Supplementary Table 1: Human genes captured

Gene name	Chromosomal locus	Group[A]	Recessive NSHL	Dominant NSHL	X-linked NSHL	Human syndrome	Number of captured exons	Number of captured bp
ABR	17p13.3	Mouse					25	10527
ACAN	15q26.1	Mouse					18	12140
ACTB	7p22	Human SHL, mouse				Juvenile-onset dystonia	7	2837
ACTG1	17q25.3	Human NSHL		DFNA20/26			5	2793
ALDH1A2	15q21.3	Mouse					15	5716
ALMS1	2p13	Mouse					23	16184
AP3D1	19p13.3	Mouse					31	9139
APAF1	12q23	Mouse					27	9495
AQP4	18q11.2	Mouse					5	5966
ATF2	2q32	Mouse					14	4663
ATOH1	4q22	Mouse					1	1201
ATP2B2	3p25.3	Mouse					26	12188
ATP6V1B1	2p13.1	Human SHL				Distal renal tubular acidosis (RTA) with sensorineural deafness	16	5190
ATP8B1	18q21.31	Mouse					28	9080
AXIN1	16p13.3	Mouse					11	4770
BARHL1	9q34	Mouse					3	2403
BBS1	11q13.1	Mouse					18	5895
BBS4	15q22.3	Mouse					16	5735
BCR	22q11.23	Mouse					23	11706
BCS1L	2q33	Human SHL				Björnstad syndrome, HL and pili torti; Leigh syndrome	28	3428
BDNF	11p13	Mouse					21	11541
BMP4	14q22	Mouse					5	2566
BSN	3p21.31	Mouse					12	16738
BSND	1p32.1	Mouse					4	1845
CACNA1D	3p14.3	Mouse					50	15080
CACNB2	10p12	Mouse					19	8340
CACNG2	22q13.1	Mouse					4	4368
CASP3	4q34	Mouse					8	4090

CCDC50	3q28	Human NSHL		DFNA44		12	10148
CDH23	10q22.1	Human NSHL, SHL	DFNB12		Usher, USH1D	67	21442
CDKN1B	12p13.1	Mouse				3	2724
CDKN2D	19p13	Mouse				2	1643
CELSR1	22q13.3	Mouse				35	15836
CHD7	8q12.1	Mouse				38	15355
CHRNA9	4p14	Mouse				5	2525
CKB	14q32	Mouse				6	2286
CLDN11	3q26.2	Mouse				6	3206
CLDN14	21q22.13	Human NSHL	DFNB29			7	3006
CLDN9	16p13.3	Mouse				1	2161
CLIC5	6p21.1	Mouse				7	8891
CLRN1	3q25	Human SHL, mouse			Usher, USH3A	4	3166
COCH	14q12	Human NSHL		DFNA9		12	4661
COL11A1	1p21	Human SHL, mouse			Stickler, STL2; Marshall; Fibrochondrogenesis	69	17185
COL11A2	6p21.32	Human NSHL, SHL	DFNB53	DFNA13	Stickler, STL3; Fibrochondrogenesis 2; Otospondylomegaepiphyseal dysplasia; Weissenbacher-Zweymuller syndrome	66	16278
COL2A1	12q13.11	Human SHL, mouse			Stickler, STL1; Czech dysplasia; Epiphyseal dysplasia, multiple, with myopia and deafness; Otospondylomegaepiphyseal dysplasia; Spondyloepiphyseal dysplasia congenita	54	13553
COL4A3	2q36	Human SHL, mouse			Alport	53	14732
COL4A4	2q35	Human SHL			Alport	49	17021
COL4A5	Xq22.3	Human SHL			Alport	51	14759
COL9A1	6q12	Human SHL, mouse			Stickler, STL4	38	9866
COL9A3	20q13.3	Human NSHL				32	7081

CPLX1	4p16.3	Mouse				4	2485
CRYM	16p12.2	Human NSHL		DFNA40		12	3292
DDB2	11p12-p11	Human SHL			Xeroderma pigmentosum	10	4337
DDR1	6p21.3	Mouse				21	6930
DFNA5	7p15.3	Human NSHL		DFNA50		11	4812
DFNB31	9q32	Human NSHL, SHL	DFNB31		Usher, USH2D	13	6334
DFNB59	2q31.2	Human NSHL	DFNB59			7	2407
DIAPH1	5q31.3	Human NSHL		DFNA1		28	9442
DIO2	14q24.2	Mouse				6	7328
DIO3	14q32	Mouse				1	2161
DLX2	2q32	Mouse				3	2844
DLX5	7q22	Mouse				3	2124
DMD	Xp21.2	Mouse				85	28443
DSPP	4q22.1	Human NSHL		DFNA36		5	2806
DVL1	1p36	Mouse				14	5990
DVL2	17p13.2	Mouse				15	4971
DVL3	3q27	Mouse				15	6038
EDN3	20q13.2	Human SHL, mouse			Waardenburg, WS4	5	3445
EDNRB	13q22	Human SHL, mouse			Waardenburg, WS4	8	5883
EPHB1	3q21	Mouse				16	6939
EPHB2	1p36.1	Mouse				16	6776
EPHB3	3q21	Mouse				17	5854
ERBB4	2q33.3	Mouse				28	15733
ERCC1	19q13.32	Human SHL			Xeroderma pigmentosum	10	4653
ERCC2	19q13.3	Human SHL			Cockayne syndrome, Xeroderma pigmentosum	23	5803
ERCC3	2q21	Human SHL			Cockayne syndrome, Xeroderma pigmentosum	15	5692
ERCC4	16p13.12	Human SHL			Xeroderma pigmentosum; XFE progeroid syndrome	11	8176
ERCC5	13q33	Human SHL			Cockayne syndrome, Xeroderma pigmentosum	15	9095
ESPN	1p36.31	Human NSHL	DFNB36			13	5047

ESR2	14q23.2	Mouse				11	9056
ESRRB	14q24.3	Human NSHL	DFNB35			11	4570
EYA1	8q13.3	Human SHL, mouse			Branchio-oto-renal, BOR1	18	7283
EYA4	6q23.2	Human NSHL		DFNA10		21	8888
FABP4	8q21	Mouse				4	1444
FAS	10q24.1	Mouse				9	6550
FBXO10	9p13.2	Suspected				11	6013
FBXO2	1p36.22	Mouse				5	2407
FGF3	11q13	Mouse				3	1864
FGFR1	8p11.2	Mouse				21	9979
FGFR2	10q26	Mouse				21	7861
FGFR3	4p16.3	Mouse				20	6313
FIGN	2q24.3	Mouse				3	4925
FOXG1	14q13	Mouse				1	2082
FOXI1	5q34	Human SHL, mouse			Enlarged vestibular aqueduct	2	2443
FZD3	8p21	Mouse				8	12977
FZD6	8q22.3	Mouse				8	5128
GATA3	10p15	Mouse				6	3648
GBX2	2q37	Mouse				2	1684
GFI1	1p22	Mouse				9	3923
GJA1	6q21-q23.2	Human SHL, suspected NSHL			Oculodentodigital dysplasia	3	3362
GJA1P1	5q21.3	Suspected				1	3121
GJB1	Xq13.1	Human SHL			Charcot-Marie-Tooth Neuropathy X	10	2163
GJB2	13q12.11	Human NSHL, SHL	DFNB1A	DFNA3A	Bart-Pumphrey syndrome; Hystrix-like ichthyosis with deafness; Keratitis-ichthyosis-deafness syndrome; Keratoderma, palmoplantar, with deafness; Vohwinkel syndrome	2	2442
GJB3	1p34.3	Human NSHL		DFNA2B		3	3726

GJB4	1p34.3	Human SHL, suspected NSHL			Palmoplantar Keratoderma, Erythrokeratodermia variabilis et progressiva	2	2123
GJB5	1p35.1	Suspected				2	1242
GJB6	13q12.11	Human NSHL	DFNB1B; digenic *GJB2/GJB6* deafness	DFNA3B		5	3162
GLI3	7p13	Mouse				15	10379
GPR98	5q13	Human SHL, mouse			Usher, USH2C	90	31270
GPSM2	1p13.3	Human NSHL	DFNB82			16	7173
GPX1	3p21.3	Mouse				1	1322
GRHL2	8q22.3	Human NSHL		DFNA28		16	7816
GRID1	10q22	Mouse				16	8339
GRXCR1	4p13	Human NSHL	DFNB25			4	1404
GSTM1	1p13.3	Sensitivity to hearing loss				8	2304
GSTP1	11q13	Sensitivity to hearing loss				7	1897
GSTT1	22q11.23	Sensitivity to hearing loss				5	2447
GUSB	7q21.11	Mouse				12	3958
HAL	12q22	Mouse				20	5668
HES1	3q28	Mouse				4	1952
HES5	1p36.32	Mouse				3	1321
HGF	7q21.11	Human NSHL	DFNB39			19	6699
HMX2	10q25.2	Mouse				2	1803
HMX3	10q26.13	Mouse				2	1284
HOXA1	7p15.3	Mouse				2	2763
HOXA2	7p15	Mouse				2	1762
HOXB1	17q21.3	Mouse				2	1322
IFT88	13q12.1	Mouse				28	8430
IGF1	12q22	Mouse				6	8091
ILDR1	3q13.33	Human NSHL	DFNB42			8	3570
ITGA8	10p13	Mouse				30	7350

JAG1	20p12.1	Mouse				26	10162
JAG2	14q32	Mouse				23	7484
KCNE1	21q22.12	Mouse			Jervell & Lange-Nielsen, JLNS2	6	3409
KCNJ10	1q22	Mouse				2	5325
KCNMA1	10q22.3	Mouse				31	21289
KCNQ1	11p15.5	Human SHL, mouse			Jervell & Lange-Nielsen, JLNS1	17	5859
KCNQ4	1p34.2	Human NSHL		DFNA2A		14	5694
KIT	4q11	Mouse				21	7796
KITLG	12q22	Mouse				10	6613
LAMA2	6q22	Mouse				65	18502
LARGE	22q12.3	Mouse				17	6608
LFNG	7p22.2	Mouse				13	4432
LHFPL5	6p21.31	Human NSHL	DFNB67			4	2205
LHX3	99q34.3	Human SHL			Hypopituitarism and hearing loss	6	3593
LMO4	1p22.3	Mouse				5	6050
LMX1A	1q22	mouse				10	5251
LOXHD1	18q21.1	Human NSHL, mouse	DFNB77			44	14385
LRIG3	12q14.1	Mouse				20	6860
LRP2	2q24	Mouse				79	26282
LRTOMT	11q13.4	Human NSHL	DFNB63			11	5853
MAFB	20q11.2	Mouse				1	3164
MAP1A	15q13	Mouse				6	10940
MARVELD2	5q13.2	Human NSHL	DFNB49			8	3409
MCOLN3	1p22.3	Mouse				12	5233
MIR182	7q32.2	Suspected				1	241
MIR183	7q32.2	Suspected				1	
MIR96	7q32.2	Human NSHL		DFNA50		1	469
MITF	3p14.2	Human SHL, mouse			Waardenburg, WS2A; Tietz albinism-deafness syndrome	13	7776
MKKS	20p12	Mouse				7	3567
MOS	8q11	Mouse				1	1201
MPV17	2p23.3	Mouse				9	2715

MSRB3	12q14.3	Human NSHL	DFNB74			8	5171
MSX2	5q34	Mouse				2	2403
MTAP	9p21.3	Human NSHL		Translocation		9	4974
MUTED	6p25.1	Mouse				5	3287
MYH14	19q13.33	Human NSHL, SHL		DFNA4	Peripheral neuropathy, myopathy, hoarseness, and hearing loss	43	12540
MYH9	22q12.3	Human NSHL, SHL		DFNA17	Epstein syndrome; Fechtner syndrome; Macrothrombocytopenia and progressive sensorineural deafness; May-Hegglin anomaly; Sebastian syndrome	41	13763
MYO15A	17p11.2	Human NSHL	DFNB3			64	20241
MYO1A	12q13.3	Human NSHL		DFNA48		29	7428
MYO1C	17p13	Human NSHL				32	8677
MYO1F	19p13.3-p13.2	Human NSHL suggested				28	7104
MYO3A	10p12.1	Human NSHL	DFNB30			35	12345
MYO6	6q14.1	Human NSHL	DFNB37	DFNA22		35	12353
MYO7A	11q13.5	Human NSHL, SHL	DFNB2	DFNA11	Usher, USH1B	50	15050
NAV2	11p15.1	Mouse				40	17935
NDP	Xp11.4	Human SHL, mouse			Norrie, NDP	3	2324
NEU1	6p21.3	Mouse				6	2804
NEUROD1	2q32	Mouse				2	2797
NEUROG1	5q23	Mouse				1	1762
NF1	17q11.2	Mouse				60	24863
NOTCH1	9q34.3	Mouse				33	14296
NOX3	6q25.1	Mouse				14	3508
NOXO1	16p13.3	Mouse				7	2455
NR2F1	5q14	Human SHL			Profound deafness, history of feeding difficulties, dysmorphism, strabismus, developmental delay	4	2647
NR4A3	9q22	Mouse				9	7815
NTF3	12p13	Mouse				2	1603

NTN1	17p13	Mouse					7	6449
NTRK2	9q22.1	Mouse					23	20733
NTRK3	15q25	Mouse					21	7941
OC90	8q24.22	Mouse					14	4456
OTOA	16p12.2	Human NSHL	DFNB22				30	6989
OTOF	2p23.3	Human NSHL	DFNB9				47	13890
OTOG	11p15.1	Mouse					22	7662
OTOP1	4p16.3	Mouse					6	2647
OTOR	20p12.1-p11.23	Suspected					4	2125
OTX1	2p13	Mouse					5	3849
OTX2	14q21	Mouse					5	3004
P2RX2	12q24.33	Human NSHL					12	2803
PAX2	10q24	Mouse					12	6337
PAX3	2q35	Human SHL, mouse				Waardenburg, WS1 and WS3; Craniofacial-deafness-hand syndrome	9	5370
PCDH15	10q21.1	Human NSHL, SHL	DFNB23			Usher, USH1F	43	18815
PDZD7	10q24.31	Human SHL digenic gene				Usher, USH2C, digenic; modifier of USH2A	13	6499
PHEX	Xp22.2	Mouse					22	6182
PLDN	15q21.1	Mouse					5	4488
PMP22	17p12	Human SHL				Dejerine-Sottas disease; Charcot-Marie-Tooth disease; Hereditary motor and sensory neuropathy Type 1A; Hereditary neuropathy with liability to pressure palsies.	5	2687
PNOC	8p21	Mouse					4	2725
POLH	6p21.1	Human SHL				Xeroderma pigmentosum	11	6097
POU1F1	3p11	Mouse					6	2166
POU3F4	Xq21.1	Human NSHL, mouse			DFNX2 (DFN3)		1	1402
POU4F3	5q31	Human NSHL		DFNA15			2	1442
PROP1	5q35.3	Mouse					3	1883

PRPS1	Xq22	Human NSHL			DFNX1 (DFN2)	Arts syndrome; Charcot-Marie-Tooth disease X; Gout; Phosphoribosylpyrophosphate synthetase superactivity	7	3167
PRRX1	1q24	Mouse					5	4528
PRRX2	9q34.1	Mouse					4	1444
PTK7	6p21.1	Mouse					20	6970
PTPRQ	12q21.31	Human NSHL	DFNB84				42	12779
RARA	17q21	Mouse					11	5734
RARB	3p24	Mouse					9	4370
RARG	12q13	Mouse					11	4772
RASA1	5q13.3	Mouse					25	8015
RDX	11q22.3	Human NSHL	DFNB24				18	7460
S1PR2	19p13.2	Mouse					2	2725
SCARB2	4q21.1	Mouse					12	5934
SCRIB	8q24.3	Mouse					33	9525
SERPINB6	6p25.2	Human NSHL	DFNB91				8	4851
SIX1	14q23.1	Human NSHL, SHL, mouse		DFNA23		Branchio-oto-renal, BOS3	2	2883
SIX5	19q13.32	Human SHL				Branchio-oto-renal, BOR2	3	3444
SLC12A2	5q23.3	Mouse					27	12237
SLC12A6	15q13	Mouse					28	11471
SLC12A7	5p15	Mouse					24	8399
SLC17A8	12q23.1	Human NSHL		DFNA25			12	4895
SLC19A2	1q23.3	Mouse					6	4327
SLC1A3	5p13	Mouse					10	5931
SLC26A4	7q22.3	Human SHL				Pendred, PDS; Enlarged vestibular aqueduct	21	8267
SLC26A5	7q22.1	Human NSHL	DFNB61				21	5500
SLC30A4	15q21.1	Mouse					8	4690
SLC4A11	20p12	Mouse					21	6037
SLC4A7	3p22	Mouse					26	11751
SLC9A1	1p36.1	Mouse					12	6469
SMPX	Xp22.1	Human NSHL			DFNX4		6	1645

SMS	Xp22.1	Mouse				11	3214
SNAI2	8q11	Human SHL, mouse			Waardenburg, WS2D	3	2405
SOBP	6q21	Mouse				7	8254
SOD1	21q22.11	Mouse				5	2207
SOX10	22q13.1	Human SHL, mouse			Waardenburg, WS4, WS2E; PCWH syndrome	5	3805
SOX2	3q26.3	Mouse				1	2603
SOX9	17q24.3	Mouse				3	3807
SPRY2	13q31.1	Mouse				2	3444
ST3GAL5	2p11.2	Mouse				8	4050
STRC	15q15.3	Human NSHL	DFNB16			29	9526
SYNE4	19q13.12	Human NSHL	DFNB76			9	2488
SYNJ2	6q25.3	Mouse				27	12621
TBL1X	Xp22.3	Human NSHL (late onset)				18	8650
TBX1	22q11.21	Mouse				11	3171
TBX10	11q13.2	Mouse				7	2488
TCOF1	5q32	Human SHL			Treacher Collins, TCOF1	28	9199
TECTA	11q23.3	Human NSHL	DFNB21	DFNA8/12		23	9823
TFB1M	6q25.1-q25.3	Suspected				7	3648
TGFA	2p13	Mouse				6	5726
TGFB2	1q41	Mouse				8	10780
THRA	17q11.2	Mouse				11	4333
THRB	3p24.2	Mouse				12	8175
TIMM8A	Xq22.1	Human SHL			Deafness, dystonia and additional features; Deafness and Dystonia-Optic Neuronopathy Syndrome; Jensen syndrome; MOHR-TRANEBJAERG syndrome	3	2274
TJP2	9q21.11	Human NSHL		DFNA51		25	11127
TMC1	9q21.13	Human NSHL	DFNB7	DFNA36		24	6079
TMIE	3p21.31	Human NSHL	DFNB6			4	2204
TMPRSS3	21q22.3	Human NSHL	DFNB8/10			13	5173

TMPRSS5	11q23.2	Human NSHL, suggested				13	3933
TNFRSF11B	8q24	Mouse				5	3126
TPRN	9q34.3	Human NSHL	DFNB79			3	2313
TRIOBP	22q13.1	Human NSHL	DFNB28			32	14731
TRPV4	12q24.1	Mouse				16	5417
TSHR	14q31	Mouse				11	6331
TUB	11p15.5	Mouse				15	8258
TYRP1	9p23	Mouse				8	3968
UCN	2p23	Mouse				2	843
USH1C	11p15.1	Human NSHL, SHL	DFNB18		Usher, USH1C	28	7396
USH1G	17q25.1	Human SHL, mouse			Usher, USH1G	3	3524
USH2A	1q41	Human SHL, mouse			Usher, USH2A	72	29525
VANGL2	1q22	Mouse				9	5970
WFS1	4p16.1	Human NSHL, SHL		DFNA6/14/38	Wolfram syndrome; Wolfram-like syndrome	9	5168
XPA	99q22.3	Human SHL			Xeroderma pigmentosum	7	2767
XPC	3p25	Human SHL			Xeroderma pigmentosum	16	5870
					SUM:	4421	1,981,479

[A]NSHL, non-syndromic hearing loss; SHL, syndromic hearing loss