

Additional file 10: Table S4

Most frequent mutant alleles generated by BE3-gMH and Cas9-gMH treatment in hPCK9-KI mice.

Alleles	#Reads	Protein Sequence	Type	Outcome	Percentage
ATTGAGGAAGACTCCTTTGTCTTCGCCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	639 466	Ile Glu Glu Asp Ser Phe Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg Ile Ile	Wild type	Wild type	70,895
ATTGAGGAAGACTCCTTTGTCTTCGCCCAG--GCATCCCATGGAACCTGGAGCGAATTATCC	30 886	Ile Glu Glu Asp Ser Phe Val Phe Ala Gln Ala Ser His Gly Thr Trp Ser Glu Leu Ser	Frameshift deletion	Frameshift Mutation	3,424
ATTGAGGAAGACTCCTTTGTCTTCGCCCAG--CATCCCATGGAACCTGGAGCGAATTATCC	28 789	Ile Glu Glu Asp Ser Phe Val Phe Ala Gln Thr Ser His Gly Thr Trp Ser Glu Leu Ser	Frameshift deletion	Frameshift Mutation	3,192
ATTGAGGAAGACTCCTTTGTCTTCGCCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	18 394	Ile Glu Glu Asp Ser Phe Val Phe Ala Gln Lys His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift insertion	Frameshift Mutation	2,039
ATTGAGGAAGACTCCTTTGTCTTCGCCCAGAGGCATCCCATGGAACCTGGAGCGAATTATCC	13 238	Ile Glu Glu Asp Ser Phe Val Phe Ala Gln Arg His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift insertion	Frameshift Mutation	1,468
ATTGAGGAAGACTCCTTTGTCTTCGCCCAGATGCATCCCATGGAACCTGGAGCGAATTATCC	9 361	Ile Glu Glu Asp Ser Phe Val Phe Ala Gln Met His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift insertion	Frameshift Mutation	1,038
ATTGAGGAAGACTCCTTTGTCTTCGCCC--AGCATCCCATGGAACCTGGAGCGAATTATCC	9 260	Ile Glu Glu Asp Ser Phe Val Phe Ala Gln His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift deletion	Frameshift Mutation	1,027
ATTGAGGAAGACTCCTTTGTCTTCGCCCA-----GAACCTGGAGCGAATTATCC	4 404	Ile Glu Glu Asp Ser Phe Val Phe Ala Gln Asn Leu Glu Arg Ile Ile	Inframe deletion	Inframe Mutation	0,488

Cas9-gMH (#2_mPcsk9)

Alleles	#Reads	Protein Sequence	Type	Outcome	Percentage
ATTGAGGAAGACTCCTTTGTCTTCGCCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	405 587	Ile Glu Glu Asp Ser Phe Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg Ile Ile	Wild type	Wild type	74,565
ATTGAGGAAGACTCCTTTGTCTTCGCCCAG--GCATCCCATGGAACCTGGAGCGAATTATCC	16 414	Ile Glu Glu Asp Ser Phe Val Phe Ala Gln Thr Ser His Gly Thr Trp Ser Glu Leu Ser	Frameshift deletion	Frameshift Mutation	3,018
ATTGAGGAAGACTCCTTTGTCTTCGCCCAG--CATCCCATGGAACCTGGAGCGAATTATCC	14 968	Ile Glu Glu Asp Ser Phe Val Phe Ala Gln Ala Ser His Gly Thr Trp Ser Glu Leu Ser	Frameshift deletion	Frameshift Mutation	2,752
ATTGAGGAAGACTCCTTTGTCTTCGCCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	7 914	Ile Glu Glu Asp Ser Phe Val Phe Ala Gln Lys His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift insertion	Frameshift Mutation	1,455
ATTGAGGAAGACTCCTTTGTCTTCGCCCAGAGGCATCCCATGGAACCTGGAGCGAATTATCC	7 115	Ile Glu Glu Asp Ser Phe Val Phe Ala Gln Arg His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift insertion	Frameshift Mutation	1,308
ATTGAGGAAGACTCCTTTGTCTTCGCCC--AGCATCCCATGGAACCTGGAGCGAATTATCC	7 088	Ile Glu Glu Asp Ser Phe Val Phe Ala Gln His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift deletion	Frameshift Mutation	1,303
ATTGAGGAAGACTCCTTTGTCTTCGCCCAGATGCATCCCATGGAACCTGGAGCGAATTATCC	4 151	Ile Glu Glu Asp Ser Phe Val Phe Ala Gln Met His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift insertion	Frameshift Mutation	0,763
ATTGAGGAAGACTCCTTTGTCTTCGCCCAG--ATCCCATGGAACCTGGAGCGAATTATCC	2 263	Ile Glu Glu Asp Ser Phe Val Phe Ala Gln Ile Pro Trp Asn Leu Glu Arg Ile Ile	Inframe deletion	Inframe Mutation	0,416

Cas9-gMH (#3_mPcsk9)

Alleles	#Reads	Protein Sequence	Type	Outcome	Percentage
GAGGAAGACTCCTTTGTCTTCGCCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	241 998	Glu Glu Asp Ser Phe Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg Ile Ile	Wild type	Wild type	86,277
GAGGAAGACTCCTTTGTCTTCGCCCAG--GCATCCCATGGAACCTGGAGCGAATTATCC	2 771	Glu Glu Asp Ser Phe Val Phe Ala Gln Thr Ser His Gly Thr Trp Ser Glu Leu Ser	Frameshift deletion	Frameshift Mutation	0,988
GAGGAAGACTCCTTTGTCTTCGCCCAG--GCATCCCATGGAACCTGGAGCGAATTATCC	2 533	Glu Glu Asp Ser Phe Val Phe Ala Gln Ala Ser His Gly Thr Trp Ser Glu Leu Ser	Frameshift deletion	Frameshift Mutation	0,903
GAGGAAGACTCCTTTGTCTTCGCCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	1 658	Glu Glu Asp Ser Phe Val Phe Ala Gln Lys His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift insertion	Frameshift Mutation	0,591
GAGGAAGACTCCTTTGTCTTCGCCC--AGCATCCCATGGAACCTGGAGCGAATTATCC	1 199	Glu Glu Asp Ser Phe Val Phe Ala Gln His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift deletion	Frameshift Mutation	0,427
GAGGAAGACTCCTTTGTCTTCGCCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	1 092	Glu Glu Asp Ser Phe Val Phe Ala Gln Ser Ile Gln Trp Asn Leu Glu Arg Ile Ile	Substitution, Pro>Gln	Missense Mutation	0,389
GAGGAAGACTCCTTTGTCTTCGCCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	1 075	Glu Glu Asp Ser Phe Val Phe Ala Lys Ser Ile Pro Trp Asn Leu Glu Arg Ile Ile	Substitution, Gln>Lys	Missense Mutation	0,383
GAGGAAGACTCCTTTGTCTTCGCCCAGAGGCATCCCATGGAACCTGGAGCGAATTATCC	1 071	Glu Glu Asp Ser Phe Val Phe Ala Gln Arg His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift insertion	Frameshift Mutation	0,382
GAGGAAGACTCCTTTGTCTTCGCCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	874	Glu Glu Asp Ser Phe Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Stp	Substitution, Glu>Stp	Nonsense Mutation, Knockout	0,312

Cas9-gMH (#4_mPcsk9)

Alleles	#Reads	Protein Sequence	Type	Outcome	Percentage
GAGGAAGACTCCTTTGTCTTCGCCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	352 427	Glu Glu Asp Ser Phe Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg Ile Ile	Wild type	Wild type	83,519
GAGGAAGACTCCTTTGTCTTCGCCCAG--GCATCCCATGGAACCTGGAGCGAATTATCC	8 972	Glu Glu Asp Ser Phe Val Phe Ala Gln Thr Ser His Gly Thr Trp Ser Glu Leu Ser	Frameshift deletion	Frameshift Mutation	2,126
GAGGAAGACTCCTTTGTCTTCGCCCAG--GCATCCCATGGAACCTGGAGCGAATTATCC	7 546	Glu Glu Asp Ser Phe Val Phe Ala Gln Ala Ser His Gly Thr Trp Ser Glu Leu Ser	Frameshift deletion	Frameshift Mutation	1,788
GAGGAAGACTCCTTTGTCTTCGCCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	4 135	Glu Glu Asp Ser Phe Val Phe Ala Gln Lys His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift insertion	Frameshift Mutation	0,980
GAGGAAGACTCCTTTGTCTTCGCCC--AGCATCCCATGGAACCTGGAGCGAATTATCC	2 889	Glu Glu Asp Ser Phe Val Phe Ala Gln His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift deletion	Frameshift Mutation	0,685
GAGGAAGACTCCTTTGTCTTCGCCCAGAGGCATCCCATGGAACCTGGAGCGAATTATCC	2 056	Glu Glu Asp Ser Phe Val Phe Ala Gln Arg His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift insertion	Frameshift Mutation	0,487
GAGGAAGACTCCTTTGTCTTCGCCCAGATGCATCCCATGGAACCTGGAGCGAATTATCC	1 510	Glu Glu Asp Ser Phe Val Phe Ala Gln Met His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift insertion	Frameshift Mutation	0,358
GAGGAAGACTCCTTTGTCTTCGCCCAG--ATCCCATGGAACCTGGAGCGAATTATCC	979	Glu Glu Asp Ser Phe Val Phe Ala Gln Ile Pro Trp Asn Leu Glu Arg Ile Ile	Inframe deletion	Inframe Mutation	0,232
GAGGAAGACTCCTTTGTCTTCGCC-----CCCATGGAACCTGGAGCGAATTATCC	796	Glu Glu Asp Ser Phe Val Phe Ala His Gly Thr Trp Ser Glu Leu Ser	Frameshift deletion	Frameshift Mutation	0,189
GAGGAAGACTCCTTTGTCTTCGCCCAG--ATCCCATGGAACCTGGAGCGAATTATCC	642	Glu Glu Asp Ser Phe Val Phe Ala Gln Asn Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift deletion	Frameshift Mutation	0,152

Cas9-gMH (#5_mPcsk9)

Alleles	#Reads	Protein Sequence	Type	Outcome	Percentage
GAGGAAGACTCCTTTGTCCTCGCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	141 381	Glu Glu Asp Ser Phe Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg Ile Ile	Wild type	Wild type	61,838
GAGGAAGACTCCTTTGTCCTCGCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	13 811	Glu Glu Asp Ser Phe Val Phe Ala Gln Thr Ser His Gly Thr Trp Ser Glu Leu Ser	Frameshift deletion	Frameshift Mutation	6,041
GAGGAAGACTCCTTTGTCCTCGCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	10 038	Glu Glu Asp Ser Phe Val Phe Ala Gln Ala Ser His Gly Thr Trp Ser Glu Leu Ser	Frameshift deletion	Frameshift Mutation	4,390
GAGGAAGACTCCTTTGTCCTCGCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	5 480	Glu Glu Asp Ser Phe Val Phe Ala Gln Lys His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift insertion	Frameshift Mutation	2,397
GAGGAAGACTCCTTTGTCCTCGCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	4 496	Glu Glu Asp Ser Phe Val Phe Ala Gln His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift deletion	Frameshift Mutation	1,966
GAGGAAGACTCCTTTGTCCTCGCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	3 242	Glu Glu Asp Ser Phe Val Phe Ala Gln Arg His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift insertion	Frameshift Mutation	1,418
GAGGAAGACTCCTTTGTCCTCGCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	2 346	Glu Glu Asp Ser Phe Val Phe Ala Gln Met His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift insertion	Frameshift Mutation	1,026
GAGGAAGACTCCTTTGTCCTCGCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	1 231	Glu Glu Asp Ser Phe Val Phe Ala Gln Ile Pro Trp Asn Leu Glu Arg Ile Ile	Inframe deletion	Inframe Mutation	0,538
GAGGAAGACTCCTTTGTCCTCGCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	1 042	Glu Glu Asp Ser Phe Val Phe Ala His Gly Thr Trp Ser Glu Leu Ser	Frameshift deletion	Frameshift Mutation	0,456
GAGGAAGACTCCTTTGTCCTCGCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	906	Glu Glu Asp Ser Phe Val Phe Ala Gln Asn Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift deletion	Frameshift Mutation	0,396

Cas9-gMH (#6_mPcsk9)

Alleles	#Reads	Protein Sequence	Type	Outcome	Percentage
GAGGAAGACTCCTTTGTCCTCGCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	158 653	Glu Glu Asp Ser Phe Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg Ile Ile	Wild type	Wild type	74,878
GAGGAAGACTCCTTTGTCCTCGCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	6 436	Glu Glu Asp Ser Phe Val Phe Ala Gln Thr Ser His Gly Thr Trp Ser Glu Leu Ser	Frameshift deletion	Frameshift Mutation	3,038
GAGGAAGACTCCTTTGTCCTCGCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	6 042	Glu Glu Asp Ser Phe Val Phe Ala Gln Ala Ser His Gly Thr Trp Ser Glu Leu Ser	Frameshift deletion	Frameshift Mutation	2,852
GAGGAAGACTCCTTTGTCCTCGCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	2 594	Glu Glu Asp Ser Phe Val Phe Ala Gln Lys His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift insertion	Frameshift Mutation	1,224
GAGGAAGACTCCTTTGTCCTCGCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	2 290	Glu Glu Asp Ser Phe Val Phe Ala Gln His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift deletion	Frameshift Mutation	1,081
GAGGAAGACTCCTTTGTCCTCGCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	1 703	Glu Glu Asp Ser Phe Val Phe Ala Gln Arg His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift insertion	Frameshift Mutation	0,804
GAGGAAGACTCCTTTGTCCTCGCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	851	Glu Glu Asp Ser Phe Val Phe Ala Gln Met His Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift insertion	Frameshift Mutation	0,402
GAGGAAGACTCCTTTGTCCTCGCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	801	Glu Glu Asp Ser Phe Val Phe Ala Gln Ser Ile Gln Trp Asn Leu Glu Arg Ile Ile	Substitution, Pro>Gln	Missense Mutation	0,378
GAGGAAGACTCCTTTGTCCTCGCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	693	Glu Glu Asp Ser Phe Val Phe Ala Lys Ser Ile Pro Trp Asn Leu Glu Arg Ile Ile	Substitution, Gln>Lys	Missense Mutation	0,327
GAGGAAGACTCCTTTGTCCTCGCCAGAGCATCCCATGGAACCTGGAGCGAATTATCC	683	Glu Glu Asp Ser Phe Val Phe Ala Gln Asn Pro Met Glu Pro Gly Ala Asn Tyr	Frameshift deletion	Frameshift Mutation	0,322

Cas9-gMH (#1_ hPCKSK9)

Alleles	#Reads	Protein Sequence	Type	Outcome	Percentage
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGAGCATCCCGTGGAACTGGAGCGGATTACCCCTC	154 977	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg Ile Thr Pro	Wild type	Wild type	68,920
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAG--GCATCCCGTGGAACTGGAGCGGATTACCCCTC	15 725	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ala Ser Arg Gly Thr Trp Ser Gly Leu Pro Leu	Frameshift deletion	Frameshift Mutation	6,993
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAG--CATCCCGTGGAACTGGAGCGGATTACCCCTC	10 529	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Thr Ser Arg Gly Thr Trp Ser Gly Leu Pro Leu	Frameshift deletion	Frameshift Mutation	4,682
TACATCGAGGAGGACTCCTCTGTCTTTGGCC--AGCATCCCGTGGAACTGGAGCGGATTACCCCTC	5 519	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift deletion	Frameshift Mutation	2,454
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGAAGCATCCCGTGGAACTGGAGCGGATTACCCCTC	5 062	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Lys His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift insertion	Frameshift Mutation	2,251
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGAGCATCCCGTGGAACTGGAGCGGATTACCCCTC	2 467	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Arg His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift insertion	Frameshift Mutation	1,097
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGATGCATCCCGTGGAACTGGAGCGGATTACCCCTC	1812	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Met His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift insertion	Frameshift Mutation	8,086
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAG--ATCCCGTGGAACTGGAGCGGATTACCCCTC	1 038	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Asn Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift deletion	Frameshift Mutation	0,462
TACATCGAGGAGGACTCCTCTGTCTTT-----GCATCCCGTGGAACTGGAGCGGATTACCCCTC	981	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Ser Arg Gly Thr Trp Ser Gly Leu Pro Leu	Frameshift deletion	Frameshift Mutation	0,436
TACATCGAGGAGGACTCCTCTGTCTTT-----GCATCCCGTGGAACTGGAGCGGATTACCCCTC	885	Tyr Ile Glu Glu Asp Ser Ser Val Leu His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift deletion	Frameshift Mutation	0,394

Cas9-gMH (#2_ hPCKSK9)

Alleles	#Reads	Protein Sequence	Type	Outcome	Percentage
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGAGCATCCCGTGGAACTGGAGCGGATTACCCCTC	275 055	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg Ile Thr Pro	Wild type	Wild type	73,946
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAG--GCATCCCGTGGAACTGGAGCGGATTACCCCTC	21 750	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ala Ser Arg Gly Thr Trp Ser Gly Leu Pro Leu	Frameshift deletion	Frameshift Mutation	5,847
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAG--CATCCCGTGGAACTGGAGCGGATTACCCCTC	17 804	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Thr Ser Arg Gly Thr Trp Ser Gly Leu Pro Leu	Frameshift deletion	Frameshift Mutation	4,786
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGAGCATCCCGTGGAACTGGAGCGGATTACCCCTC	8 315	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Lys His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift insertion	Frameshift Mutation	2,235
TACATCGAGGAGGACTCCTCTGTCTTTGGCC--AGCATCCCGTGGAACTGGAGCGGATTACCCCTC	5 972	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift deletion	Frameshift Mutation	1,606
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGATGCATCCCGTGGAACTGGAGCGGATTACCCCTC	2 587	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Met His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift insertion	Frameshift Mutation	0,695
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGAGCATCCCGTGGAACTGGAGCGGATTACCCCTC	2 241	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Arg His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift insertion	Frameshift Mutation	0,602
-----GCATCCCGTGGAACTGGAGCGGATTACCCCTC	1 806	Ala Ser Arg Gly Thr Trp Ser Gly Leu Pro Leu	Frameshift deletion	Frameshift Mutation	0,486
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAG--ATCCCGTGGAACTGGAGCGGATTACCCCTC	1 587	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ile Pro Trp Asn Leu Glu Arg Ile Thr Pro	Inframe deletion	Inframe Mutation	0,427
TACATCGAGGAGGACTCCTCTGT-----GCATCCCGTGGAACTGGAGCGGATTACCCCTC	1 344	Tyr Ile Glu Glu Asp Ser Ser Val His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift deletion	Frameshift Mutation	0,361

Cas9-gMH (#3_ hPCKSK9)

Alleles	#Reads	Protein Sequence	Type	Outcome	Percentage
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGAGCATCCCGTGGAACTGGAGCGGATTACCCCTC	263 766	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg Ile Thr Pro	Wild type	Wild type	89,767
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAG--GCATCCCGTGGAACTGGAGCGGATTACCCCTC	4 852	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ala Ser Arg Gly Thr Trp Ser Gly Leu Pro Leu	Frameshift deletion	Frameshift Mutation	1,651
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAG--CATCCCGTGGAACTGGAGCGGATTACCCCTC	3 136	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Thr Ser Arg Gly Thr Trp Ser Gly Leu Pro Leu	Frameshift deletion	Frameshift Mutation	1,067
TACATCGAGGAGGACTCCTCTGTCTTTGGCC--AGCATCCCGTGGAACTGGAGCGGATTACCCCTC	1 643	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift deletion	Frameshift Mutation	0,559
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGAGCATCCCGTGGAACTGGAGCGGATTACCCCTC	1 418	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Lys His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift insertion	Frameshift Mutation	0,483
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGAGCATCCCGTGGAACTGGAGCGGATTACCCCTC	672	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg Ile Thr Thr	Substitution, Pro>Thr	Missense Mutation	0,229
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGAGCATCCCGTGGAACTGGAGCGGATTACCCCTC	651	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ser Ile Gln Trp Asn Leu Glu Arg Ile Thr Pro	Substitution, Pro>Gln	Missense Mutation	0,222
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGAGCATCCCGTGGAACTGGAGCGGATTACCCCTC	598	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg Ile Thr His	Substitution, Pro>His	Missense Mutation	0,204
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGAGCATCCCGTGGAACTGGAGCGGATTACCCCTC	494	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Lys Ser Ile Pro Trp Asn Leu Glu Arg Ile Thr Pro	Substitution, Gln>Lys	Missense Mutation	0,168
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGAGCATCCCGTGGAACTGGAGCGGATTACCCCTC	486	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Arg His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift insertion	Frameshift Mutation	0,165

Cas9-gMH (#4_ hPCKSK9)

Alleles	#Reads	Protein Sequence	Type	Outcome	Percentage
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGAGCATCCCGTGGAACTGGAGCGGATTACCCCTC	288 062	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg Ile Thr Pro	Wild type	Wild type	84,576
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAG--GCATCCCGTGGAACTGGAGCGGATTACCCCTC	9 185	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ala Ser Arg Gly Thr Trp Ser Gly Leu Pro Leu	Frameshift deletion	Frameshift Mutation	2,697
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAG--CATCCCGTGGAACTGGAGCGGATTACCCCTC	6 894	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Thr Ser Arg Gly Thr Trp Ser Gly Leu Pro Leu	Frameshift deletion	Frameshift Mutation	2,024
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGAGCATCCCGTGGAACTGGAGCGGATTACCCCTC	2 485	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Lys His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift insertion	Frameshift Mutation	0,730
TACATCGAGGAGGACTCCTCTGTCTTTGGCC--AGCATCCCGTGGAACTGGAGCGGATTACCCCTC	2 407	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift deletion	Frameshift Mutation	0,707
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGAGCATCCCGTGGAACTGGAGCGGATTACCCCTC	1 040	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg Ile Thr Thr	Substitution, Pro>Thr	Missense Mutation	0,305
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGAGCATCCCGTGGAACTGGAGCGGATTACCCCTC	937	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ser Ile Gln Trp Asn Leu Glu Arg Ile Thr Pro	Substitution, Pro>Gln	Missense Mutation	0,275
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGAGCATCCCGTGGAACTGGAGCGGATTACCCCTC	873	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg Ile Thr His	Substitution, Pro>His	Missense Mutation	0,256
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGATGCATCCCGTGGAACTGGAGCGGATTACCCCTC	852	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Met His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift insertion	Frameshift Mutation	0,250
TACATCGAGGAGGACTCCTCTGTCTTTGGCCAGAGCATCCCGTGGAACTGGAGCGGATTACCCCTC	816	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Lys Ser Ile Pro Trp Asn Leu Glu Arg Ile Thr Pro	Substitution, Gln>Lys	Missense Mutation	0,240

Cas9-gMH (#5_hPCSK9)

Alleles	#Reads	Protein Sequence	Type	Outcome	Percentage
TACATCGAGGAGGACTCCTCTGTCTTTGCCAGAGCATCCCGTGAACCTGGAGCGGATTACCCCTC	227 333	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg Ile Thr Pro	Wild type	Wild type	68,548
TACATCGAGGAGGACTCCTCTGTCTTTGCCAG--GCATCCCGTGAACCTGGAGCGGATTACCCCTC	22 352	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ala Ser Arg Gly Thr Trp Ser Gly Leu Pro Leu	Frameshift deletion	Frameshift Mutation	6,740
TACATCGAGGAGGACTCCTCTGTCTTTGCCAG--GCATCCCGTGAACCTGGAGCGGATTACCCCTC	17 805	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Thr Ser Arg Gly Thr Trp Ser Gly Leu Pro Leu	Frameshift deletion	Frameshift Mutation	5,369
TACATCGAGGAGGACTCCTCTGTCTTTGCCAG--AGCATCCCGTGAACCTGGAGCGGATTACCCCTC	7 095	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift deletion	Frameshift Mutation	2,139
TACATCGAGGAGGACTCCTCTGTCTTTGCCAGAGCATCCCGTGAACCTGGAGCGGATTACCCCTC	6796	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Lys His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift insertion	Frameshift Mutation	2,049
TACATCGAGGAGGACTCCTCTGTCTTTGCCAGAGCATCCCGTGAACCTGGAGCGGATTACCCCTC	2 100	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Arg His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift insertion	Frameshift Mutation	0,633
TACATCGAGGAGGACTCCTCTGTCTTTGCCAGAGCATCCCGTGAACCTGGAGCGGATTACCCCTC	1 775	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Met His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift insertion	Frameshift Mutation	0,535
TACATCGAGGAGGACTCCTCTGTCTTTGCCAGAGCATCCCGTGAACCTGGAGCGGATTACCCCTC	923	Tyr Ile Glu Glu Asp Ser Ser Val His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift deletion	Frameshift Mutation	0,278
TACATCGAGGAGGACTCCTCTGTCTTTGCCAG---ATCCCGTGAACCTGGAGCGGATTACCCCTC	795	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ile Pro Trp Asn Leu Glu Arg Ile Thr Pro	Inframe deletion	Inframe Mutation	0,240
TACATCGAGGAGGACTCCTCTGTCTTTGCCAGAGCATCCCGTGAACCTGGAGCGGATTACCACTC	734	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg Ile Thr Thr	Substitution, Pro>Thr	Missense Mutation	0,221

Cas9-gMH (#6_hPCSK9)

Alleles	#Reads	Protein Sequence	Type	Outcome	Percentage
TACATCGAGGAGGACTCCTCTGTCTTTGCCAGAGCATCCCGTGAACCTGGAGCGGATTACCCCTC	313 218	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg Ile Thr Pro	Wild type	Wild type	80,670
TACATCGAGGAGGACTCCTCTGTCTTTGCCAG--GCATCCCGTGAACCTGGAGCGGATTACCCCTC	17 531	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ala Ser Arg Gly Thr Trp Ser Gly Leu Pro Leu	Frameshift deletion	Frameshift Mutation	4,515
TACATCGAGGAGGACTCCTCTGTCTTTGCCAG--GCATCCCGTGAACCTGGAGCGGATTACCCCTC	14 899	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Thr Ser Arg Gly Thr Trp Ser Gly Leu Pro Leu	Frameshift deletion	Frameshift Mutation	3,837
TACATCGAGGAGGACTCCTCTGTCTTTGCCAGAGCATCCCGTGAACCTGGAGCGGATTACCCCTC	5 471	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Lys His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift insertion	Frameshift Mutation	1,409
TACATCGAGGAGGACTCCTCTGTCTTTGCCAG--AGCATCCCGTGAACCTGGAGCGGATTACCCCTC	2828	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift deletion	Frameshift Mutation	0,728
TACATCGAGGAGGACTCCTCTGTCTTTGCCAGAGCATCCCGTGAACCTGGAGCGGATTACCCCTC	1 024	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Arg His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift insertion	Frameshift Mutation	0,264
TACATCGAGGAGGACTCCTCTGTCTTTGCCAGAGCATCCCGTGAACCTGGAGCGGATTACCCCTC	906	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Met His Pro Val Glu Pro Gly Ala Asp Tyr Pro	Frameshift insertion	Frameshift Mutation	0,233
TACATCGAGGAGGACTCCTCTGTCTTTGCCAGAGCATCCCGTGAACCTGGAGCGGATTACCCCTC	780	Tyr Ile Glu Glu Asp Ser	Frameshift deletion	Frameshift Mutation	0,201
TACATCGAGGAGGACTCCTCTGTCTTTGCCAGAGCATCCCGTGAACCTGGAGCGGATTACCACTC	673	Tyr Ile Glu Glu Asp Ser Ser Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg Ile Thr Thr	Substitution, Pro>Thr	Missense Mutation	0,173
-----GCATCCCGTGAACCTGGAGCGGATTACCCCTC	619	Ala Ser Arg Gly Thr Trp Ser Gly Leu Pro Leu	Frameshift deletion	Frameshift Mutation	0,159

