

PSTPIP1 (NC_000015.10, GRCh38) - gDNA - 2026-11-23

```
atcagtgagg gtggtgattt gcggacaatc cctgactcac cccattttgc 76994175
cagcctgccc tgggctcagg acttcctgct gcatcttctg ctgagccggc 76994225
agggcgtggc gtctcagggc tggggctggg gctctagtcc agggctcttc 76994275
ctaaggtggt accacacagt gcccccagca cctgcccacc aaactggaaa 76994325
ttccagaaat attctcgaca ccgtctactt tccaaagact gggtgtggca 76994375
gatgaggaag ctgaggctca gcgagttggg gggtctatta aggtccctca 76994425
gcccctgaaa ggtggggtca aaattaaaca aaaactgggc ctcagactgg 76994475
gtttccaaac accccactct gtgccttgat aatcctgttt ctctctccat 76994525
ccattcccat tcactgagcc ggaagcctcc atcttcagaa gggggttctc 76994575
tgccccaaac agcgtctaat ctggagactt gcggtggtgg cggtggtggt 76994625
ggtgggggca gtgccggggc ctcaggctgt tctccctcat cttgctgcct 76994675
gctcaccttg cctctgtgtg ctcacagccc cccagagcac agctgtgtct 76994725
gctcccagac tatgggctcc ttgagggcag gacctggttt gggtcccaga 76994775
gcagccaggg tttgatgaat gacagatgcc ctagacctgg gtaagcccct 76994825
ccagaatgac ttgctagtgc ggggtgggga gtctggcatc tctgggccca 76994875
gcctggaagg gtgctggact ggctggcggg tgacacacct ggggttcctg 76994925
ggcccctcct ggccacactg tcagtgggcc tcaagctccc ttagcatatg 76994975
gcctctggaa taaagtgagc ccgcacctcg ggagggggca agcagaggca 76995025
ggagcaggat ggcaggtggc aggcggggct gcacagggga gcacagcaac 76995075
tccacttcct gtgggcgagg gccctgtgcc tgccccgggg gaggttgcac 76995125
AAACCTTCCT GCGCAGGCCT CGGGCTGCCT GCCTGCCTGC CTGCCTGGCC 76995175
CGGCCCGAGC TCCAGCCTGC CTCTTCCACT GGCCACTGCC TCCCACCCAG 76995225
GGCTGGCATC CCTGCTCCCT GCCCTGGGTC CCAGACTGTG TCCTCCATCA 76995275
CCGCAGGGTC GGTGAGGGGC TGGGCTGGAC ACCAGGGCCC GCCCTCCCAT 76995325 -282G>T
CACTGAGCTC CACTCCTTCC TCATTTTGCT GCTGATTCTA GCCCCAAACA 76995375
AAACAGGTTG AGCTTTTTCC TCCCCTCAGA AGCTCCTCTC TGGCTCGTGG 76995425 c.262G>A
CTGCCTTCTG AGTGTTGCAG ACGGCGCCGG CCGGGAAGGG GGGCCTGGGC 76995475
CAGCCCTGCC AGGACTGGGA CGCTGCTGCT GGCGCCTGGC CCTCCATCAG 76995525
GCCAGCCTGT GGCAGGAGAG TGAGCTTTGC CGCGGCAGAC GCCTGAGGAT 76995575
GATGCCCCAG CTGCAGTTCA AAGATGCCTT TTGGgtgagt gaggatggtt 76995625 M2T
gggggcactg aacaagtgga gggggcagag ctaggctgaa atctccatgc 76995675
aggtgatggg atgcggctcc gagaggggag ctttctcata aaatagtggt 76995725
tgattcttgg tcttaattgt catggaggtg gcccaggccc ccaccccttc 76995775
tggactggaa cgcaagtgga ctccgtgaat gagcgtcctc ctctctgctg 76995825
ccccgtgtgt tttctcctct gggagacctc tccccacagc aggagctcct 76995875
cagaagaggg taacacatgg gtgggggctt gaggaggatg tgtggggcag 76995925
caaaggaggg gtcacagatt tagagaccag acaaacttga gttcaggtct 76995975
tggctctgtt acaggctggg caagtcattt ctgtctccaa gcctcagtct 76996025
ctccatctat ataatggtga taaaatagaa atcaacacac caactaaagc 76996075
attggatcag caaggggatc caaggcacta aagcccccag caccttgcct 76996125
```

cactccaaat ggtaattctg ttcccctcac ccagcccctt gtcccttgca 76996175

gaccttaggg gtccttcaag gaggcagcca ggtgggcaat ggcttgctta 76996225

ctttcttaaa ttcaacacgg gcttaaatca agtcatttcc cccatgaaat 76996275

aagggcgccc agccagtggt agaggtaaag tggcttggcc cgggccacgt 76996325

agcctgcagc ccagcttgga cccctggtca tctcagcact tttccagctg 76996375

tccttcaact acccctctgc ccctcagctc tggctgtgcc cagggctctg 76996425

gggaaaaact gagacctctc tggttggagc tggggaatgt ggctgtcccg 76996475

gggtgctgcc tccaaccccg aagaggacgc tctggccctc ggctcagccg 76996525

gctgagcccc agccaacagc cctgccctcc ccgggccttt tcctggggct 76996575

gcagccagga ggatgagagc tatggagcca ggccttcctt cccttccggc 76996625

cggctccact tggggcctgt ggccagcgtg tgagtgttct gcttcctctg 76996675

ctctgactgt acagtaggca aaggacccca cgtggggagg gcaccttgtg 76996725

cctttctggg cctcagtttc cccatctcta caaagacagg gtgggcccag 76996775

cccagagaag ccaatggagg cagagctgcc tcagcccatc cggaggacca 76996825

ggcaccagga tgctcagggc ccaggctggc agctggagcc ctgggggatg 76996875

ggggatgtga gtcaccacct agctgccctg ccttggtgtg caaagttggg 76996925

ggaaggggta gggcctggaa acccaggcca ctctgtagcc cagggcaggc 76996975

caggacccct tgactatttt atcactgaga cctctgtcca gtcctagagc 76997025

ccctgggcct gccttcccta gggcagagct gggcaaggag cagcctccat 76997075

ggcaggatct gggcacaggt aggggtggcg tataagggag cagggtatgg 76997125

cagccgcagc agaagcaagc agccagcccc tgtggagctt cctgagcggc 76997175

atcctgccca cactctgtgc tcgtcgcacc tctgggcttc ctggcctcca 76997225

agtgccttgt ctcctctgtg tctggctccc tgagcctggg gcgggcatat 76997275

agtttcccta gggaaggcca gagcaggaag gggagagaag tagccagtgg 76997325

gaacctctca cactgagtct gggccgatgc cccgaaaggt cactgtaggc 76997375

atcacctgcc ccagggctct ggattctaat acctcttcct gatgctcagc 76997425

ccatcccagt gcataacaac taacatttgc tgagcacgaa agatgtgcca 76997475

ggcgctgttc tcaagatgta tgcatattca ctcattcaat ccttcaaaca 76997525

catgctactg ttatctctct tattcagatg aggaaattga ggcacggaga 76997575

tattaagaga cttgcgcaag gtcacactgc tgggattaaa cccctggcag 76997625

gctggcttta gcacttgtgt tgttgcagga tccctctgtc tatctgacat 76997675

atcactggat cttttggctt cggggtaaga taagaggtaa cccctcttat 76997725

ctcccagagg ggtaagaaaa tcagacaagg tggctagaac aatattctga 76997775

agcttcattt gtagacaaat ctgtaaaaca gaaaaggcac actactctgg 76997825

ccacaggtgt tatattagga acagcccagc cagcttggcc catgtctggg 76997875

ccttccccca ccccagccca aggcactgtc attaaaccct tcagcctgcc 76997925

agcacactgt ttagaaatga ctggttttta ggcggggtgc agtggttcac 76997975

gcctgtaatc ccagcactct gggaggccaa ggtggatgga tcacttgagg 76998025

tcaggagttc aagaccagcc tggccaacat ggtgaaaccc tgtctctact 76998075

aaaaatacaa aaattagcca ggcgtgatgg catgctcctg taatcccagc 76998125

tacttgggag gctgaggcag gagaacagct tgaacccaag aggcagaggt 76998175

tgcagtgagc tgagattgtg ccactgtact ctagcctggg tgacagagct 76998225

gacagagtgg agggacccta ctttggctaa actggaaaga tcatgtttga 76998275

tatcacagcc cctcagttat tgggcaacct cacccataca gaacacgggg 76998325

cggaggaggg gagccagccc tgctgtttct ggctttagct cacagtaagg 76998375

gaggaagcaa aagtggtttc tcaggagcca aagatgattt ccctaagagc 76998425

tttccttaaa gctcatatac tacactccta ggagatgtcc cctagctttt 76998475

actcaggtcc tatgaactct aatttcaccc acaattttaa tgagcttggt 76998525

catggggtct tttagcctat agatgtagca attagtggca gtctgcacag 76998575

tacctgatat acagttggcg atggataaat gctgatggac ctggactacg 76998625

aaaggacgtt tcacaggcag ctagcagcct gattgcaagg aaggagacag 76998675

aaacagtctg aaaagcagct gtagtggcac agaagtagtg gggacactca 76998725

gcatgggagc agacacagtc ctgtccctca gtcggcctgt ttttgcaatt 76998775

ttgtcagtgt ggccacacag tatttattta tagcctgatt ttagctgcag 76998825

ccgagtgttc agatgcacgc tgctgtagga gtgaggcagg gcggaccagc 76998875

cacagaggga gggaagggat aatgtgattt ctgtgataca cacagatgat 76998925

aaagagcatc acaccttggc aggaagtttg taaatgagcc tcagagtggg 76998975

acctgtcagt gagacaaggt tgaatctgag aataccagct gtctgagcgg 76999025

agagggcact ggcctagcac tgagtctaag gcgctgggaa gcccagagaa 76999075

ggaagggtcc tccccctgcc cccagtttgt cgtggctcca ctcccagcag 76999125

gtggccaaat tattgcaaga aatgtctgtc tgtatcctct gcacagggct 76999175

gacaagtggg gtactggctg aggacgtgtt catagaataa atgaatggac 76999225

agtgaatgtc tccatggtcc atctcccttc ctgaacccat tttttacttc 76999275

atttcacttt ttttttttt tgagaaagaa tcttactctg tcacccaggc 76999325

tggagggcag tggcacaatc tcagctcact gcaacctccg cctcctgggg 76999375

tcaggtgatt ctcctgtctc agcctcccga gtagctggga ttacagacgt 76999425

gcgccgccac gtctgtctaa tttttgtatt tttagtacag atgagatttc 76999475

accatgttgg cctggctggt ctcgaactcc tgacctcaga tgatccaccc 76999525

gcctcagcct tccaaagtgc tgggattaca ggcgtgagcc gccgcgccca 76999575

gcactacatt tcacttttgt tatattctgc aaatatttgg tgagtagggc 76999625

tgtctactag gtggtccacg ctggacccct gagcttcttc accctgcaac 76999675

atctaatcag atgaatgaaa ctgtcttgac ctgaaggaag ccatagttca 76999725

gtgccggggc tggaggaata actgggtcag gcaaggagtg ctctgagagg 76999775

agcagtatct caactgtgcc atcctctccc aggtccccca tcccccgcaa 76999825

cctgtatgtc tatccaatgg cctttgcaaa gatgtcatta gatattgttt 76999875

taagagggaa aatctagttc tggaccagat tctattgaga tccacatcct 76999925

attcctttta gggtagttaa aaggaaaagt aaggacctgg ggaggctggg 76999975

tcacatgcac tgcagtgact gtcacccacc ctttgggtgg gaaccaccaa 77000025

gggggtatgg ggacaatagg cctgaacttt ccccttgaca tgtgggtgta 77000075

tctctccttt gaggctgggc tctggctcta tctagaaacc cctgtgccac 77000125

actgggagga gctgagcctc cccaagccca tttaacaggt gacagcaccg 77000175

ctgccgagtg gggcagtgac tcaccagctt cacacagtgg gaccagctgg 77000225

gctggtctgc cccttcccta tgtggcactc agccactggt gccttttccc 77000275

ttcccagttc tgagatgctg aggtgcccat ttatgaggct acagagaagg 77000325

ggactgaggg gccctactct gatctgtcat aaagctgcct gtccctaccc 77000375

ccagacctgt ctaccatggc ccaggggcat caggagagcc tgacatttgc 77000425

tgggcacctg ttccatcctg ggcatttaaa gagagatata tatatatata 77000475

tacacacaca cacacacaca cacacacata cacacacaca ctttctaaag 77000525

aaacaaaatc aactaatata agatcctaaa aggaaagtgg ggaaatggag 77000575

aaaaatagga aaagaagaag cacctttagt ctcatcacac aactgctaat 77000625

attatgctgt gtttgcataa gattgcctta cataggtgca agcatattgt 77000675

gtacataatt ttgtattttc cctttctttt acaaattttt tatttttgca 77000725

gagatgaggt ctccctgtgt tgcccaggct ggtctcaaac tcttgggctc 77000775

aagcaatcct cctgccttgg cttccagagt gctgggatta caggcgtgag 77000825

ccaccatgca cggccctccc tccttttttt ttctagtatt ttaaatttta 77000875

ttttaaattg tagcgaaata cacataaaat gtaccatctt aaccattttt 77000925

gtggtgtatg gttcagtagc gctaggtttg ttcacacttt gccaccctcc 77000975

cctttttta gcgtaactca ctccatcggg aacacctgtg ggtgtggaca 77001025

tgggttcctc attttcagca acaccactgt tcatggctgc acagttctct 77001075

agcttgtgaa tttggtgacc atgctgtgat ttttttgcc cagtcctcca 77001125

ctgctgaaca tttaggttac tgccaattat ttattattct ggacagtgac 77001175

accatgggta gatctttgac tataaaggtt tttcacttgg ggattatttc 77001225

tttgggcaga ggaggctaat ggctattttc cagggaagga ggcatttctg 77001275

ggtgaaagag tggggccagt tctccagcca tgggtactag cagtcacttt 77001325

gggatccccc atagtcctct ggttgggcag gagctttttc acacaggaag 77001375

gagggacccc agaatggcct ggaagggtca gggcctgtgg atggggccct 77001425

gctggaaacc agagcctgca ctgactttgt ggaaggcctt gcagcccagc 77001475

aaactgctgt ggctttgagg gccaaggagg ccagtggctg aggagtggcc 77001525

ctggtgcact cagagcttgc agacagtgca ggaggtggga gagagaggcc 77001575

ctggccatcc tgcctttgct gccaccaagt accttcccgg cacctgcctg 77001625

gctgcatctg tcagaagcag tgaggacgga ggctctccct ttcctgattg 77001675

ggaaagctct ttaagacctg gtgttccctg taaaaagcag agagcctggc 77001725

agtgcacctg gtcggcaacc cgttgtgaaa agtggggaaa taagcattta 77001775

tactggcgca ggcttgtagt attaacaaca aaaatctgtg gacggatgca 77001825

cagggagcta attaaagtgg ttgcctgttg ggagaatgag agaaaggaga 77001875

tggatgaggg atgaggctga gcggctgtga acgttttcag gattgatgtt 77001925

tttatactgt ttgatttttg aaccatatga atgtattaat tattcaaaaa 77001975

ttaaatcaaa caattaaaaa tgaaaaagag gacatttatt tcaagtccca 77002025

tgaagaattt ttccctgaat cccagctact tacatcatcc cctgaggagc 77002075

agcaatgctg ccatttgctg agtgcctgtt ccatgccagg catgctgcca 77002125

ttcagtccac atgcccccaa acgcattgtc agtgtcttcc tgactctgtg 77002175

atgggaccta aggcacggca ggtctaggcc cagacgaggg tcacctgtgc 77002225

agggtagagc agggactccc acctaggtct gtcgaactct attgccctct 77002275

gccctgaatt ctagagagtt tgttcttgct tctactttaa tttgtgtagg 77002325

atgaaaggat gcttccctac atgttaacac tggtgtctat ggatttggaa 77002375

gtaggattct ctccatcccc catctaattt tctgcaagtc aatacagagt 77002425

acctttgtca ttaaaaagaa aatatttaaa aagaaaacta agcaattcct 77002475

gctttcaaga atgagttggt gtttctaggc caaatttgtg gtttgctagc 77002525

atgccctttt ccacatgctc ggtgcatatt ttgtggtacg tgggcctctg 77002575

gggaccaaga acttcgttca tctgtgccca ttccacagga cgtggccggc 77002625

tgctcaggtg ttagaagatt gcagaggttt gtggtcatgc ttgctttgct 77002675

tttgcgatgc ctgcagatgg tcactgccag gatttgctgg ctgcagggtt 77002725

ctgggtcgat ttggtgttct gaattcaatt ttattcttga taaaaaacaa 77002775

gatctgcttc ttgatgaccc actttgtgct ccagtcccct ggaacccaca 77002825

tgcttttcct ggctgctcct gacatctaca cagaactagg gcagcccctg 77002875

ggatggagaa ggagggcctt gctttgggct ttgaagggtg ggtgaggatt 77002925

tgagacatgt caggaggaca aacggcactc aaggtgggag gtacggcatg 77002975

ggcaaaggtg tggaaggggg tttggaagac agttttctgg cccagagcat 77003025

tgtgcaaggt gactggtagg aagggaaggc acgagctgga ttgtgaaagg 77003075

tctctgccct aagtggtggc agagatactt tcttctgcct ctctgcaccc 77003125

tctctggtgg tggctgtttc ctctcatgca aaagaggaca gaggctgcgg 77003175

gctgtgagtg ggatgccctt cctcctcacc cagagcctgg ctgacgctgc 77003225

aaaccacatg atggagggaa ctttgggtgg aaaccaagac tgcctctgct 77003275

tccagctaga gagcatgatg ccctgggccc tgggctgccc acaccaggac 77003325

tctcctctgg gttggctctg gaaggttcct ccctcacaga ctcagtcatg 77003375

ctccatcctc caggcttaga aggaaatcgg cttcttggga ggccgaggcg 77003425

ggtggatcat ctgaggtcag gggttcgaga ccagcctggc caccatggtg 77003475

aaaccctgtc tctactaaaa ctacaaaaaa attagcgggg catggtggcg 77003525

catgcctgta atcccagcta ctcaggaggc tgaggcagga gaatcgcttg 77003575

aacccaggag gtggaggttg cagtgagctg aggtttcaca attgcactcc 77003625

agcctgggca aaagaacgaa actccgtctc aaaaaaaaaa aaagaagaag 77003675

aaggaagcgg gcttctttga agcctcaccc aaccctcacc cacacttgct 77003725

aggtggcctt ggagaatcat tttccctttc tgaacctcag tttcctcatc 77003775

tgcaggatgt cagggtcgtc atcacttaag ataagggctt tgaggttggg 77003825

gcggctcagg gcagtgctaa gggaccacct cctgctcacc acagtggagt 77003875

agcagaccag gaacagttcc caggggaccc agatttataa ttggatatgc 77003925

acccataggg tgagccttat acatagatct tgctgtttca gaatgcctcc 77003975

tccaatcatg ttcaccattg catgttatac tccaccatta gagaatcatt 77004025

cctttggttt caagtaacaa gatgatctat gttatctcac ttaattccaa 77004075

caatagtcct gtgaggtcag tattcttatt cctgttttac agagaggaaa 77004125

ctgagcctct tggaaggaat gtgggcctgg gggatgccac acagatggat 77004175

cggactgggc tgggcctgga tgccaccttc ccaggtctgg gtcagagagc 77004225

cctttgcagt taatgggagg gtgtgttggt ttgctgaggc ctggcacact 77004275

gagcaatggg tgatggaaca ggcaggagag cgacagctcc ttccactggt 77004325

gttgacaggc cacccaccat tgggcaacag gaagtgccag ctggagccct 77004375

ggagaccagc agccagtgtg gggatgtggt ggccagatgg aactcagggc 77004425

ttcccagctg tggaaacagg aacgggaaac agccacactg gggaggaagt 77004475

caggggtga tgggctgagg caagagcatg cctgcgtggc tagagagagt 77004525

gaccaaggtg gagagtagtt ggagataagg taagaaatag aacagtggcc 77004575

aggcgtggtg gctcacacct gtaatcccag cactttggga ggctgaggtg 77004625

ggaagatcac ttgaacccag gagttcaaga ccagtctggg caacatggtg 77004675

aaaccacttc ttaaaaaaaa aaaaaagtac aaaaattagc tgtacctggt 77004725

ggtgcacacc tgtagtctca gctacttggg aagctggagt ggaagggtca 77004775

cttgagccca ggagttggaa actgtagtga ctgtatgatc gcaccactgc 77004825

actccagcct gggcaacaga gcaagactgt ctcaaaacaa acaaacaaac 77004875

aaacaaaaaa aacaaagaaa gaaaagagaa gcagagagcc agatcttgta 77004925

ggactgtcat tctaaaaaat cccaatgccc aggccacacc ccaggtcaat 77004975

tacaccccga tttctgaggg taggacctgg acatcagtat ttttcaaagt 77005025

tccccagtgc ctccatgtgg aactttagct tgagaggcat caacatagat 77005075

aattgtggta attaattacc attgctggcc aagcatggtg gctcatgcct 77005125

ataatcccag cagtttggga ggccaaggtg ggcagatcac ctgaggtcgg 77005175

gagttcaaga ccagcctggc caacatggtg aaaccctgtc tctactaaaa 77005225

atacaaaaaa tgtagccagg tatggtggtg catgcctgta atcccagcta 77005275

cttgagaggc agaggcagga gaattgcttg aacctgggag gcagaggttg 77005325

cagtgagcca agattgtgcc actgcactcc agcctgggca acaagagcaa 77005375

acactcaata tcaaaacaaa acaaaacaaa aattaccatt gctgacaata 77005425

ggcatacatc tggtttttac cattttcctg acctcatttg actcacctga 77005475

gtgagcagag gttagaagtt ttgggggtgg tggtaattat atgtaacata 77005525

aaattgacca ttttaacaat ttttaagtat atgattcaga ggcattaaga 77005575

acattcacta tttcctgaac tgcttcatca tcctgaacag aaattgtacc 77005625

catcaaacaa taactcccca ccccttcacc gcataccttg ttctacctcg 77005675

attctacttt ctagctctat ggatttgcct attctaggca tctcctgtaa 77005725

gtagaatcag ataatatttg tccttttgtg tctggcttat ttcagttagc 77005775

ataatgtctt caaggctcat ccatgtcata gcatatgtca gaattttctt 77005825

cctctttatg acaaaatact attccattct acgtatatac tttattttgt 77005875

atatccattg atccattgat gaccactggg ctgtttcttt gagctactgt 77005925

gaataatgct gccatgaaca ttggtgtaca agtacctgtt tgaaaccctg 77005975

ctttcaattc ttttagatta tacctaggag tggaattgct ggatcatatg 77006025

gtaatcctat gtttaacttt ttgagtaacc gccaaacagt tttacattcc 77006075

catcagcaat gcaaaaggga tccaattgct ccatatcttt gccaactctt 77006125

gttaatttct gttttttttt taaatcatag ccaccttagg aggcatgaag 77006175

taatatctca tcgtagtttt gatttgcatt tctctaataa ttaatgatgt 77006225

tgagcatctt ttcatgtgtt tattggccat ttgtgtacct tctttggaga 77006275

aagtctattt aagacctttg cccacttttg aattggttgt ctttttattg 77006325

ttgagttgaa ggagttcttt atattttcta gatactcatc ctttatcaga 77006375

tatatgattt gtaaatattt tctcccactc tggagtgtct tttcactgtt 77006425

ttgatataca aaagtttttc attttgatga attcaatgtg tctactcttt 77006475

gttttgttgc ctatgatttt aatatcatat cagagaaata attgccaaat 77006525

taaatatcat gaagctttcc ctatgttttc cttttaaaat tttgtagctt 77006575

taggtcttac atctaggtgt tcacttcatc ttgagttaat ttttgcatat 77006625

ggtataaagt aagggtccag cttaattctt ttgcatgtgg atatccagtt 77006675

ttcccagcgc catttgttga agtctgtcct tttctcatag aatggtcttg 77006725

gcacccttgt caaaaatcaa ttgaccatat atgttagggc ttatttctga 77006775

gctcactatt tccattctat tggttatatg tctgtcctta tgacactacc 77006825

gcactacttc aattactgta gctttgtagt aagctttgaa atcaagaagt 77006875

gtgagtcctc caaacttatt cttctttttc aagattgttt tggctctttg 77006925

ggggcccgag tagagctgct tttgttgttc ccttttttata ggtgaggaga 77006975

ctgaggcctg gaccctcctg agtttgccca gcctggactg gccacgagtc 77007025

cgtgacaaac tcctcatcat actctcaccc tgggcatgtg tagggagaca 77007075

cttgctttag agggcccctg ggttgtgggc tcctccctgc gattgctctg 77007125

ccttacagct ccccaagaag gtccatctat gacatctcgg cttccttgag 77007175

gccccacctg ctctcactct tcttcaagga gggtctggag ggaaggcctg 77007225

gaggctgggt caccaacttc ctcagtggat caagataaga ccctgcaagg 77007275

aattaatgtc tgtcccggcc tcagcttgcc tggataaaaa tcagacttct 77007325

ggccctgtgc agtggctcat gcctgtaatt ccagcactct ggaaagctga 77007375

ggcaggtgga ttgctcgagc ccaggagttc aagactagcc taggaagcat 77007425

ggcaaaaccc aatctctaca aaaaatacaa aaattagctg gggcgtggtg 77007475

gtgcacacct gtggtcccag ctacctgggg ggctgaggtg ggaggatcac 77007525

ttgagcccag gaggtcgagg ttgcagtgag ctgtaatcat gccactgcac 77007575

tccagcctgg gcaacagaac actttttttt ttttttgag atggactctc 77007625

gctctgctgc ccaagctgga gtgcagtggc acaatctcag ctcactgcaa 77007675

gctccgcctc ctgggttcac gccattctcc tgcctcagcc tcccgagtag 77007725

ctgggactac aggcacccac caccatgccc agctaatttt tttgtatttt 77007775

tagtagagac ggggtttcac tggttagcca ggatggtctc gatctcctga 77007825

cctcgtgatc tgcccgtcta ggcctcccaa agtgctggga ttacaagtgt 77007875

gagccaccgc gcccgactgg caatagaaca ctttgaggac tgcagtcact 77007925

gaagcagaag ggattccctt cttggtcacc tcctgaacaa ttgcccattg 77007975

acctggacca gctctgagcc cactctccta ggcatcagga catcagacta 77008025

caggtggtag gaagacccag aacagctgag gatggttcag gcaagcagag 77008075

ctgggggtgg agggcgggag atcagcacag aagtctggat cagtgtccct 77008125

ggagctgcag tgaatactaa acgcagccag gtgtgaggtc tgcacagcac 77008175

agggaagcac agggtgtggg tggggtgttt ggggatatct gtgaggattc 77008225

tcactgaccc tgaaaccaaa gaaacaggtg tggctggtgc caggaccaag 77008275

ggaagaccag cagctgagcc tgggtctagg gtcagagcag gagccgctct 77008325

gaagctgcag aaatttcatc cccgtcctca gataactccc agtcctcaag 77008375

ggaaggagct tgcactcagg gtctggcagt ctttttgttt tgtttgtttt 77008425

ttgagacaga gtcccactct gttgaccagg ctggagtgca gtggcaccgt 77008475

gtcggctcac tgcaacctcc gtctcctggg ctcaagcaat tatcctgcct 77008525

cagcctcccg agtagctggg attacaggtg cccgccacca cacccggcta 77008575

atttttgtat ttttagtaga gatggggttt catcatgttg accaggcttg 77008625

tctcgcactc ctgacctcag gtaatccacc cgcctcggct ttccaaagtg 77008675

ctgggattac aggcgtgagc cactgcgccc agcattcttg atctgagtcc 77008725

tacctctgtg taggctgaga gtaaaacgtt aaatagtgag tggtcccaga 77008775

gagcactagg ctcctcacac agcccccagg cctggggtag ggggagcatc 77008825

tgactctaag tagagtcgtg tttctccacc atgcggctgt gtgtaacatg 77008875

tacactggct gtgttgggca gagcagggcg atttcccaga ctccaacata 77008925

gaagccttta cttggcaggc gccatctttg tctctcactc tgaccttgga 77008975

gcccagtggc ccgcttcgat cctactacac tcatgggtgg tcctggggag 77009025

cccctcaact ctctgagcct tggttccttg tttgtaaata ttgtagtagt 77009075

aaactaactt tggtggttag aggattgaga gtggagacat gcaggttaat 77009125

ggccaagcaa ggataaggag ccccacgtgc catcccctgc aggtgtggag 77009175

tccaactagc cccccaggca cggaaggcct caggctcagc tccgaggccc 77009225

tgaacctgct gaggatggca gagagagcca aagggcctcc agaggctgca 77009275

ggggtccctg ccttcaagga agggcacggg cataggagtg gagctcctct 77009325

gaagctctag gggcccatct ctgtctcttg agcaagtccc aagcccaggg 77009375

gagcctgcca gccctcacac ctacagcaaa tcacagccgc aaagcaggca 77009425

cctcatatca gccctataag ggcttaggag tccacgtatt ctccccaatt 77009475

tacagatgaa aaaattgagg ccagagagtg ggagccacta gtctagagaa 77009525

gtgtcccagc taggatcaaa cccagttctc cttgtaaacg ccccttccct 77009575

gggctcctct cagttaacat gcatgaatcc cctcggctgc ccttccagga 77009625

gcccggtgag cgtcaaatgc cctgcatgag gctcctgcag gtgttgtcca 77009675

ttcagtcctc agagcccctg gaagtgggtg atgctctcat cccgatctca 77009725

cagaggagga atctgggctc aggaggtttg tgactcatgc agactgtgtg 77009775

gaactggcca gaaccagaac ccagtgcctg agccctgtca cgccccactg 77009825

cctggactcg ctgtgggcct gtcctcccct gggacatccc tggcaggcgt 77009875

aggtggtgtg ggagggcaat gcctggggac ggggatgtgc aatgacagtg 77009925

cctggaccac tggtgcccct ggctggtcac tcacaggcgg gagtccattc 77009975

ggcaaggagc cgtgctcttc ctgtgaagac gcctggaccc ctcctggctg 77010025

gctacagggt cagtgcctcc tccagggctt ggggtctggg gtggctcagc 77010075

tccatcctcc cctgcatcag tcacccccaa gggcccacgg cctcccttcc 77010125

tcacttgccc tcactgtcgg cctccttcct cgcccactgc tggatcctag 77010175

tgagcctcca actgccaaat cagcttggca ggggcggtac agagctgtgt 77010225

aacctggaca agtcactgtt atcctcactt ccttgtctgc ctgtaagatg 77010275

gaacagtaac agcacagtac taacttgacg gggttccctg aggactggag 77010325

gggatcatgc gtgagagccc caccaggcac cgcacactca atcccttccc 77010375

ctgaacctgg aacctggtcc tggttcctat gacctcctgg gaaggtcctg 77010425

ccctttgctg tgtgtgactt ggctctcctc agtctggcct caggccacct 77010475

tacagacacc tgctccatct ccctgcacct gtctctgctg ccttgaagca 77010525

ggttgcacag gaacagcact agcactggac ttccaggcag ctgagtctga 77010575

ggggcgtgtc tccatctacc tctggccgcc ttgtgtttgc tccttgcctc 77010625

ctctctcact tttcttctct tttctatttc tttttctttt gagacagggt 77010675

cttactctgt cacccaggct ggagtgcaat ggctcaatct cggctcactg 77010725

cagcctctgc ctcccaggtt aaagtgattc tcctgcctca ccctccgagt 77010775

agcggggatt acatgtgccc gccactacgc ccagctaatt ttgtattttt 77010825

agtagagaca gggtttcacc atgttggcca ggctggtctc aaactcctga 77010875

gctcaagtga tccacccctc tcagcctccc aaagtgctgg gatttcagtt 77010925

gtgagccacc acgtccagcc ctctctctct tttctgcatg ttttggtttc 77010975

atgacacagg agaaagaagt ggggattggg ctggccccat gagagtgaag 77011025

gaggggaagc aggcggggaa ctcaggcagt ggggtgcttt cctgcctcat 77011075

cattgagaag gcctatttaa aagaacaaag ctttcaagcc agacagacct 77011125

tggtcaaaag ccagacgccc cacaacatta gagagagtca cctctcttgt 77011175

cttcaccttc ctcatcttca tgacagacag tagctgcctc gtggtcagta 77011225

ttgctgaggg caggtaccac actcatgcac agtgtgtcct tgtccagtgc 77011275

ctgtgttgtc ccttcagtgg gacccctggg agtccctgga agctcacagg 77011325

gctctgatgg ggtccctgtc agccacgggc ctgtgggcct cccagcacag 77011375

tggagcccag cccaggcatc tctgggactc ggccagctgg gctgctcagg 77011425

tgaggggccc tgtaaggccc ggcagaggcc atcagactgg gactcggagg 77011475

agaactgtgg cactctggaa actcatttct aatctcaagg tcctgtcagc 77011525

ccaggtgaac aaagagtcgc tcatctgaca ttaatgcaca tttgttctct 77011575

aaaaactaaa agtctgtctt tgccttcttg gccctctgtc ttcaacactt 77011625

accctgggcc atctcagaca gctgtaagtc atcttcatcc catatttatt 77011675

tgcttataca tggatcgcag cagtacttga gtcaggggac ccctagacac 77011725

caagtcccta gtttaacagg ccatctgagg cttgagtcct ctctgtggaa 77011775

ccagacctgc ttacagactg tagtgatggg cgctcctcac ctgtcaaagc 77011825

cccccaccct ctttccatac ctacagccat tcaggctcct gggaagcctt 77011875

tccttgcatt gtcctggagt tggcctccct gtctctgccc ccatgagtcc 77011925

tggcttgggc tgggaaatgc cagccactag tgctccctct gcttctgatg 77011975

gccccacaga gatctccagg tgagactttt cctaggccat tccctcacag 77012025

ctttggcttg gaactctccc ttccctccct atcacctcct cccaaatact 77012075

ctgggtaagc aaccgccttg tttactgagg gctctggcca tccatccatc 77012125

catccatcca tccatccatc catccatcca tccacccacc cacccaccca 77012175

cccattcacc catccacctg tccatccatc catccgtcca cccatctgtc 77012225

catccatcca tccacccact catccatcta cctacccatc cactcatcca 77012275

cccatccacc cacccatcta cccatccatg catccaccca ctcacccatc 77012325

cctccatttg tccacctgtc caccagtcca cccatccacc cacccaccta 77012375

tccacccatc catccatcca cccacccacc catctaccca tccacccatc 77012425

catccaccca cccatctacc catccaccca tccatccacc cacccatcta 77012475

cccatccacc catccatcca cccacccatc catccatcct tccatccatc 77012525

cattcatcca tccatccatc catcaagttg tacctgagtg tttggtcctt 77012575

tgcctgcctc actttgccaa ccagtaatgg tggagaggag tcccactgtg 77012625

gggtactgac tgtagggcgg tggaaggagc ctggttgcta cccattgact 77012675

tagcatccct gtgcctctgt ttccgtatct atacaatggg gatgataatt 77012725

cctgtctcag aggactgttg taagaagtag aggggaccag tgtgactggc 77012775

ttctttaaag gtgctgggta atgggtcatt gaatctgcaa gcaaatgatc 77012825

tggtcccctc catggggcac ctcaggaagc agccgtcata aggccttgtc 77012875

ctcttgaagg cctcactgag gcgcttctcc agcccatcac tcagcatgtc 77012925

tgtgagcaga gctgtgtgta ggcaccaggt gccgggatcc agtggggaac 77012975

ctgaaagacc cccctctgcc tccatggagc tcagcccttc ctacctcagg 77013025

ttttcagtcc acagaagaca agcaacagga aactaggtgc tagcaaaccc 77013075

acagtgtcag ccacactggc tgcagatgtc actgctggtg tgagggagga 77013125

gagcacccca gcaccatgca gctccgtgca gctaccttcc aaagctgctg 77013175

ctacgtcttg cttccccacc tgtggcccat gctggagctt tcccagtcat 77013225

cttcaggtgt aacccaatcc agtccaagct agtatcacaa tttcactctc 77013275

attcaattta aagctcccca gttccccgac tttcactgga agcctctgat 77013325

ggggaaaaga gaacagggtc agtttcctcc cttgccatgg ggtacccaca 77013375

ctgcactgcc agctgcctct ggggtctcca tgggggggtg gtggggcaca 77013425

ggccgtgact gtaaagggga gaaacatctc attgccctgg tactgttgta 77013475

actggtgaca gtgaatgcac acaggtcagc cctttctctc cctggcacct 77013525

gggcaggttt tttggtgacc ctgccccccc ggagtccctg accactccgt 77013575

tccctacagc cttccacttc caacctctcc cgttgcaccc aatagtctgc 77013625

tccactcagc ttctcctagg ggctcctctc tccctgtcag gctattctca 77013675

tggacagaat taccaggcag ctcttcctgg ctaccttcca cggcccccac 77013725

ttggttccca gggaagattt tggtgccagt tcttggacat agcaggtagg 77013775

aactcggacc aaaacccagg tgtcccccctc caaggttgga ggcttagctg 77013825

tcctctgata gatgctgtat tctggagtgc caggcaaggg agcatttgaa 77013875

aaaggctctg ctccccttta aatggaacct ctggtggagg aaggtgtgta 77013925

gggcgagagg ggaggtgatg aggtgactca tttcttccag cctggcccca 77013975

gctgagggaa ggtgtttctg gtcggggagg tggcaggcag gcggggaggg 77014025

ctcggggagc tgctgcttgc tgaactgccc ctgggtgaca ggccctgagt 77014075

gtggggcttt gcagagaggc aaagtaatgg gaagttaaca gccaagatcg 77014125

tggcttggga tatctgggtt atatcccagc tgcacccggc aggtccctgg 77014175

gcagattggg taacctctct gggttacctt ttcctcatcc ataaaatggt 77014225

agtcatcacc cctagcccag tatctgcctt gtggtgagcc ctgatcttga 77014275

gtccactgtt ctcacctatg cgcacgattt cacttgcttc tcgggtcacc 77014325

tctaggcggt gagaactatt aggcccattt tcacagggaa ggaaacaggc 77014375

tgagaagggc cagggtcacg ggaggtgtga acccacatct agtcagtcag 77014425

acccttccca gcctctcaaa caggcccgag taccctctct gacctgtggc 77014475

ctacactaac aggactgtgc cctagagggg cgggctgtca gggcccgaaa 77014525

gggggttagc ctcctgcccc cactttccca atgaggaaac caggtcctga 77014575

gaagtaaagt ggcttgcttc aggccctggt gtctgtggtc tcgcccctgc 77014625

agccaccaag agttatgggc gtgaaaaggg ggaagtggcg gtagttacag 77014675

agggtgcttc tccactcaag ccgtgggggt gtggagggcc ctggccggct 77014725

cacaggcctg ggccgtggct cacaccaaca cccaccagag aatgaagcca 77014775

gtaggctgtc cctgacagaa cagggcaccc aggccttggc cacactgcct 77014825

caaggcagag gcaggaatat gtttcctccc aagagcctcc tcctggagtt 77014875

ctgggatgcc gcctgaggcc gatggccaca caccatggac ggcgagggct 77014925

gggtcccaca tctggctcaa gtgagcctcc cagaggaaga gactgtgccc 77014975

gctccccacc tggcacccct aatccaggac gggttatcct gggtgccaca 77015025

tggctgggcc gtgaccactg gctgttcatg ggttacccag agccgcactc 77015075

ctctgaccca gcctgggccc caggctagcc tctgtgaatc cacagtaact 77015125

gaattatagc ccaaaataca gctttgattt gaggtggaga taatttgagt 77015175

aatcattttc aagagttatt ttttcaaatc atgtttggat gttccaaaat 77015225

agaaaatggt tcctgggctg tctactaaat ggctgatgta ggtatatggc 77015275

tttggggaca ggttgacctg cattcagatc ccaaactctg ccctttaccc 77015325

attgagtggc tttgggcagt ctctttccct gtttgggcct cctgtcccca 77015375

tcttcgcctc ccgagatctg tgttgtggtc aggaagataa cgctatgata 77015425

cccttggtgc agtgtgtgcc aggtagactt gataaataga gatttcacaa 77015475

agggcagggc cacaggcagc attcggatga cagaggttgg acaggatgag 77015525

gggagatgga ggtaagagga gtgggggaca actagggtag gtcccctggg 77015575

ggtgatgctg atgctgggtc ttgggtggca gacccacatg actgattaag 77015625

ttacaggatg attggttcat tcatttccta aacacatcct gagcctgact 77015675

gtcccagctc agagcacgga gtcagaccca tgccctcgag gaagtggcag 77015725

gggtgggggt gaaggaggag ggcgcgggct gggggaaggg gtgcagggct 77015775

gggaggcatc gtgagcagcc cctggagagt caggcacttc ctcggaacat 77015825

cccagtcctt gtgacagtag ctcactcggc cacagcccct gccagcagcc 77015875

caaagctctg agcgggggac tgggcgggat cctggagcct gcagcctctg 77015925

gggacttgag cacggcggtc acagcctgca gggcctctcg ctgctttctg 77015975

actcctcccg aatggccagc gtaggttcgg tttgcttctc tttccactct 77016025

gggggcctcc ataaggacag gagaagggtt cccttggcgt cagggctggg 77016075

tgtggggctg ggctccaggt ggcctctcca gaggtatcag gaaggaatga 77016125

caggtcccct gagagtccgg attcttgtcc tgactctgca gcgtcaagca 77016175

agccatttcc ttctctggcc tcagtttcct gaggagtgag ggaagccgca 77016225

caaggtggtt cccagttctc agggcggggg ggtctgtggc attctgacat 77016275

gaatgctggt gtccctccgg gcaggtgcag gaggctgagg ccccagattt 77016325

gtttttcttc ccagccgcca ggagctctga cctgagggtc tggagtgagg 77016375

gcagaggctg aggggtggga aggggagggc tgctggctgc aagcagctgc 77016425

ccaccaaaac cacagaaatg gaagcctggt ccaagctaac ccagtgatgt 77016475

caacctggac atgggggtgg gcgcctgcct ctgaggctgg ggggacagct 77016525

tctggccttc caggctagac acgctgcttg ttgctctgtg gacagctgag 77016575

cctggaccag gccctcctca ggaatttcta gggatgctta tggagggggt 77016625

aggagcttgg ggtcctaagt gtcctacagg ccaggagagt ccacctgctg 77016675

agggtgggct ggagtttgtg gggagggggg gcactgttgg ggcaatttat 77016725

gccattgcta cccctacttc agattcttct tagaccttgg agaatacctt 77016775

ctccttccag cacctgactc aaatgcctct tcctgcagag agctctcctg 77016825

gatttcgact ccatccctgt tcccctcaca cccctaaggt ggcatttgag 77016875

gggagacatg ggtcagggga aggagtacca ggctttacct gagtcatgtg 77016925

tgtgcgaccc tggagtgtgc gtgaccttgg agactgtaat gtgtgtggtc 77016975

aggggagctg ggacttcttc ctccagtctc tgaggcttta ggggtcctca 77017025

gggatagaaa ggaagacaga ctaggtgcgg aatgtcaggc ctgccttggt 77017075

gcagttggtg acaaaaatcc tgtctcccca gcacctctca agctcccctg 77017125

gagtaagcct gcgtgcagtg cctgggagag ctcagggggt tgtggcgggg 77017175

atcctggccc cgggacccac tccccaagcc tgggaatgtc ctgggagacc 77017225

tctgttcctt catagtcctt aaagactacc tccctccccc aacttctcac 77017275

acccagcttc ccacaccagc agctcagaca cacacctgga atccactgca 77017325

cagtgagaaa ggagaattgg gttggccagg aacaacagcc agggcaagca 77017375

gggcaagtgc caggcagcag agggtagctg tccctggaga gttctctgag 77017425

gctccccacc ccacccccagt ccagaggtga atgtagggtg tgcttgcgca 77017475

tgctctgacc tggactgaag tcaccctcca tgcccacctc cctggatctc 77017525

cgtgaggggg ggtttcctga gcccacagag agcccagcgc agcatctggc 77017575

acatggctgg tgcccaagaa accgcaattg ctgtgatggt catggagact 77017625

gcacagtgct gaggtgaagg gcagggaccc cagccagaca gcctggggtt 77017675

caaggccagg ccagccactt tccagctggg ccgctctgga tacgatcaca 77017725

tgtcaccctc ctacacctcg gtttccccac ttagctgaga tagggatatt 77017775

ggaagggtgg cactgtgagt gagtgaattt caggcctggc tgtcatcagg 77017825

gggacttaag ggtggctctt cccatctgct atctcatgct gatgtgtgtc 77017875

ctgtcctgtg agctctccag atgccaggcc cggcaccccc ggccctgtca 77017925

gctgggtggg gctcacttat gtacctgtca cctctgcaga tgtgagggga 77017975

cctcctgtgt gcctgtgtaa agccaggtct ggagtcccaa gagcttgccc 77018025

tgagcagggg agatggaggc aggagggagg ctgttcccag agatggtggg 77018075

agggtcccca cagggctgtg ctcagtgtcg cctggtcgtg gccctcatgt 77018125

gtccttctgt cctgtgtcac agTGCAGGGA CTTCACAGCC CACACGGGCT 77018175 T20M

ACGAGGTGCT GCTGCAGCGG CTTCTGGATG GCAGGAAGAT GTGCAAAGAC 77018225 K34T

ATGGAGGAGC TACTGAGGCA GAGgtgagct gctgggcagg ccatggggag 77018275

cgcaggcagg aagcaggtgg cttccgctcg gctcctggga cagtggacga 77018325 c.137+47G>C

ggcccccatc ccagccaaac tctgtcagaa cacgccctgc tttaaaaaac 77018375

tcttctgtgt tccctcaaac ctgggcctcc cccagaggtg gcaagtcact 77018425

gatgatcttt caaatgccct ttttttgca gGGCCCAGGC GGAGGAGCGG 77018475 A49V E51D R52Q

TACGGGAAGG AGCTGGTGCA GATCGCACGG AAGGCAGGTG GCCAGACGGA 77018525 L57R R62W A64T T68M

GATCAAgtaa gatctcccgg gccctggggc tcactcctct cctctgctgg 77018575

cagtttctgg gcctttagat gaggtttagg tcttcctggc atgggggagg 77018625

ctgggcagaa ccagggtagg tctggattgc tccttggtgc ctggttattg 77018675

ggcattcagg gtgaggccag gttctgtgag ggaggaagcc cgagggtctg 77018725

agttctggaa agggtctggg caggggagac aggaggccat ccatcctcag 77018775

tcatttgcag cgcagtctgc accagcctgg gtggcctcca ctgaagtcct 77018825

gaggggcagg tgacaggcgt ctccactggt ggctcaagtc ccctgcagca 77018875

ctggctcagc atgggcttca aggatggaga tgtagccaga gacaggggtc 77018925

caggagggga cacacctggg ttccggtgtc agctcctcac cccccagctg 77018975

tctgaccatg ggctggctgc tgacacactc tgtggctccg tttcctcatc 77019025

agtgatggga aagtaacgca gccctcctca aaggaagaag tgggcccatg 77019075

ggcttagctg aggcctggtt agagggcagg ccgtcaggga agtggctctg 77019125

atgaagcggg agtctccagc cccacaggtc tctgcacgca gactgctggg 77019175

gtgggaggcc aggtgaggag atgaaggtga gttcaggaca cagccaccct 77019225

aacagtggag tggaggggct gctctgggaa ggcccagact gtccccctgg 77019275

gtgaggacag agccaggcca aggggcagac agaccaccgg cctccaactt 77019325

cttgaaaggg ctctgcagag tcctcctgcc gaggggccct gagcctgacc 77019375

ctgcagctgc tgtggaaccc cttcccttcc tgccttctcc cccgagagag 77019425

gaactgaatg tgccatactc tgaaggtccc ccaaagacac caggcaccct 77019475

ggcggctcct gcttccaacc aggagccaga gatcacagga aggcttagat 77019525

gtggcatgag ccgtgtgtga ggccagaaag ttgcacacag ccctgggagg 77019575

acggagggct ctgaggagcc cttggagctc tggtcccggc tcggccaatc 77019625

tgagctgtgg gactgtgggc cagtcgccta gcctctccaa gtttgtttct 77019675

cacctcccac tccagcgagc tgccgtgcaa atcaacaaga acatggtctg 77019725

agggcctccc aagggaaggg ctgagggccg ggtgcaggct gggcacagag 77019775

gagggctcag gacatggtga ggagtgaatg gacgtatgca gggaggtgtt 77019825

ttctgcagga agcagtgccc agagctctca gccaggggag gagcagctgt 77019875

gggggcctgg cagcatgacc aggggagccc ctcctggtct cctggcctcc 77019925

cagcctccag gccagctgga agagaacttt cccagaaaga gagggtacct 77019975

catggggaga actcagagac tcaggagagg tggagagggt ggccccagca 77020025

gggcacaatg ggagccaggc tggagtgggt ctgtgtgatg caggctcagg 77020075

ggattgtgag tcacagggga tttacagcag ggaaagagaa gctacccaca 77020125

gaaaatacaa tgggggtggg gagcagggtg ggcctcagga agcaggaggt 77020175

acgcaacatc ttgctccatt tgtagaacta ggaaggggcc aggtggaggc 77020225

tctgggcggc cctgattgcg ccatggttat tcaaggccag gtggggcagg 77020275

gtctgccctg acttatcctt tgtgtggccc tggatggtcc tccctgtctc 77020325

tgagtccagg gtctgtacct atggaagggg atggtcactt ggagaggtgt 77020375

tctgggcagt cacaaggaca agcagagagt gccaagccac aggggttcac 77020425

tgcacacagt ggggctccat agtgttgctc ttgacccatg tggcatgaag 77020475

tactgttgat gaggccatgc agctgttcct ttcggtgtag gccaagcatc 77020525

catcctccat ccatttagtc accatttaat tgaggaccta ctatgtgcca 77020575

tgccctggat gggtcaggag gattcactaa tttaaaataa aataaagggc 77020625

tttgccattc cttagccaga gtccagcaca gtgagggtga cttccttctc 77020675

cttcctagtc ctttgcatta gggcccattt atgcgccacc tcctccagga 77020725

agccctccca gacaccttgc cttgccttac tgtcagagtc ttggcttaga 77020775

cccaattacc cctccccatg ccaacctgaa gggcttttgg tggggaagtg 77020825

tgagcagtgg ccgtggacct gtttcctcat cttagactcc tgtgggggggg 77020875

gggggtgtgt gtgttggccc tcaggaaagg tgacccggct cttcaacatc 77020925

ggggctggtg gcccaccctc cagggcccat ccctgagtag gggaagcccc 77020975

tggcctccct gaggcccaca gctgcccccc aggtctatgg gatgctcatt 77021025

ccctgcccct tgcagaacgg gcaggggact gggggatggg aaggctagga 77021075

acagggtgca gaacgaggac aaaagccagg tggttaagtg accctataaa 77021125

tagcctagtg agccctgagg gcagaactgc tgcctgaagg tactgcattt 77021175

ctgcagtccc ctgacctcaa accagccggg agccaccctc aggcctggag 77021225

gctcgggcca ctgaaattaa caggaggtta catcttaagt gatttttgac 77021275

atgtacctcc ttcacatgtt aactcagcaa acatccgtgg ggcagtggca 77021325

atggaggatg gacaagtaag acccagtccc caaactccag ggatccccac 77021375

cagcgctttc agtgcatttt aaagacagca ttagggccag gcgccgtgcc 77021425

tcacgcctat aatcccatca ctttgggagg ctgacctgag gtcaggagtt 77021475

cgagaccagc ctggccaaca tggtgaaacc ccgtctctat caacaatata 77021525

aaaattagtt gggcatggtg acgcgagcct gcagtcccag ctactcagga 77021575

ggctgaagca ggagaatcac ttgaacctgg gagacggagg ttgcagtgag 77021625

cccagattgc accactgcac tccagcctgg gctgcagagc gagactccat 77021675

cttaaaaaaa aagatagtgt tagtatttgc agggggctta ccaacattgc 77021725

tgacatcaca tgtccagccc tgcagagact ttgcctgact ctcctttcca 77021775

gcctctgggc ctttgctcct gctgttgccc tgttgctccc ctgcccagtc 77021825

ccacccatcc ctcaaggcct gcctgaaatg tcacctccct cagaaagctg 77021875

tcacctccac tcccctattg ctcatcctgc gtcaggtaag gtgctggggg 77021925

tgctgcatgc ccccagaagc tgcacagggc aggggtttgg gaaacaaagg 77021975

aaaaccaagg caaggccagc ttcctgtagc ccctctgtgg ttaccagtgg 77022025

gcaggtacag cccccaaggg gtgcaagttt gaatcctcac gtccctgcct 77022075

cacccccagt tgtcacaaac caaaaatgct gtggttttcc tgtcagagag 77022125

atttttaaaa tttttttcat ggtctctctt cctctgaact cagagagaat 77022175

gacgacattg ctgaggatat tggcgggaga gagccaggcc ctgttcctgt 77022225

cagatgtccc ctgacgctgg ctcatcgtgg gcacagcctc agcacaggga 77022275

gccgagaggg ctactcctgt cagctggtgg gcaggcagca gggacacagt 77022325

ggggtcagag caggaaacac actggaaatc tggactgtat ttgagcacag 77022375

aatttcagac tgagcttcct gagagccgag tcaaaaaggg caatgggatg 77022425

agttacacat gaaggcactg gtgacagatg gcagtaggca gaggcctgtg 77022475

caggaccctg tcttcaacat gcgatggaga cacagtagag gtgctcaggg 77022525

agatcttgac agtttccctg cacagacggt gggaggaagc aggaatttca 77022575

tggggcagag aatgacttta tgtggccccc agatcctccc caagatcaga 77022625

gctcaaggct gttcactttg ggggttctgg ggcaaagctg ggctcctcct 77022675

ctcatccaca gagctgaggc tgcctccttg aaatttcatc tggggccaag 77022725

aaagggagga gtgttctggg ccttgttgtg tgagctgaac tagggtggcc 77022775

tgatggttcc agcaacgggg acaggggacc tggggcagga aggcctgcag 77022825

cccaggggac aggaagaggg gcctggaggg gccaaagcct gcctgcccag 77022875

gtaccccaga cagaggtagc accagtatct atgcagtacc caaggcctag 77022925

ccaggtcatg gggacaaatg ggagttcaag gtgagcacag accatcactg 77022975

tcaagactgt cccaggggtg ggacagaggc tgaatgtcca cctggcagtg 77023025

ctgtacgttc aggcaggctc ccagctttca ggtgggggct gggaaaaggg 77023075

ccagcagctc ccagaacctg cgattcctta cagcacccct cagcctgaga 77023125

ccatgaaccg gggtggccca caggtgggtt tggggttgag aaaatttaga 77023175

ttatgagcct ggggacaatg aggaggagag ccaggcattg cccctgtcct 77023225

caagggctca tggttcagct gcgtgacaga catccgctgg gccagcccaa 77023275

agtgacatca gtgctcagaa aggacaaaag aggatgccag gcaaagatgc 77023325

agcaatggag atgggcacgt gcaaaggccc tgaggcaaga tggagcctgg 77023375

cacctggaag caacgggcgg aggggcagag agcagggctg acaggtggga 77023425

ggtggaggtg gtgcggcagg ggctgcagcg gtggtggcag ctagcgtagg 77023475

acagtcacga gatttaggag ataaaataga aggtggcggc aaggaaggga 77023525

gaggacagag cctggtgtga ctcctgggtt tctggtgtgt atagctggtg 77023575

gacagtggtg tctttgccaa gaggggagcc ctggaagagg agaggtttgc 77023625

agggcaggtg ctgagtccgg ttttggacac gctgaatttg aggtatctgt 77023675

cagatatgag acccaaaagg tgagggcggg gaagtggatg tgcaggccct 77023725

gagctctggg aggggtctgg gtatgctgtg gtcatgaagg aggcggggct 77023775

ggagggtggt gtgcgtaagg gctgggttgg gggtgcgggg accacgctgt 77023825

gcctggaggc ctctaactga atgagtggga ctgagctgag gggtgaactg 77023875

acaggaagca gagggattgg aggtgccact gctggtgagg agtcagagaa 77023925

gagtcctgag ccccacaagg gaaggtgggg tcaccacaca gccacccctc 77023975

tccttcttcc tctccctggt tccgcctctt accgcagggt ggccacgggc 77024025

gcagctcctt cactcctctg acccttggct tctcatctgt gaaatgggat 77024075

aataaaggca cctgtgctgg cagagttgtg agcagttctg acgtctggat 77024125

gggcatcagc agcgcttggg gccgggcccc accccgaagc ctcagcctca 77024175

ggaggtcggg gaggagcctg agaatctgta tttctaacag gctccgcgga 77024225

tgctgatgcc gctggtctgt ggacctcact ttgggatcca cgagtttagg 77024275

gcgaggggcc tggcccccac cgatctcccc caggcctgga tccccaggct 77024325

cctgccaggc tactgctcct ccttggcctc tgcttcccca ggtgtctact 77024375

gagaggagaa gccccctgag aagcctgcct ggtgcgctgc cccctccacc 77024425

cagggctgtc cggtgggcgt catgaggcca tatggccgcc agggggcagc 77024475

cgagctgctc cacagagagg ctgcagggag agccagataa aatactggat 77024525

gcccaggtga acgtgaattt cagataaaca acaaatactt taaaaataaa 77024575

agtccgtttt aaatactaca aggggcatac tatactcaaa aagtgctcgt 77024625

tcatctgaga ttcacattgc actgggtgtc ctgtttttat gtgttcattc 77024675

tggcagcccc cgcccatcat tccctgcctc ctatgcgcag tgctgggccc 77024725

ttccctccct ccctccctcc ctccctccct ggcagacagt gcccacctct 77024775

caactcctgc gccctgccct gctagcctct cccacggcca tccaacctcc 77024825

tccaaacatc ccccgggcca cctgctgaga gcccatctga acactgtccc 77024875

ctcccctgta gcctcaccct ggggccattt ggtacctgcc gaggagagag 77024925

ggctgtgaat gtgggagagg agttcagggg agggagggag ggtcctgaag 77024975

acaatcccct cttctctaag aatgcagcta ggagcacaga tggtgggggc 77025025

cttcggtacc tcctccttct gccacattgc agagggttga ttgctttaat 77025075

ttgcagagag ctttgtcttc cagaaatcag tctggggccc cagtggatgg 77025125

tcaccatctg gctaaagggt cccttggttc tagagtgacc cagggtcttc 77025175

ccaccaaaat aaaagtcctc cccactgccc accccgccgg gaggcagcct 77025225

ggactgtagg ttcccgctgt gctctcctcc tcctgacctg gacccatctg 77025275

ttttgcagCT CCCTGAGGGC CTCCTTTGAC TCCTTGAAGC AGCgtaagtc 77025325

ccctaccctg gggcaatggg atcttttggg actgcgaggc tggtggaggg 77025375

tttgggggga cagaagatga ggtgttgggg ctggggctgg gctggcccac 77025425

acgggtgagt tgtgggtggc tgaggcccat cagatctgac actggggacc 77025475

agtatccatg ctctgccccc agAAATGGAG AATGTGGGCA GCTCACACAT 77025525

CCAGCTGGCC CTGACCCTGC GTGAGGAGCT GCGGAGTCTC GAGGAGTTTC 77025575

GTGAGAGGCA GAAGGAGCAG AGGAAGAAGg tgaggcaggt gcaggggcg 77025625 E110D

ggggagctgc tcccccattg ccagcctctc agttgctgtg ggggtagggg 77025675

gctgaccttc ctggtagagc cagtggaggg cggcaggggt ggtggtggga 77025725

cagcactcca ggctttgggg cttgagggtg atctgaagtg ggtagggagg 77025775

gcagaggcct ggccgctggc actaaggcca actcttagtc ccagagcccc 77025825

atggaaggtc cttcctgtcg agctgcctca cgcctaggag gatcctacta 77025875

cagcagactc tagagggtct gtggcaactt ggcagtgtcc agaggaggca 77025925

gtctgagttg tgggggtcac tggaaactgg tcttgagtcc aaggatcagg 77025975

gctgattgtc ctggaaaaag gcagacttgc agccagtcac cccacaggac 77026025

tgcccaaggc tgaggggtca gacacagact ggggtgggag agttgtatgg 77026075

cattgcttag catccaaagg tacttctcac ccatatgtag ggcatggctg 77026125

tcccgagaca gagtgactgc atggaagtga agtccccatc atgggaggtg 77026175

tgtaagcaga ggctggcaga tgcttgtcag ggaggctgca gggctgaagt 77026225

tggatatagg ttccctggag ggcaggcagg acgcagactg gcctggaggc 77026275

tgggcttggg cctgtgagga tgggggctga gcctctcagg gccttagtga 77026325

tgagggtggt gccctgcaca gggtggcagg gcagcacaca gatccgcttc 77026375

ttgcctgggg aggaaggatc gttgtgaagt ggccaaagaa ttgaaaatga 77026425

aaagtcacaa ctgagccttg aaggggaaga agctgtacct gaggctgggg 77026475

ccaggctagg cctgggtgtc ctggccatac cacttcccat ctctgtgcct 77026525

cagtttccct ctcacaggat gggacacata tgtctacctc ccaagtgctg 77026575

ggagctcagc ccaagccatg cgcccctcag tctccacaga cagggctcca 77026625

gctctggtta gcagctctgc tggcagaaat gtagcgtggc tgcccgtgcc 77026675

acctgcccat ctgccagctg ggctttcagg attctaaatg tggggttctg 77026725

agcagacagg gggtccccag aagccagccc aggcttgagg tgccggagca 77026775

ggcaccctct ctgagctggg acgtgcccgc agagcctgca gagaacctgc 77026825

caggaaggag ggaccccggc cctgctattt tgggccctcc tgtggccaga 77026875

ggagctgcac tggctgcaaa ggctgttttg gacagagcat tctttctcca 77026925

agtggccagg gccccgcagg cagagcgctg tgttgtagtg tgtgccatgt 77026975

gtgtctgagc ctgtgtgtgt atgtgcgtgt gccacagagc aaggacatgt 77027025

gcttacagga tggtgcacac gtgcctacgc tcccctgcat atgcctgtga 77027075

gcatgtgtcc ttgtccagcc ctgtgcactt gggtgttttg tgctgtgtgt 77027125

gtgtgagtgc ctgtgcctcg ctggtctccc agctggcaca gaacccctcc 77027175

cctgagaccc caggcacaaa ctggctcagt tctcctccta cctcataacc 77027225

cagtcgctgt cctggctgtt ttgccttctc tatcagaaca ggaagcctgg 77027275

gaggtgaggg gaggctttgg ccccagacct cggcacaggg gcccagtggc 77027325

cactgtgcct gcatgtggcc tgtggttgtg tgtgggtgac tgtgggagtg 77027375

tgtacttgtg agtggcatct gtgggtgtgc acaggaatgc ctgtgatcat 77027425

gcgtgtgggc agctagggat ggggcctgtg tgcctccgag ttaatgtgga 77027475

actctgcatg tatgtgtgtg ccagagtgta cacacacgtg tgagcgactg 77027525

tgatgcctgc agaggctcag ggatgcagga tgaacgactg tgtgcgcacg 77027575

tgtgttgggg tgggaactcc ccagctggag acgaagctct ggccaaggtc 77027625

tgcagcaagg acctcacggc acacccatgc cctgtgattc tctgtggcct 77027675

tccattgtga gggtcactgt gaagcagcag gctctggggg agggagggca 77027725

gcctgtcacc ctctctccag agccaggaga ggtgctgcgc ctcatcccag 77027775

ggacactccg tcctcttggc ctaggggagc ctcccgaggc cgcggccctc 77027825

ggctcagaac ctcgtgtccc ctgcagTATG AGGCCGTCAT GGACCGGGTC 77027875 Y119C V122I M123_L416delinsT M123_K128delinsTMLLSQ D124_K128delinsGMLLS

CAGAAGAGCA AGCTGTCGCT CTACAAGAAG GCCATGGAGg tgagcgccag 77027925 L133_K136delinsPPDP)

ggcctggggc cgcggccttc cctcgaggag cagcgcaggt ctcagggtgc 77027975

gatcctgggc tgtggccccg ggcagggcat ttggaacagg ctgacctcag 77028025

ccttggtcct cggacctcgg ccttgggcgc accagcctgc ggggcgcttg 77028075

ggcccgtgct gggcgctatg gccccgtggg gatggtcccg ggcccttccc 77028125

ttgtggggct cgtgaatgaa gggcagatga agtcagctgg ggactccagg 77028175

ggtggaggga ggagggaccc ctgagcttga tcctgcgaga cgctggacag 77028225

gaagggagag gggctcctaa gagggcgcgg cgtggcgagg ggcgtggcga 77028275

ggggcgtgcc ctcgccgaag agcacagccc aggaggcggg gcccggggca 77028325

ggccgcgctg tcctcagtgg ggagggcctg agagcaggac taccagcagc 77028375

ccccacgcct tctctatctc cttccggacc cccagatccc tgtccctggt 77028425

gaggatgccc ccactccacc cgcaaccctc gccagggaaa aagggaggct 77028475

gggctaaggg agcctcactc ccggggacca cagaacaggg ctgtgcagcc 77028525

cccaagtcac gcccctccac acccccagTC CAAGAAGACA TACGAGCAGA 77028575

AGTGCCGGGA CGCGGACGAC GCGGAGCAGG CCTTCGAGCG CATTAGCGCC 77028625 D150E

AACGGCCACC AGAAGCAGGT GGAGAAGgtg cgctgggctg ctgggccgtg 77028675

tgggtcgccc agggctgggg gcagtggggg aggcaaggaa ggggtgccgt 77028725

agacaccccc aggcaagatc tgcatctggg gatgctgctt agccctctct 77028775

gacccccaat ctccccatct gtgaaatggg tttcctggag agaacctcag 77028825

gccatggaca ggcaggtcag ctggatcccc tttgccaccg tcaggcggca 77028875

ctcagggacc cattcctcgg tgcaggccca ctgaggccca cagggtgatg 77028925

agagcagacg ccaaccctca cacaaccttg gagaagggct cagtaggccc 77028975

atgtcacaga gaggaaactg aggctcacag taagtgactt gtctaaggtc 77029025

tcagagccag gaagcagcag aaaagggacc cccaactcag gtggtctaga 77029075

gcccatgctc ctgatgctgt ggcccctagg ccagagtggg ggtatcagag 77029125

ctcccagagc ccaggaaaca catcactcat tgcacagaca ggaaggctga 77029175

ggcccagaga gggaagtggc ctgagggtga gctgggggca gtcagtcagg 77029225

ggccagagcc caagtcccag ccaggggct cagcagtagt tgcacctctc 77029275

ctgtgggttg tggtctcact cttcacaggc atcctcctgg gctcggttcc 77029325

tgtcttcgtt ctctttccat ggagctagcc tgtggtcctc tgtgggcgga 77029375

ggttgcttgt ggatgatggc atctgcccat agttggctcc tgaatgttcc 77029425

ccccagggtg gccggggaag cttgacagtc acttcaggtc tgctggggtg 77029475

ggccctggct cctggggcag gggcttagcg ctgcttcccc tctgtttcct 77029525

cagAGTCAGA ACAAAGCCAG GCAGTGCAAG GACTCGGCCA CCGAGGCAGg 77029575 G543A

tatgtgggcc tggctgcccc gtccgaccag ggcggaggcc tgggcggtac 77029625

tccccacaca cacctcctca ccctggggac acacacactc cccctggctg 77029675

cacaatcatg ggcgcggcgc tctcattcca gatatgtgcc gtcaaagtaa 77029725

acgctgtgtt cccccattcg ccagcccttc ttggcgcttc atgtgttcag 77029775

tcctcacagc tgccctccga ggtggctgct gttactgttc cctttcttaa 77029825

cagatgagga aacagaggca ctaaaaggtc cagtacttgc cccaggttac 77029875

agctgcattt gaacccaggc catcgggctt cagagcccag gacttgtgca 77029925

catagccttc tctgggcctc tgtccttcac ttgatgcccg aatcctacca 77029975

acactcttgt ccctgctggt gccccaccca ccagacacag cacccaccct 77030025

cctcccttcc cctgggaagg cctctccctt ctgctctgcc tttactggga 77030075

ctcagctact ccctcggctg ggggacaggt gacctccaga gatctgggca 77030125

cagaagttgt gacccaagcc tgtgggactc cacccctcct ccagcgccct 77030175

ctcagctgcc ttctctgaac ctcagtttcc cctctggaaa gtgaggtggg 77030225

gcgcccagag atgcccagag gccaatactc tggacttgca tatatgaggc 77030275

tccactccag ccctcaggca gctcagagca cagttgggga gcagcagcag 77030325

caccagcgtg ggtggccctg acgggcattc agatgaggcc ccgccatctg 77030375

ctagggcagg tcccatgggg gaggcggggc tcccagtggg aggaggcatc 77030425

caggatggga cctgctggag tacaggggtg gaggagctcg tgtcagggcc 77030475

ctccctgagg ctgcctgcgc tttcagAGCG GGTATACAGG CAGAGCATTG 77030525

CGCAGCTGGA GAAGGTCCGG GCTGAGTGGG AGCAGGAGCA CCGGACCACC 77030575 R202W R210W

TGTGAGgtga gtggcccacg tggagcctcg ttttccccag ctgggaagtg 77030625

tgagacgccc atccctactc cagctgctta aaggggccca agtgaggcag 77030675

ttggggaagg tacctgttac tcactcgttt attcagcctc ctgctcacag 77030725

gcctgtgctg ggccctggcc ctgttgcttg tcgcctggcc ttgagtcctg 77030775

ggccccttcg ttgcaggcag gcattcttcc accctctttg ttgaagccaa 77030825

aactgggact tggactaaac ccacagcctc tctgggtgct gccgatggac 77030875

agggcctggg gaacagggct caggactccc gtccgaggtc cctctcacta 77030925

cccttctgcc tcggtgtggt gcagcctgaa gggaggctgg ggcagggacc 77030975

ccctgggcat ctccacctcc ctccctgcag cctcagggct ggcccggagt 77031025

cgggatgggg accccagggc actctctcct ttggactggg cttccagcag 77031075

agagggctgg cctggtcagc tccggctgag ctgtgaatgg ggcccagcct 77031125

ggccgggccc tgcagccgcc tcctcactgc tcacctccct cccactgccc 77031175

ccagGCCTTT CAGCTGCAAG AGTTTGACCG GCTGACCATT CTCCGCAACG 77031225 c.C850T: p.Q284X Q219H E220_I226delinsDRQFHPG

D222_L416delinsSTRKCG) R228C A230T

CCCTGTGGGT GCACAGCAAC CAGCTCTCCA TGCAGTGTGT CAAGGATGAT 77031275 N236K Q237_M240delinsRHRQ) S239P Q241R D246N

GAGgtggggg ctgagggcct tggtgtgggg taaggtaggg cagcctctag 77031325 c.741+27G>T c.741+33_741+34insGT

gcagcaaagc acccaggtcc atctgagccg gtcaacaagc acctggtcct 77031375

ctgtgatcca agcctggccc caggggtctc aggcctcagc agctcagcct 77031425

ttgcccccag aaccccaaga caggagctca gtaccacaca gggccatggc 77031475

ttctctgcct ggaagatgat gactctgtgg ttcccctgac ttcctcctta 77031525

tgcctcagag ccacagagca cctgcccccc ctgccgggga tgggagggga 77031575

ggtggacaca gctgtcagag gttggcagaa gctggaggac cgtggctgct 77031625

ctgctctagg cctggtgctt gcaggagccg aggcgcagtc cttcctctgc 77031675

tccccacatc tccagggtgt cctggttccc cttactgagc ccaacctgct 77031725

gggtgggtcc tccccagcag agagggcccc cagccagggt ccctgagctc 77031775

tgtggatgga tgcagcccag cacacggctc tcccgggcag ccctggcccc 77031825

cttgcctgct gtgtttcctg cctgacgctc ctgtccgggg ctgtgggggt 77031875

tgattttctt gttgtttttg cccaagtgac tcgagccccc tgctgcctcc 77031925

tcgcctcctt gaggtagaag ggcgagctct ggacccactc tcctagcccc 77031975

aaggcctggc tgtgctgcat tctcgctgtg accttgggca agtcactctc 77032025

ctctgagttt cctcatctat ccaatgggaa aagtggggtc taccttagag 77032075

gacaggtgtg agttaagtcc cttgcacagg gccttgcaca cagaaggtgt 77032125

tcaggaaaca ggaagctgtc agccagggcc gtgacccctc aggatcaaag 77032175

accccgagcc gcgcacaatg gcctgtgagg aggccggtgg gtgggggccg 77032225

ctggtcagag ttcaggccca cagaggggca gagtgggcat cgggctgcgg 77032275

cctctgctct ttcctgcccc agCTCTACGA GGAAGTGCGG CTGACGCTGG 77032325 E250Q E250K V252A T255M E257K E256G

AAGGCTGCAG CATAGACGCC GACATCGACA GTTTCATCCA GGCCAAGAGC 77032375 G258R G258S G258A D264N D266N

ACGGGCACAG AGCCCCCCGg tgaggtccgg cttgcggaca gcgcagcctc 77032425 T274M E277D

taggtgcatt gagcccctgg gaaggcccgg ccctgagcct caagtgccag 77032475

gaccgggctg gggtagctca cagctccctt cagggcagag aagccctagc 77032525

aggggttgtg gggagttggg tcccaggcct gctgcctcct ctcaggcaaa 77032575

gctaagggca tgatggcact cagaggaaga ggtggggatg gggattgagg 77032625

tgaggagctc ccacggcccc cactccccgc ctgtttggtt ccactggatc 77032675

acgggtccag aatattaggt cttgatggta cctacggtgg ggtctctcat 77032725

gggagcaaga caggcacctc ctcaggcacc aggatgggcc agggccagat 77032775

tgggaatgta gggccccagc tgagtctggc agggccagaa tggggtgttg 77032825

ggggccgccc tggggctcac ggcttgctgt ctgcagCTCC GGTGCCCTAC 77032875 P283S

CAGAACTATT ACGATCGGGA GGTCACCCCG CTGACCAGCA GCCCTGGCAT 77032925 D289H P299S

ACAGCCGTCC TGCGGCATGA TAAAGAGgtg aggccccgac agacggaggg 77032975 C305C

agggcctaag gctgggccag gaagtgggtc gagcccctcc tctgcacctg 77033025

gcccttcctc gttcactgag cacctactat gtgtctgtat ctggtgccca 77033075

gtttaggtgc tgggcactct gtggagacaa gataggctca gttcagccta 77033125

tggaaccctc agcccaaggg acccagacac tagaataatc acaccccaat 77033175

tattcactag gggaggtgct ccgagctctg gggaggcccc tatgctggct 77033225

tccttgtccc tggggcctca tgtgagcctg gtgccctgtc aggctgcagt 77033275

ggcaacgctg tctggctgga gcaggactgg ggcatctgga gaattctcca 77033325

ggcttttcca gggctccttc cccggcctgg ctgcagtcaa gtgccaaggt 77033375

cctagtgctg ggcctcaatg tgtgacctgg gcaagtcatt cacactctct 77033425

aaggccaggg ccctgagtgt tggggtcaga ttcagaatct aaggactctc 77033475

ctggttcagg ccttgagtga cgaaggtgac agcccattgg gagcactata 77033525

gccagcttag ggagccctcg tagccaggcc tttgagggag gccatgtgcc 77033575

ctgtgagcat ccacaagggt ctgtgggttt cacatggtgc ctgtgccccc 77033625

accgccatgc caccactctt cagccaccct tcaaccaaga aggccctgcc 77033675

tctgggaggt agtggactgt ggggagaggc tgatgcagtt cccggccctt 77033725

cccaaggacc agctcattcc agggcctcag gagcccctgg aacttcctac 77033775

tcctgggagg cagaggctcg tgggaaccac ccgtgcttag agagggcaca 77033825

cacacaccct ctttgagaat cttgtgcaag cagtgacccc aggaggcagc 77033875

acacccgcag cctcacatgc tacaaaagct tgtgagacag gcttccctgt 77033925

gcctggtgag gacctggatc ccagcaaagg tggtcattta agcaactgga 77033975

caaaagagct cacctgaagc agtatcagga aggggcagaa aggagtggcc 77034025

ccagagagga ttagagagag agagagagat gtcctgcagg gccgagggag 77034075

gcctggctgc tggagggggc tggtcaggcc tctggatggg gcatctagaa 77034125

gccaggcagg actgggaaga ggcgggggtc agtgactggg agtcagaagt 77034175

gtagacagtc tggggaaaag aggtgtgggg gcacgcagca caatggctca 77034225

gcaagccctg cacccctttc cccctgccct ggccgcttcc tccacctgtc 77034275

cccagcccct gctggcttgc accctgtcct ttgctgcctg gggagctggc 77034325

acgtgtgtct gcccgcctgt gttggtgtca ggccctccca tgtgctgggt 77034375

ccacgcatgt ccaccctgcg catgtgtgtg cactcctggg gccttggccc 77034425

tcggcgcctc atgtgggaaa ggcccccccac atgccacctt gaattgcagg 77034475

gctgcccccc acaggcccct gagtcatggc tcagcccctc acctgcattc 77034525

aagatccctc agggtctggt ccagtctcta tttcagtcct gtcccccaca 77034575

cacccaaatt ggtccactcc actccacaaa ccccacctgt gccatgcctc 77034625

ctcccctgca cctgagccct ccctctcctg gtcacctgca gtgcctcgct 77034675

ccccttctc tcctagtaaa gcttcactca tctttgaaga ctcagcccca 77034725

ccccactaag aagccctctt gccttggagg cagtgtcagc ctctacttgt 77034775

tgagccctca ctactgccca cttcaggggg tgcccccagc atctgccgca 77034825

tctgcctctt ctgttttatt ttcctttatt cagtaaacct tcatgacccc 77034875

agctcagtcc aggcctaagc ctggtgcagg ggcaggggta aagtagccca 77034925

gcgctgtccc ggaactcctg tgaacagggt ggctgagctg gcctgatcac 77034975

cgtgggccca cagggaggag ggctggctcg gcccaggcag tggaggcctc 77035025

agcagggcac gtgagccagg ctttgtgtgg cagtgcaccc cccaccccta 77035075

cccatggggg aagctgctag ggcaagctag agcaggggcc tggagggtga 77035125

ggactgggca tcttcccacg aggcctcagt gcggaggtcc tagaaccccc 77035175

aaagggccat gggagtcttc caatgaagct acagcttcgg gggttctagg 77035225

atcctcccaa gggccctgca gggagcaggt gctgagatgg cctgcagagg 77035275

gcgccagtgg agggcgtagc tggggaagga ggagccacca ggactacttt 77035325

ctggggagcc ctcctgcctg aggggcacct cataaatgac atccatgcct 77035375

ggaggctagg ggcagtccca gccctggcag agcgcgtgca gctctgagac 77035425

ctctccctgt ctaaaccctc cctcctggtg ggtccctgag tgtggggcgg 77035475

ggacactcac cctctttcct ccctgttccc agGTTCTCTG GACTGCTGCA 77035525

CGGAAGTCCC AAGACCACTT CGTTGGCAGC TTCTGCTGgt aaagggggtc 77035575 T321P S323L

aggaggggac ccccaaacac actgatcctg gggggggagga gaggtctccc 77035625

acatggcaca gatggggcca ctgaggccct caagaggaag tgtgtgtccc 77035675

ccaacagcaa gtgtggacag cagaaggaag aggcagggcc cagcatggag 77035725

aaaccccatt ctagtaggac ttccaggggc cagtgtcccc agaaggggag 77035775 c.986-33dupA

gggtctatgt ctcaccctgc tcttagCGTC CACAGAGACC CTGACCCCCA 77035825 A329V T337Pfs*52

CCCCCGAGCG GAATGAGGGT GTCTACACAG CCATCGCAGT GCAGGAGATA 77035875 P338_A347delinsLSERRVHTS E339_D341delinsGGM

Val344Ile Y345C E352K E352A

CAGGGAAACC CGGCCTCACC AGCCCAGGAG TACCGGGCGC TCTACGATTA 77035925 R365W D369G

TACAGCGCAG gtgaggcctc tataccccaa acccacctgt gccacctccc 77035975 A372V

ctgcacctga gagctccctc tcccatccag tgccttgcgt cctcatctct 77036025

cctcatggtt tcactcatct tcgagcatcc tctcctcctc aggagggcac 77036075

gtgtgcccga gtgtgtccac actagcaagg gtacctggga gtgtgcttgg 77036125

atgtgagctc tgagaacagc acccagggct tgcggggcct cagtgtgcat 77036175

gtactgactg gaagctggtg tgcagcaggc ctgtgtctgc ccgggcctgt 77036225

acacagcaca cacgtggagc acatgtacct atgccgtcca cacaggctgg 77036275

gcgctgagtg gtgcacacgt gcggggagct ggcagagcct ggagctgcct 77036325

gcaggtcata gcttgagggc caggctctgt gcctttgggt cagggccctg 77036375

tccttcgtgg ccatgggtgt ggaaaactgt ggccagaatg agtcttgcta 77036425

tcgtgccagg attgattttc tgatgtccat agggtgagga tgaaccaagg 77036475

cagccacagg gcagctatga gagtcctttc tgctccctgc ttgaggggaa 77036525

gaatgcatag ccagacctca catccacctg gactgaggcc aagcaccccc 77036575

acatagccag gcaggctggg tgtggactcc actgatgagg ccagggctcg 77036625

gggaggcagg gaagccaggc caggagagtg atggggtact tggatggcag 77036675

tggctagctg gggctgggga ccgcaaaggg gaggcttgtg gtaagcttag 77036725

gcatgagtgt gccctgggct tggggtatga tgagcacccg tgacccctga 77036775

catgctccag tcactgcgtc tccagaatgg gagaggggag gtgaggctgg 77036825

gaagaaaccc aggttggggg agaactatga tgacaaactg agggggatgg 77036875

gaggcccggt ccgttgggtt acccccatcc tgtgtcccca aggggctgcc 77036925

cctgcccacc ctgggagaca tgccgcattt actgctgggt gggggaacgc 77036975

caggcccctc cctgcaggcc cttcctgca ggcccttcca acgtcatgcg 77037025 c.1120-44_1120-31

ctttcaatct cttggccagA ACCCAGATGA GCTGGACCTG TCCGCGGGAG 77037075 1120-12T>C D384G

ACATCCTGGA GGTGATCCTG GAAGGGGAGG ATGGCTGGTG GACTGTGGAG 77037125 c.1154T>C G1179A G395S

AGGAACGGGC AGCGTGGCTT CGTCCCTGGT TCCTACCTGG AGAAGCTTTG 77037175 G403R G403E R405C F407L V408I

AGGAAGGGCC AGGAGCCCCT TCGGACCTGC CCTGCCAGTG GAGCCAGCAG 77037225

TGCCCCCAGC ACTGTCCCCA CCTTGCTAGG GCCCAGAACC AAGCGTCCCC 77037275

CAGCCCCGAG AGGGAGCCTG TCGTCTCCCA GGGAATAAAG GAGTGCGTTC 77037325

TGTTCTCCTT GGTGTGCTGG GGTCCCGTTC TCTTTTTCTC CTGCTCCAGT 77037375 c.*156_158del

GTCCGAGTGC TCAGTTCAGA GGAGGCAAAG GAACAAGGGA AGGAGCCTGG 77037425

ATGTGGAGCT CCCCAACTCA GCCGAGGCTT CAGCTATAGT TGGAGAAGAG 77037475

gcctggcccc agttgctagg agctcccaga ctgccaagga gacacattca 77037525

cacctggaca gaggacacag gggtgcagga ggatgtggca ggggcaagaa 77037575

ggggctcagc agggctgcaa tggggagagc aggcttcttg ggggcggagg 77037625

gttgagcagg tccatggctg ggcagcagtg gccaggccag ggcaagtgcg 77037675

tgggcaaagg tgaggttggg ggtacaccca ggaatattcg gaggactcag 77037725

tttggaaaca ggaagctggt gatggatctg ttggagaggc catggtggga 77037775

gcccaggaag acaggcttgt ggcttgtggg tgcaagtggg gcctggggaa 77037825

gccactgctg cccatgacac tcccctcaac atggcaaccc cggccgagca 77037875

ggggtccaca gcccaggcac gttggccccg ggcacagagg gagctgttct 77037925

tgaaggcctt cagccccttc tcttttagt cccaggaaca taactttcac 77037975

tgctggccaa gccctgctcc aaccatgata ggcttcatcc atgccaaagg 77038025

cattgggagt gggtgtggag gagagggccc ctggccattg accactcctc 77038075

agtcctggga gtggccaagc cggcccacct cacaccctcc tgggatcccc 77038125

acccggcttc ggagccaggc aggcccagga ctgtaagggg cgggatgggg 77038175

gacacagtgg tcctcctctg ctgggaccac actgatgagc tgctgcaggg 77038225

cactgctgtt ccccatgggg agggggggaga gagaaaggag ggaggggggа 77038275

gagagagaaa ggagggaggg ggggagagag agagagagaa aggaggggga **77038325**

gaaaggaggg agggggagag agagagaaag gagggagggg gagagagaga **77038375**

gaaaggaggg agggggagag agacagaatg cccatcttta taccctgatc **77038425**

tttacttgag caaaaaattg ggttcagtta agcaagcatg agacatggac

PSTPIP1 (NC_000015.10, GRCh38) - gDNA - 2026-11-23

