

# nhs

## Genomic Sequence



## Coding Sequence



For help interpreting these results, view the [PARSENP Introduction](#) page.

#	View On Sequence	Nucleotide Change	Effect	Restriction Enzyme Differences from REBASE		Description	Zygoty
				Gained in Variant	Lost from Reference		
1	<a href="#">G C</a>	T4102A	I76K			7724	Homo
2	<a href="#">G C</a>	C4111T	T79I			5027	Homo
3	<a href="#">G C</a>	G4125T	G84C	<a href="#">ApoI</a>	<a href="#">BamI</a> , <a href="#">BsiYI</a> , <a href="#">CfrI</a> , <a href="#">CviJI</a> , <a href="#">HaeIII</a>	7109	Homo
4	<a href="#">G C</a>	T4136A	D87E	<a href="#">PpiI</a>	<a href="#">BinI</a> , <a href="#">DpnI</a> , <a href="#">MboI</a> , <a href="#">XhoII</a>	1225	Homo
5	<a href="#">G C</a>	T4136G	D87E	<a href="#">AluI</a> , <a href="#">BseRI</a> , <a href="#">CviJI</a>	<a href="#">BinI</a> , <a href="#">DpnI</a> , <a href="#">MboI</a> , <a href="#">XhoII</a>	4507	Homo
6	<a href="#">G C</a>	C4215T	R114C	<a href="#">MslI</a> , <a href="#">NlaIII</a>	<a href="#">BsaAI</a> , <a href="#">MaeII</a>	2643	Homo
7	<a href="#">G C</a>	C4215T	R114C	<a href="#">MslI</a> , <a href="#">NlaIII</a>	<a href="#">BsaAI</a> , <a href="#">MaeII</a>	7777	Homo
8	<a href="#">G C</a>	T4282A	I136K			8690	Homo
9	<a href="#">G C</a>	C4487A	D204E	<a href="#">Ksp632I</a> , <a href="#">MboII</a> , <a href="#">TspDTI</a>		6711	Homo
10	<a href="#">G C</a>	C4510T	T212M	<a href="#">TspRI</a>		465	Homo
11	<a href="#">G C</a>	T4513A	I213N		<a href="#">BinI</a> , <a href="#">DpnI</a> , <a href="#">MboI</a>	3477	Homo
12	<a href="#">G C</a>	C4524T	Q217*			4622	Homo
13	<a href="#">G C</a>	T4646C	S257=	<a href="#">MmeI</a>		7539	Homo
14	<a href="#">G C</a>	C4709T	D278=	<a href="#">BinI</a> , <a href="#">DpnI</a> , <a href="#">MboI</a>	<a href="#">AsuI</a> , <a href="#">AvaII</a> , <a href="#">BsiYI</a>	7312	Homo
15	<a href="#">G C</a>	G4750A	G292D		<a href="#">CspCI</a>	3899	Homo
16	<a href="#">G C</a>	T4751C	G292=			384	Homo
17	<a href="#">G C</a>	G4778A	T301=		<a href="#">AatII</a> , <a href="#">AcyI</a> , <a href="#">Hpy99I</a> , <a href="#">MaeII</a> , <a href="#">MmeI</a>	5841	Homo
18	<a href="#">G C</a>	T4790A	I305=		<a href="#">XmnI</a>	2883	Homo

19	<a href="#">G</a> <a href="#">C</a>	C4812T	L313F			8623	Homo
20	<a href="#">G</a> <a href="#">C</a>	G4901A	P342=	<a href="#">PflMI</a>	<a href="#">BciVI</a> , <a href="#">TspGWI</a>	2402	Homo
21	<a href="#">G</a> <a href="#">C</a>	A4938T	R355*			3452	Homo
22	<a href="#">G</a> <a href="#">C</a>	T5189A	D438E	<a href="#">CviJI</a>	<a href="#">SfaNI</a>	7913	Homo
23	<a href="#">G</a> <a href="#">C</a>	T5253A	Y460N			8416	Homo
24	<a href="#">G</a> <a href="#">C</a>	T5253A	Y460N			8477	Homo
25	<a href="#">G</a> <a href="#">C</a>	C5298T	Q475*	<a href="#">MseI</a>		8432	Homo
26	<a href="#">G</a> <a href="#">C</a>	A5320T	H482L	<a href="#">DdeI</a>		8417	Homo
27	<a href="#">G</a> <a href="#">C</a>	C5358T	P495S	<a href="#">HphI</a> , <a href="#">MnlI</a>		266	Homo
28	<a href="#">G</a> <a href="#">C</a>	C5411A	P512=	<a href="#">MmeI</a>		8067	Homo
29	<a href="#">G</a> <a href="#">C</a>	G5516A	L547=	<a href="#">MaeI</a>	<a href="#">Eco57MI</a> , <a href="#">GsuI</a> , <a href="#">NspBII</a> , <a href="#">PvuII</a>	6623	Homo
30	<a href="#">G</a> <a href="#">C</a>	C5663T	D596=	<a href="#">AhaIII</a>		4580	Homo
31	<a href="#">G</a> <a href="#">C</a>	C5791A	T639K			8735	Homo
32	<a href="#">G</a> <a href="#">C</a>	T5795G	T640=			4037	Homo
33	<a href="#">G</a> <a href="#">C</a>	G5820A	E649K	<a href="#">CviRI</a>		8646	Homo
34	<a href="#">G</a> <a href="#">C</a>	A5837C	S654=		<a href="#">HphI</a>	7466	Homo
35	<a href="#">G</a> <a href="#">C</a>	C5933T	N686=			5032	Homo
36	<a href="#">G</a> <a href="#">C</a>	T6046G	I724S	<a href="#">AccI</a> , <a href="#">MaeI</a> , <a href="#">MjaIV</a> , <a href="#">SnaI</a>		6143	Homo

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No [protein homology model](#) was submitted. You may add one using any or all of the fields below.

**Blocks Families:**

**Blocks File:**

**Sequence Alignment:**

**-OR-**

## Genomic Sequence

```

agattaattgatttaaatgtggttttattgtggctgcagcattgcatttggcatgaaaaagccccagtggttt      0
                                                                    72

                                E  E  K  V  A  R  T  Q  Q  P  L      11
atgagtgtgagaaacatggggaggagaa gaa gaa aaa gtg gct cgc acc caa cag cct ctc      133
    
```

T C L V L F A G V G F D R E A S V R	29
aca tgt ctg gtg ctc ttt gca ggg gtt ggg ttc gac aga gag gcc agt gta cgc	187
C S L V H S Q S V L Q R R R K L R R	47
tgc tcg cta gtg cat tcg cag tcc gtg ctt cag cgg cgg agg aag ctc agg aga	241
R K T I T G I P R R V Q Q D L D	63
cgg aaa acc atc act ggc att ccc aga cga gtg cag cag gat ttg g gtgtgtgaaa	297
	63
ctgcaacatattcctactatctgattttatggcttggttgtttacaagatagaatagggcggtaaaactga	369
	63
agtacagaaatcttatatatggcaatatatgcaaattacatatatgacatacaagtttatttttatgtttaa	441
	63
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63

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ccttagatgctgatgacctaataatgtgacctaataattaacgtcctatgatgTTgtgtgtctgctgggattagt	63 3825
caacatttcaagtggatcaaaaacttaatttgacaactTTTTaaagtggataaaaaatatcaaaaactcctcaaac	63 3897
tactaaatttattgaacaacacccattcttaagactTTTTgaaaatTTTTTTgatccacttcgaatgTTg	63 3969
actactgtatatagcctaatatggccataatcaggtttctgtataggaatgccatgtataaaagcattgTTT	63 4041
aatgtgttcattcttctttag at tct gac gag tct cca gtg gca aga gaa cgt act gtg	75 4100
I V H T N P E I G Q E D L T L S H L	93
ata gta cac aca aat cct gaa att ggc cag gag gat cta acg ctc tct cat ctc	4154
aI76K[1] tT79I[2] tG84C[3] aD87E[4] gD87E[5]	
K T K D S G C Q T E E I L I A G A A	111
aaa acc aag gac tct ggt tgc caa act gaa gaa atc cta att gct ggg gct gca	4208
P S R R R I R A Q R G Q C M T V S L	129
ccc tca cgt aga rgg att aga gca caa aga ggg cag tgc atg acc gtg tct ctg	4262
tR114C[6] tR114C[7]	
S H S T G N I S S L P D N S D A M F	147
tcc cat tcg aca ggc aac ata tct tct ctg cct gac aac tct gac gct atg ttc	4316
aI136K[8]	
T A S A G S R L R S R S L P R E G G	165
act gcc tcg gcg ggc tcc cgt ctg cgt tcc cga agc ctt ccg cga gag gga ggc	4370
R L V D E G H D D S D E E E D E E E	183
cga ctg gtg gat gaa ggt cat gat gac agc gat gaa gag gag gat gag gaa gaa	4424
L S P F E A E D F L P V P G E H I L	201
ttg tct ccg ttt gag gca gag gac ttc cta cca gtt cca ggg gag cat ata tta	4478
K D D E E S T D D Q T I P E G Q H N	219



G S K S F T Y N Y A S V D Q Q Q A D	471
ggg agc aaa agc ttc aca tat aac tat gca tct gta gac cag cag cag gca gac	5288
aY460N[23]	
aY460N[24]	
Y G H Q T N T L G R H S L S L R K P	489
tat gga cat caa aca aac aca ctt ggg aga cat agt ctc tct tta agg aaa cca	5342
tQ475*[25]	
tH482L[26]	
K V K P S P P K R S S S L R K L S S	507
aag gtg aag cca tcc cca cca aaa cgc agc tca tca ttg agg aaa tta agc agc	5396
tP495S[27]	
H V G P P T D K N E P K I A G D Q N	525
cat gtt gga cct ccc aca gac aag aat gaa cca aag att gca ggt gat cag aac	5450
aP512=[28]	
K S M S S G E R T H N M G L N G T S	543
aaa tca atg tct tcc ggg gag aga aca cat aac atg gga tta aac gga acc tcc	5504
L S Q L E S E E P M G A W G V E S S	561
ttg agt cag ctg gag agc gag gag cct atg gga gca tgg ggt gtt gag agt tca	5558
aL547=[29]	
A E I P D V A L F G S T E T H S F K	579
gcc gag att cca gat gtt gct ttg ttt ggc tcc aca gaa acg cat tcc ttc aag	5612
D E G A V Q S D Y A D L W L L N D L	597
gat gag gga gct gtc cag tca gac tat gca gat ctc tgg ctt ctt aat gac tta	5666
tD596=[30]	
K S N D P Y R S L S N S S T A T G T	615
aaa tcc aac gat ccc tac aga tca ttg tca aat tcc agc aca gct acg ggt acc	5720
T V I E C I K S Q E S S E S Q T S Q	633
act gtc att gaa tgc att aag tca cag gag agc tca gag tcc cag acc tca cag	5774
S G S R A T T P S L P S V E C E F R	651
tca ggt tcg aga gcc aca act cca tca cta cca tca gtg gag tgc gag ttt agg	5828
aT639K[31]	
aE649K[33]	
gT640=[32]	
L P S P E K L V G L A S P S S G Y S	669
cta ccc tca cca gaa aag ctg gta ggt cta gca tca cct tca agt ggc tac tca	5882
cS654=[34]	
S Q S E T P T S S L P S A F F P N A	687
agc caa tca gag aca cca aca tct tct ctt cca tct gct ttc ttt cca aac gct	5936
tN686=[35]	
H P M S P T G G K R K P K V P E R K	705
cac cca atg tcc cct act ggt ggc aag agg aaa ccc aaa gtc cca gag agg aag	5990

S S L A S L Q Q N S S K R E L E L P 723  
 tcc tca ctt gct tct ttg cag cag aac tca tcc aaa agg gaa ctt gaa ttg cct 6044

I I P P T H L D L S A L P N V S K P 741  
 att ata cct ccc acc cac ctt gac cta agt gcc ctt ccc aat gtc agc aag cct 6098  
 gI724S[36]

S V H K N Q M H V L H H S K K K A A 759  
 tcg gtt cac aaa aac cag atg cac gtc ctt cac cac agc aag aaa aaa gca gca 6152

E T K R E C Q A S S V S T 772  
 gaa acc aag cgt gag tgt caa gca tct tca gtt tca a gtgatgatctaccagtttagcgg 6211

I T P T I L R S V Q L R A V G 787  
 tgcttttag cc atc act cct aca ata ctt cgt tcg gtt cag cta cga gca gtt gga 6266

K S G E G S H 794  
 aaa tct gga gaa ggg agt cat gatcagcctataactgatactgccactaggcctaagtgtccac 6331

794  
 tgtgactatcatcacaccacctactcacaacaaatcccacgaaagtagaaaaacctc 6387

## Coding Sequence

E E K V A R T Q Q P L T C L V L F A 18  
 gaa gaa aaa gtg gct cgc acc caa cag cct ctc aca tgt ctg gtg ctc ttt gca 54

G V G F D R E A S V R C S L V H S Q 36  
 ggg gtt ggg ttc gac aga gag gcc agt gta cgc tgc tcg cta gtg cat tcg cag 108

S V L Q R R R K L R R R K T I T G I 54  
 tcc gtg ctt cag cgg cgg agg aag ctc agg aga cgg aaa acc atc act ggc att 162

P R R V Q Q D L D | S D E S P V A R 71  
 ccc aga cga gtg cag cag gat ttg g | at tct gac gag tct cca gtg gca aga 213

E R T V I V H T N P E I G Q E D L T 89  
 gaa cgt act gtg ata gta cac aca aat cct gaa att ggc cag gag gat cta acg 267  
 aI76K[1] tT79I[2] tG84C[3] aD87E[4]  
 gD87E[5]

L S H L K T K D S G C Q T E E I L I 107  
 ctc tct cat ctc aaa acc aag gac tct ggt tgc caa act gaa gaa atc cta att 321

A G A A P S R R R I R A Q R G Q C M 125  
 gct ggg gct gca ccc tca cgt aga cgg att aga gca caa aga ggg cag tgc atg 375  
 tR114C[6]  
 tR114C[7]

T V S L S H S T G N I S S L P D N S	143
acc gtg tct ctg tcc cat tcg aca ggc aac ata tct tct ctg cct gac aac tct	429
aI136K[8]	
D A M F T A S A G S R L R S R S L P	161
gac gct atg ttc act gcc tcg gcg ggc tcc cgt ctg cgt tcc cga agc ctt ccg	483
R E G G R L V D E G H D D S D E E E	179
cga gag gga ggc cga ctg gtg gat gaa ggt cat gat gac agc gat gaa gag gag	537
D E E E L S P F E A E D F L P V P G	197
gat gag gaa gaa ttg tct ccg ttt gag gca gag gac ttc cta cca gtt cca ggg	591
E H I L K D D E E S T D D Q T I P E	215
gag cat ata tta aaa gat gac gag gaa agc act gat gat cag acg atc cca gaa	645
aD204E[9]	
tT212M[10]	
aI213N[11]	
G Q H N S L K F K Q H A G S T D H E	233
gga cag cat aat agt ttg aaa ttc aag cag cat gct gga agt aca gac cat gaa	699
tQ217*[12]	
W L E R G R S R L P R K A D M G S C	251
tgg ttg gag agg ggt cga tcc cgt ctg cct cgg aaa gct gac atg ggt agt tgt	753
E I S S S S D T F S S P I H S I S N	269
gag att tcc tct agt tct gac aca ttc agt agc cct att cac tcc att tcc aat	807
cS257=[13]	
A G V L T S Q M D H K E D H Q S S S	287
gct ggt gtg ctg act agc cag atg gac cac aag gag gat cac cag tcc tca agc	861
tD278=[14]	
G N W S G S S S T C P S Q T S E T I	305
ggc aac tgg agt ggt agt agt tca aca tgt ccc tcc cag acg tcg gaa acc att	915
aG292D[15]	
aT301=[17]	
aI305=[18]	
cG292=[16]	
P P A A S P P L T G S S H C D S E L	323
cca cct gca gcc tca ccc cca ctc acc gga tca tcc cac tgt gat tca gag cta	969
tL313F[19]	
S L N A A T N T N D D S T G F I I D	341
tcg ctg aat gca gct acc aat act aat gat gat tcc act ggc ttc att att gat	1023
P Y P G D R L Q G L R S H R T G S F	359
ccg tat cct ggg gac cga ttg caa ggg ctc cgc agc cat aga acg ggt tca ttc	1077
aP342=[20]	
tR355*[21]	
T S T A T D M L D D A G V S T A S E	377

act tcc act gca act gac atg ctt gac gat gct gga gtc agc act gct agt gag	1131
G E W S Y P Q Y R H N I P C H P D F	395
ggt gaa tgg agt tat ccc caa tac agg cat aac ata cct tgc cac cct gac ttc	1185
S P E H S R A E N I L E C P S F T S	413
agt cct gag cac tca agg gca gag aac ata ctc gaa tgt ccc agt ttt act agc	1239
I A T F E S L T D R P P S E K A D T	431
ata gcc act ttt gaa agt tta aca gat agg cca cct tct gaa aag gca gac acc	1293
T S H Y S V D A E G Y Y T S M H F D	449
acc tca cac tat tct gta gat gcc gag ggc tac tat acc tcc atg cac ttt gac	1347
aD438E[22]	
C G L K G S K S F T Y N Y A S V D Q	467
tgt ggt ctt aaa ggt agc aaa agc ttc aca tat aac tat gca tct gta gac cag	1401
aY460N[23]	
aY460N[24]	
Q Q A D Y G H Q T N T L G R H S L S	485
cag cag gca gac tat gga cat caa aca aac aca ctt ggg aga cat agt ctc tct	1455
tQ475*[25]	
tH482L[26]	
L R K P K V K P S P P K R S S S L R	503
tta agg aaa cca aag gtg aag cca tcc cca cca aaa cgc agc tca tca ttg agg	1509
tP495S[27]	
K L S S H V G P P T D K N E P K I A	521
aaa tta agc agc cat gtt gga cct ccc aca gac aag aat gaa cca aag att gca	1563
aP512=[28]	
G D Q N K S M S S G E R T H N M G L	539
ggt gat cag aac aaa tca atg tct tcc ggg gag aga aca cat aac atg gga tta	1617
N G T S L S Q L E S E E P M G A W G	557
aac gga acc tcc ttg agt cag ctg gag agc gag gag cct atg gga gca tgg ggt	1671
aL547=[29]	
V E S S A E I P D V A L F G S T E T	575
gtt gag agt tca gcc gag att cca gat gtt gct ttg ttt ggc tcc aca gaa acg	1725
H S F K D E G A V Q S D Y A D L W L	593
cat tcc ttc aag gat gag gga gct gtc cag tca gac tat gca gat ctc tgg ctt	1779
L N D L K S N D P Y R S L S N S S T	611
ctt aat gac tta aaa tcc aac gat ccc tac aga tca ttg tca aat tcc agc aca	1833
tD596=[30]	
A T G T T V I E C I K S Q E S S E S	629
gct acg ggt acc act gtc att gaa tgc att aag tca cag gag agc tca gag tcc	1887

Q T S Q S G S R A T T P S L P S V E	647
cag acc tca cag tca ggt tcg aga gcc aca act cca tca cta cca tca gtg gag	1941
aT639K[31]	
gT640=[32]	
C E F R L P S P E K L V G L A S P S	665
tgc gag ttt agg cta ccc tca cca gaa aag ctg gta ggt cta gca tca cct tca	1995
aE649K[33]                                  cS654=[34]	
S G Y S S Q S E T P T S S L P S A F	683
agt ggc tac tca agc caa tca gag aca cca aca tct tct ctt cca tct gct ttc	2049
F P N A H P M S P T G G K R K P K V	701
ttt cca aac gct cac cca atg tcc cct act ggt ggc aag agg aaa ccc aaa gtc	2103
tN686=[35]	
P E R K S S L A S L Q Q N S S K R E	719
cca gag agg aag tcc tca ctt gct tct ttg cag cag aac tca tcc aaa agg gaa	2157
L E L P I I P P T H L D L S A L P N	737
ctt gaa ttg cct att ata cct ccc acc cac ctt gac cta agt gcc ctt ccc aat	2211
gI724S[36]	
V S K P S V H K N Q M H V L H H S K	755
gtc agc aag cct tcg gtt cac aaa aac cag atg cac gtc ctt cac cac agc aag	2265
K K A A E T K R E C Q A S S V S T	772
aaa aaa gca gca gaa acc aag cgt gag tgt caa gca tct tca gtt tca a   cc	2316
I T P T I L R S V Q L R A V G K S G	790
atc act cct aca ata ctt cgt tcg gtt cag cta cga gca gtt gga aaa tct gga	2370
E G S H	794
gaa ggg agt cat	2382