS/S| AR      | NM_000219.5 | 4   |
| KCNJ10| NS/S| AR      | NM_002241.4 | 2   |
| KCNQ1 | NS/S| AR      | NM_000218.2 | 16  |
| KCNQ4 | NS  | AD      | NM_004700.3 | 14  |
| LHFPL5| NS  | AR      | NM_182548.3 | 4   |
| LOXHD1| NS  | AR      | NM_144612.6 | 40  |
| LRP2  | S   | AR      | NM_004525.2 | 79  |
| LRTOMT| NS  | AR      | NM_145309.5 | 6   |
| Gene       | Phenotype | Color | Refseq   | Position |
|------------|-----------|-------|----------|----------|
| MARVELD2   | NS        | AR    | NM_001038603.2 | 7        |
| MIR96      | NS        | AD    | NR_029512.1 |          |
| MITF       | S         | AD    | NM_198159.2 | 10       |
| MSRB3      | NS        | AR    | NM_198080.3 | 6        |
| MT-RNR1    | NS        | MT    | —        |          |
| MT-TE      | S         | MT    | —        |          |
| MT-TK      | S         | MT    | —        |          |
| MT-TL1     | S         | MT    | —        |          |
| MT-TS1     | NS        | MT    | —        |          |
| MYH14      | NS        | AD    | NM_001077186.1 | 42       |
| MYH9       | NS        | AD    | NM_002473.5 | 41       |
| MYO15A     | NS        | AR    | NM_016239.3 | 66       |
| MYO1A      | NS        | AD    | NM_001256041.1 | 29       |
| MYO3A      | NS        | AR    | NM_017433.4 | 35       |
| MYO6       | NS        | AR/AD | NM_004999.3 | 35       |
| MYO7A      | NS/S      | AR/AD | NM_000260.3 | 49       |
| NDP        | S         | X-linked | NM_000266.3 | 3        |
| OPA1       | S         | AD    | NM_015560.2 | 29       |
| OTOA       | NS        | AR    | NM_144672.3 | 28       |
| OTOF       | NS        | AR    | NM_194248.2 | 47       |
| OTOG       | NS        | AR    | NM_001277269.1 | 55       |
| PAX2       | S         | AD    | NM_003987.3 | 11       |
| PAX3       | S         | AD    | NM_181457.3 | 8        |
| PCDH15     | NS/S      | AR    | NM_001142765.1 | 32       |
| PDSS1      | S         | AR    | NM_014317.3 | 12       |
| PDZD7      | NS/S      | AR    | NM_001195263.1 | 17       |
| PHEX       | S         | X-linked | NM_000444.5 | 22       |
| POU3F4     | NS        | X-linked | NM_000307.4 | 1        |
| POU4F3     | NS        | AD    | NM_002700.2 | 2        |
| PRPS1      | NS        | X-linked | NM_002764.3 | 7        |
| PRRX1      | S         | AR    | NM_022716.3 | 4        |
| PTRPRQ     | NS        | AR    | NM_001145026.1 | 45       |
| RDX        | NS        | AR    | NM_001260492.1 | 16       |
| Gene       | Syndrome | Inheritance | Accession       | Associated Phenotypes |
|------------|----------|-------------|-----------------|-----------------------|
| SEMA3E     | S        | AR          | NM_012431.2     | 17                    |
| SERAC1     | S        | AR          | NM_032861.3     | 17                    |
| SERPINB6   | NS       | AR          | NM_001297699.1  | 7                     |
| SIX1       | NS/S     | AD          | NM_005982.3     | 2                     |
| SIX5       | S        | AD          | NM_175875.4     | 3                     |
| SLC17A8    | NS       | AD          | NM_139319.2     | 12                    |
| SLC19A2    | S        | AR          | NM_006996.2     | 6                     |
| SLC26A4    | NS/S     | AR          | NM_000441.1     | 21                    |
| SLC26A5    | NS       | AR          | NM_198999.2     | 20                    |
| SLC4A11    | S        | AR          | NM_001174090.1  | 20                    |
| SMAD4      | S        | AD          | NM_005359.5     | 12                    |
| SMPX       | NS       | X-linked    | NM_014332.2     | 5                     |
| SNAI2      | S        | AD          | NM_003068.4     | 3                     |
| SOBP       | S        | AR          | NM_018013.3     | 7                     |
| SOX10      | S        | AD          | NM_006941.3     | 4                     |
| SOX9       | S        | AD          | NM_000346.3     | 3                     |
| STRC       | NS       | AR          | NM_153700.2     | 29                    |
| TCOF1      | S        | AD          | NM_001135244.1  | 26                    |
| TECTA      | NS       | AR/AD       | NM_005422.2     | 23                    |
| TIMM8A     | NS/S     | X-linked    | NM_004085.3     | 2                     |
| TJP2       | NS       | AD          | NM_004817.3     | 23                    |
| TMC1       | NS       | X-linked    | NM_138691.2     | 24                    |
| TMIE       | NS       | AR          | NM_147196.2     | 4                     |
| TMPRSS3    | NS       | AR          | NM_024022.2     | 13                    |
| TNFRSF11B  | S        | AD          | NM_002546.3     | 5                     |
| TPRN       | NS       | AR          | NM_001128228.2  | 4                     |
| TRIOBP     | NS       | AR          | NM_138632.2     | 8                     |
| USH1C      | NS/S     | AR          | NM_005709.3     | 21                    |
| USH1G      | NS/S     | AR          | NM_173477.4     | 3                     |
| USH2A      | NS/S     | AR          | NM_206933.2     | 72                    |
| WFS1       | NS/S     | AR/AD       | NM_006005.3     | 8                     |

NS: Non-Syndromic; S: Syndromic; AR: Autosomal Recessive; AD: Autosomal Dominant; MT: Mitochondrial Inheritance
