

Table SI. Primers used for *NCSTN* gene mutation analysis

Primer name	Role of primer	Position Mb (Ensembl GRCh37)	Primer sequence
<i>Primer on 14q24.2 (PSEN1 locus)</i>			
hPSEN1-F1	Forward primer (5'-3')	5153	AGGTGGAGCTCTGGGTTCTC
hPSEN1-Rn1	Sequencing primer	5656	GCCCCTCATCTTTTAGGACA
hPSEN1-R1	Reverse primer (5'-3')	5515	GAGACGCTCTCGAGCAAACA
hPSEN1-F2	Forward primer (5'-3')	6253	ACAATGGATGACCTGGTGAA
hPSEN1-Fn2	Sequencing primer	6258	GGATGACCTGGTAAATCCT
hPSEN1-R2	Reverse primer (5'-3')	6622	GTGAATCCAGTCTGGCAAAG
hPSEN1-F3	Forward primer (5'-3')	7366	CCCAGGTCTAACCGTTACCT
hPSEN1-Rn3	Sequencing primer	7742	TCAAGGTGATGATGACATGC
hPSEN1-R3	Reverse primer (5'-3')	7803	TCCTGACCATCACAGAGGAT
hPSEN1-F4	Forward primer (5'-3')	8418	AGGTGGTAATGTGGTTGGTG
hPSEN1-Rn4	Sequencing primer	8644	ACAGGGTGAAAGCAAAGAT
hPSEN1-R4	Reverse primer (5'-3')	8789	CACCTGGCTTCCTTTTGTGA
hPSEN1-F5	Forward primer (5'-3')	9341	TTTTAAGGGTTGTGGGACCT
hPSEN1-Rn5	Sequencing primer	9501	TGATAGCTACACAGCACAAGG
hPSEN1-R5	Reverse primer (5'-3')	9630	AGCAAGGAGCAACAGAAGAA
hPSEN1-F6	Forward primer (5'-3')	10191	TTGGGAGCCATCACATTATT
hPSEN1-Rn6	Sequencing primer	10501	ACAAACAAATATCAGTCTGG
hPSEN1-R6	Reverse primer (5'-3')	10524	CACTCCAGTGGGCATTCTGT
hPSEN1-F7	Forward primer (5'-3')	11156	CCACCAGTTCACCTGCCATT
hPSEN1-Rn7	Sequencing primer	11536	AGGAGTTCAGGAATGCTGTGC
hPSEN1-R7	Reverse primer (5'-3')	11554	GCTTGAAGGAAACAAGAG
hPSEN1-F8	Forward primer (5'-3')	12135	TGAACAGTCTTAAGGCAGCA
hPSEN1-Rn8	Sequencing primer	12446	TAGTTCTCAAGAGATTCTCA
hPSEN1-R8	Reverse primer (5'-3')	12476	ACTTATCTGTGTTTACTG
hPSEN1-F9	Forward primer (5'-3')	12973	GCCCTCAGGAAATAAAGGAG
hPSEN1-Fn9	Sequencing primer	13035	CCATGCTTTGTGGTTAAGG
hPSEN1-R9	Reverse primer (5'-3')	13358	CTACCTAAAGGAATCCATGACT
hPSEN1-F10	Forward primer (5'-3')	14157	CATTCAATTGTGGGTTGAGT
hPSEN1-Rn10	Sequencing primer	14445	TGGGGTTAAAACAGAAGTGC
hPSEN1-R10	Reverse primer (5'-3')	14530	CTAATGTGTGGCCAGGGTAG
hPSEN1-F11	Forward primer (5'-3')	15152	TGTGATTGAGTTTGCCTGA
hPSEN1-Rn11	Sequencing primer	15648	ACTTCCGGGCCTATCATATC
hPSEN1-R11	Reverse primer (5'-3')	15699	TCAGTGAAATCGCTCTGTGA
hPSEN1-F12	Forward primer (5'-3')	15543	CTTTGGAAGGAGGTGCCTAT
hPSEN1-Rn12	Sequencing primer	16043	GCAATCAAGACGGTAATGA
hPSEN1-R12	Reverse primer (5'-3')	16063	GGAAGAAATGGCAATCACAG
hPSEN1-F13	Forward primer (5'-3')	15938	TGCTGCAGACTCATCCTTTT
hPSEN1-Rn13	Sequencing primer	16596	CCCAACTCTTGTGTTGTT
hPSEN1-R13	Reverse primer (5'-3')	16601	CTTTCCCAACTCTTGCTTT
hPSEN1-F14	Forward primer (5'-3')	16520	TTTTGCCACACAGTAGCTCA
hPSEN1-Rn14	Sequencing primer	17026	CAGCCACAGGAGGAACTAA
hPSEN1-R14	Reverse primer (5'-3')	17075	GATTGGGAGAGAAAACAGCA
hPSEN1-F15	Forward primer (5'-3')	16995	GCTGATCAGACCGTAAGCGTT
hPSEN1-Rn15	Sequencing primer	17516	CCTCTTCAGAGAAAGAAATG
hPSEN1-R15	Reverse primer (5'-3')	17535	AATACACACACCCACGTACC
hPSEN1-F16	Forward primer (5'-3')	17407	AGCAAAGCCACCTGAATAGC
hPSEN1-Rn16	Sequencing primer	17961	TCTATAACCACCGCCTGTCC
hPSEN1-R16	Reverse primer (5'-3')	17976	CTGGTTTTGCCGACTCTAT
hPSEN1-F17	Forward primer (5'-3')	17941	GATGTGCCTTCACTCACACG
hPSEN1-Rn17	Sequencing primer	18439	TCTGTTTGGCATCTATTGC
hPSEN1-R17	Reverse primer (5'-3')	18445	AACATCATCTGTTTGGGCATC
hPSEN1-F18	Forward primer (5'-3')	18353	AGCAACAAGTGAAGAGGCAGT
hPSEN1-Rn18	Sequencing primer	18921	CATAACAGCAAATTAGAGAA
hPSEN1-R18	Reverse primer (5'-3')	18942	GCAGGTCAAAGTTCCTTATAGA
hPSEN1-F19	Forward primer (5'-3')	18852	TGAGGGCTTATACATTGGTGT
hPSEN1-R19	Sequencing primer	19186	CAGCTTTGTTGGTACACTCT
hPSEN1-R20	Sequencing primer	19486	GTCTCAACAATTACGTATTT
hPSEN1-R21	Sequencing primer	19934	TGGGTCAAGCGATTCTCAT
hPSEN1-R22	Reverse primer (5'-3')	19964	AGATCTCGGCTCACTGCAAC
<i>Primer on 19q13.12 (PSENEN locus)</i>			
hPEN2-F1	Forward primer (5'-3')	4817	CCAGGTCTGGCTGCTCTTAC
hPEN2-F2	Sequencing primer	4841	CTTCCGTTGCTTAGGAGCAC
hPEN2-R1	Sequencing primer	5495	TTCGACAGTCTTCACTCTCT
hPEN2-R2	Reverse primer (5'-3')	5552	CCAGCTTCTCTATTCTCAG
hPEN2-F3	Forward primer (5'-3')	5665	ATCCCAAAGAGGACCCAGAT
hPEN2-R3	Sequencing primer	6691	TAGATCTCGGTGGGAGTTGG
hPEN2-F4	Sequencing primer	5747	CTAGGCCGATCCTACCACTG
hPEN2-R4	Reverse primer (5'-3')	6842	CCATTGTGCACACGCTTTGG

Table SI. Contd.

Primer name	Role of primer	Position Mb (Ensembl GRCh37)	Primer sequence
<i>Primer on 1q23.2 (NCSTN locus)</i>			
hNCT-F1	Forward primer (5'-3')	4815	TCCTGACATCCAACCTCCAT
hNCT-Fn1	Sequencing primer	4872	GCTCTTGGTCTCGAATTTGG
hNCT-R1	Reverse primer (5'-3')	5281	GCAGGAACCCAGAAGGGAGACA
hNCT-F2	Forward primer (5'-3')	6295	TGTGTGCCCAAGAAATCAGA
hNCT-Rn2	Sequencing primer	6567	CAATGTCCACAAACATGAATCC
hNCT-R2	Reverse primer (5'-3')	6621	TCTCCTAAGCAGGACATGGA
hNCT-F3	Forward primer (5'-3')	10603	GGTGCCTGTATTACCCAAA
hNCT-Rn3	Sequencing primer	10925	CAGCCAAGGGAAGTTTTCAC
hNCT-R3	Reverse primer (5'-3')	10974	ACCTTTCCTTCTGAGGACCA
hNCT-F4	Forward primer (5'-3')	11182	CCCCTAGTCCCCATTGT
hNCT-Fn4	Sequencing primer	11213	GGCAGAATGTCAGGCTGTCT
hNCT-Fn4-2	Sequencing primer	11752	AAAGATTCTTCTGCCGTCACC
hNCT-R4	Reverse primer (5'-3')	12044	GGACTACGTGCACACCCAC
hNCT-F5	Forward primer (5'-3')	12829	ATGTCTCCGAAAAGGGTGTG
hNCT-Rn5	Sequencing primer	13141	CTGGTCCACTCTCCCTCTG
hNCT-R5	Reverse primer (5'-3')	13203	ATGCAGAGCTCCTTCATGGT
hNCT-F6	Forward primer (5'-3')	13283	AGAGAAGCCAACTCGGACT
hNCT-Fn6	Sequencing primer	13337	GGCACTGGTCAGAGATTCC
hNCT-Rn6	Sequencing primer	14002	GCTGAGGTCTTCTCAACCA
hNCT-R6	Reverse primer (5'-3')	14044	CACATCCAGAAGCTCTGTGC
hNCT-F7	Forward primer (5'-3')	14555	CGAGGCTCTCCTAACCCCTT
hNCT-Rn7	Sequencing primer	14971	AGGAAATGAGGGGAGATGCTCAG
hNCT-R7	Reverse primer (5'-3')	15071	CACCCAAATCCAATCCTGTCT
hNCT-F8	Forward primer (5'-3')	15698	CCAAAAGGCTTGAGGGATAA
hNCT-Rn8	Sequencing primer	16074	CAGTGACCTTCTCCAGAC
hNCT-R8	Reverse primer (5'-3')	16107	GTTCTGGAGGGGTAGTGTG
hNCT-F9	Forward primer (5'-3')	17216	TCCCTGTTCTCCACACTTC
hNCT-Fn9	Sequencing primer	17261	TCACCCCTTCTCTGATGC
hNCT-R9	Reverse primer (5'-3')	17741	ACACTAGGGCAAGGGAGGA
hNCT-F10	Forward primer (5'-3')	17880	TATCTGGCCAGTCTGGTTCC
hNCT-Rn10	Sequencing primer	18300	AGACCAAAGGGAAGGGAAGA
hNCT-Rn10-2	Sequencing primer	18579	CTGCATCTCCACCTCTCC
hNCT-R10	Reverse primer (5'-3')	18598	AACACCCAATTGCTGAGGAC
hNCT-F11	Forward primer (5'-3')	18653	AAAGGGACAGCAGCCAGTTA
hNCT-Fn11	Sequencing primer	18729	GATCACCCCTAGCCGTGTGT
hNCT-Rn11	Sequencing primer	18999	ACAGATCCCTGCCACCTATG
hNCT-R11	Reverse primer (5'-3')	19068	GCTACAAATGTGGGGCAAAT
hNCT-F12	Forward primer (5'-3')	19729	GGAGAGATGTTGCCCATGAT
hNCT-Fn12	Sequencing primer	19736	TGTTGCCCATGATTATTCCA
hNCT-Rn12	Sequencing primer	20715	CCAGTCTAGGCTCGCTGAAC
hNCT-R12	Reverse primer (5'-3')	20757	CTGGAGCCCAAGATGATAGC