

PSMB9 (NC_000006.12, GRCh38) - gDNA - 2026-11-07

gcagtgccgc tgcataactg acaacgaagg cggtagggtg acttccccag **32853241**

tgcagtagcc tggtgctatc cgcggacccg ggggctcccc atgagatcag **32853291**

ctctcggaac aaggcaagtc ccggcagggc caagcccagt gccgcagcta **32853341**

atggcttcaa agcagccagc cagccctggg cacctgcgtt ttcgctcttg **32853391**

gagccaaccg ttgccctgag gaccccgcag gcccccagcc agagcacggc **32853441**

ccagcggctc aggcccaccg cccagacccg gagcagtggc agcgcggtgg **32853491**

gcaccagcag ggagaatatg cggggcagcg cggtccggag cagcacccag **32853541**

tcggcgagaa gtagcagtac tgtccccagc catgcgagag aagctccggg **32853591**

gaggcagcgg cacccgcggg gagcgggaca cctagagcta gccattggca **32853641**

ctcggacgcc gtcccggtcc cggccgggcc tgggactctc cgcgccccgg **32853691**

tggggcctga agctccgggt accgccgagt cctcccctac tggcggctgg **32853741**

gggagggaac gagggcgggg ctctcggaaa gtcccaggaa caggctgatc **32853791**

ctgcgctggc gagaagctca gccatttagg ggaaagcgaa atcgaaagcg **32853841**

gccgcctgct cactagataa cgcctacttc caaaagtggc ctgcccagac **32853891**

tattttggta gcaagcgtgg aaatcagatc tgagaatctc gggagcagcc **32853941**

ctggtgccca attttctcca tcacgcacac ccttctcgcc tctccctgcc **32853991**

tcctgccttt ccacttgcac cagttttccc accccagcct cagggcgggg **32854041**

ctgcctcgtc acttgtctcg gggcagatct gccctacaca cgttagcgcc **32854091**

gcgcgcaaag cagccccgca gcacccaggc gcctcctggc ggcgccgcga **32854141**

aggggcgggg ctgtcggctg cgcgttgtgc gctgtcccag gttggaaacc **32854191**

AGTGCCCCAG GCGGCGAGGA GAGCGGTGCC TTGCAGGGAT GCTGCGGGCG **32854241**

GGAGCACCAA CCGGGGACTT ACCCCGGGCG GGAGAAGTCC ACACCGGGgt **32854291**

aatgggtctg ggcttgaggg ttggcagagg ggtggaggag atgcagcggc 32854341

caggggaccc tggaagcgcg cgcggagaag tgaatgcaga gaccaacggg 32854391

agcgcaggga ggtcgcctgt agcagccagc gcttgcaacc cgcaatgagc 32854441

atagagtatt tcttttctga ggggggtcgt ctagagtgtc cgtgaaggga 32854491

acaggcacgc gaggctggtg gaaaaagcgg gtgctttgac tcttagctgg 32854541

aagcgtcaac gggaagctac tctaaagcgc tttcgctttc actctggtcc 32854591

cggacagtgg gggctggtta aatcaagaaa gggggttggg gatggtgcaa 32854641

agagatgagg aaatggtgcc ctgggtgaag tagaacagca cttgggagaa 32854691

ggaaatatag gcacttattg agaaggacca actcatcaca cagacttttg 32854741

ataaacttgc cactgggcaa ctcttagccc aagcactgat aatgggcgtt 32854791

ctgtgttaac tagtgatgcc cttccctagc ttgacccagg aaggcctctc 32854841

cttggcccag atgctgcctt actcccttcc ctgtgtcttc cctgcccact 32854891

cccatgtgcc cactgggggg actttgctta ggatgggcgc ctggggcaga 32854941

tggcagcccc aagactggct ggctggcttc tgctctggac tactgccacc 32854991

actcgtggct tgggggcggc tttgttagag aggaatagcc tctaacttga 32855041

agttaaccct gttctttgac cctctattca tgataagtcg gtccgtcgga 32855091

aagcatactc agaggagcgt cctttggggc cagagtaact tacggcctgg 32855141

taagaaagac acagtgaaac cacttataat ttgggaaatc tcccctcact 32855191

gccaaatgag cagtggcaag taggaagtag aagtggaaac aagggataag 32855241

agttagacct gaattttagt cccaggtcta ctattaactc tgtgtgactt 32855291

tgcataagtc gtttgcattt tctgtgactt ggtttcctca tttgaaccga 32855341

ggatctttaa ggctccttcc aactcaatag tagaataaat gtagctttat 32855391

cttccctcac ttcttcttga ttcttttctt gacctggaaa agtcagctta 32855441

aacttctcag tcaaattatc tcttggtaca aatttacctc cctggctgct 32855491

gagatatgta tttacctctt gatcggaaat tccataactg aaacttttat 32855541

tttcaaccat ctgtatgtgt tccttgctgc ttctctcctg ccttgcccct 32855591

ggccatgcta accactgccc tcctcgattt tttccaatgt tcagtaaatt 32855641

ggaagagctc acttctgatg aaatgggggg tgagagtgga ggattgtgga 32855691

ccaaaaaaaa aaaaatagac tgaccttgtt tcccaagatc atagtcaatt 32855741

actctgtgtt gggtctacac cacatctgca catactatga gcccttccgt 32855791

tggagataat tttcacttgc ggagctgctt cacttctacc tgtaggagcc 32855841

tcatctccac ctctctacag tggagaggat tccactaggc aagttggaac 32855891

ttagggacac agttctttct gtgttgtatc acagctgggc tgtggcattc 32855941

ccctgcagcc ggatgaagca atagagaaag tggaaagatg aagggaaaaa 32855991

aagcctgtac tgacagtcag ctctggcctg ttactgtgta atctttgagc 32856041

cagtcacttc gcctctctgg gaatgtttct tcttctctaa catgagggca 32856091

tcaaggctgt tcttgccctg acattccata ttctgtgtct ctgcagACCA 32856141

CCATCATGGC AGTGGAGTTT GACGGGGGCG TTGTGATGGG TTCTGATTCC 32856191 V32I

CGAGTGTCTG CAGGgtgagt aaaagtgaag atgtatgcat ttggaaagaa 32856241 128+1G>A

gctaatggcc tcaaatacac actttcctta cccattcatg aaaagactgg 32856291

caaactggag ccttggagga atggagttga ccttccccaa aagccactat 32856341

gataagctat ttggtgggtg cttgggtctc tgaatttgtg gaggaggatc 32856391

tggggtctga atgtgtatgt gacctgtccc agtagtgtac agggatgagt 32856441

aaaggaatag ggtctgagag ggggacagga gatagatttt tgagggtctt 32856491

ctttccatct gtgcttaggg atcaaaaaga tgattctgtc aagcagatac 32856541

ctggtttctc atttaccata tattgaacta ttttgtctct tctcccactc 32856591

ctaaccaatt tcctcacatg caaaatgagt atatggggtt aggtcaatat 32856641

tactgacatt atgttccata gaacataact ctctcaagat tgttaatagc 32856691

aaagaaaatt gatgaggcat atttttctta ccttagcatt ttttgctttg 32856741

ttataaaatc taagcctgaa aaataagcct aattttgatt aacatctgca 32856791

gtgattaata atatctgaga tgattatttg cctcctgctt taatccaagc 32856841

attaaacttc atgctattct cttgtcaaag aaatttgaga gacattgaat 32856891

gatcaccctc aaaaattcct gagttctggt tgggtgcagt ggctcacatc 32856941

tataatctca gcactttggg atgccgaggt gggcagatat ttgaggtcag 32856991

gagtttgaga ccagcctggc caacatgttg ggaccttgtc tctactgaaa 32857041

atacaaacat tagctgggct tggtggtggg tgcctgtaat cccagctatt 32857091

cgggaggctg aggcaggaga atcacttgaa ccagggaggc gaagtttgca 32857141

gtgagcccaa gattgatcca ctgcactcca gcctgggtga cagagtgaga 32857191

ctgtctcaaa aaaaaaaaaa aaaaaaaaaa cctgagtttt aacttggtga 32857241

ctgttgactc cctcctgaca gCGAGGCGGT GGTGAACCGA GTGTTTGACA 32857291

AGCTGTCCCC GCTGCACGAG CGCATCTACT GTGCACTCTC TGGTTCAGCT 32857341 R60C

GCTGATGCCC AAGCCGTGGC CGACATGGCC GCCTACCAGC TGGAGCTCCA 32857391

TGGgtatgaa gctctggagt tctgactccc cacccactag agctccccca 32857441

acctgcatga atccctgtac agtgtgctgt tccaggagct ggacactggg 32857491

aaatggaaaa gtcttgtttc ggctcttgct ggcacttgaa tctgtcagtt 32857541

tctgcatctg taaagtggag ataatatagt acctcatgag acggttattt 32857591

tgagaaccac attctatatg tgaacacagt ttaaaagctg taaatcacta 32857641

tcctgatata aataatcagg aagaaggtga tattgtgacc caccataata 32857691

tcaggcagtt accatacgag aaatcaaggt cgttgggacg gaagtaacct 32857741

tatctgcttt tccccataag agcagggtcc ttgcagccaa aagaaagtta 32857791

tgtgggtggg gctgagcaaa agagtgagca attgaaagct tcttaccagt 32857841

tggtggtgtg ggactctggt tcccctgtac atgtgggagg gaggctgcag 32857891

tttgagctat tgcagttaca gttttcaggg gtcgtttagc agggatgatg 32857941

gtaacagtat aggagaatga gacttaaaat tctatcaacc tttattccta 32857991

atatttccct cagGATAGAA CTGGAGGAAC CTCCACTTGT TTTGGCTGCT 32858041

GCAAATGTGG TGAGAAATAT CAGCTATAAA TATCGAGAGG ACTTGTCTGC 32858091

ACATCTCATG GTAGCTGGCT GGGACCAACG TGAAGGAGGT CAGgtgagtt 32858141

tctcccaaag cactctctcc tctgggcttc cccactctcc tgcagaggaa 32858191

gatggaagtc ctatgtcatt ctagcaatga gttccaagga cactacctct 32858241

gaaagcatag tactttgggg atatgagata ccagggcttc attgcagggt 32858291

gcagagacca cttaatgtct cagtgggaag gaagggcttg atgattcttt 32858341

aacctgagga tccctttccc agGTATATGG AACCCTGGGA GGAATGCTGA 32858391

CTCGACAGCC TTTTGCCATT GGTGGCTCCG GCAGCACCTT TATCTATGGT 32858441 G156D

TATGTGGATG CAGCATATAA GCCAGGCATG TCTCCCGAGG AGTGCAGGCG 32858491 G165D R173C

CTTCACCACA GACGgtaacc agccaagtgg aagggtacct ggggagggct 32858541
ttgaaacatg ggaaggaagt agattatgag gaacaggaag agaaatacag 32858591
gggtggccat ttaagttaat gccgggcctg gtacactttt aagagtgaaa 32858641
aggggcagga caaatgcaaa gctcaatggg gttcttgggc aatacggata 32858691
aaccagggct gttctgagta aatcaaatga ggatacacag tcactgtgag 32858741
aaccagtggt gtgctaagca cagtggctca cacctgtaat gccaacaatt 32858791
tgggaggctg aggcaggagg attacttgag cccaggagtt tgaggccagc 32858841
ctaggcaaga tggtgaaacc ctgtctccac aaaaaacaat aaaaaaaagt 32858891
aaaaaaaaaa atgaactggg catagtggtg cacacctgta gtcccagcta 32858941
ctcaggaggc tgaggtggaa agatcatctg agccggggag atcaaggctg 32858991
tagtgagcgg tgattgcacc actgcgctgc agcctaggtg acagagagag 32859041
accctgtctg gagaaaaaaa aaaaaaaaaa gaaccagtgg tgtgctgagg 32859091
tgtgctgagg ctggcttggg accactcatg agagcggact gttaaatagt 32859141
caaggatttg tgaactgctt agctatttgt aacttgcaat tcatcatagc 32859191
gggagcattt acaccacgga catcagcaga tgccacatat ggaagccttt 32859241
ttgtaaaaaa actgatttac cagcacacca ctaaatatgc cttcctggaa 32859291
gatgagtttt gaggtgaaag tggtagtagg catatggatg gaggggggagt 32859341
aaaaagattt ttgaagctaa gccatcctct ctctccctct ctccaacttg 32859391
aaaccctctg cagCTATTGC TCTGGCCATG AGCCGGGATG GCTCAAGCGG 32859441
GGGTGTCATC TACCTGGTCA CTATTACAGC TGCCGGTGTG GACCATCGAG 32859491
TCATCTTGGG CAATGAACTG CCAAAATTCT ATGATGAGTG AACCTTCCCC 32859541
AGACTTCTCT TTCTTATTTT GTAATAAACT CTCTAGGGCC AAAACCTGGT 32859591
ATGGTCATTG GGAAATGAGT GCTCAGGGAG ATGGAGCTTA GGGGAGGTGG 32859641
GTGCTTCCCT CCTAGATGTC AGCATACACT CTTTCTTCTT TTGTCCCAGG 32859691
TCTAAAACAT CTTTCCTAGA GAAAACAAAA GGGACTAAAC TAGAAATATA 32859741
AAGAGCCCTA TACATGACAG GTGATCACGT ACTGAATGAT TTTGAAGTAG 32859791
TACAAACAAT AAAAATTCTC ATTCCGCATC ATCATGCGGT CCATGATGAT 32859841
GAGGCCGCAA gtgaggtgat gggactcttt cctttaaggc taagactgac 32859891

agataggcaa gacacctaca cacatgagaa ttagctaaga ctatcagcaa **32859941**
actcgcatgt aaaagaattc ctttcataat gcattcattc atattaaagg **32859991**
gcaatacatg aaaaatgctt aaatattttg gggcacttgt gaatttcaaa **32860041**
gaataatgac aataaccaaa agaagctaca tttgtggcat tggctaaatg **32860091**
ttttataaat tttatctctt aaaattcaaa ccaaaaaacc ccctgtattc **32860141**
acacctgtaa tcccagcact ttgggaggtc aaggcgggag gattgcttga **32860191**
gcccaggagt tagtgaccag cctgggcaac atagtgagaa ccccatctct **32860241**
acaaaaaaat ttaaaaatta gtcgggtgcg gtggtgcatg cctgtagtcc **32860291**
cagctgcctg ggaggctgag tgggaggatc gcttaggcct gggagtttga **32860341**
ggctacagtg agctgtgatt gcgccactgc actctagcgt gggtgacaga **32860391**
gaaagaccct atcttaagaa aaaaaaaaga aaagaaaaag aaaaaacaaa **32860441**
caaaaaaaac acccaaccct atataggtat tattattact tctataggac **32860491**
acatagaggt ttggaaagat taaatcactt gaccaaggtc acaaaataag **32860541**
ttctgaggct gggatctggg attcagtctt attatatgcc cttcctctac **32860591**
cactccctaa aacttctcat tccctcaatc cccatatatc atcttaaaat **32860641**
ctgcaataaa tagccccata cattcgttgg cacttaggaa actgttacca **32860691**
gatggctgag taactgtatt aaaacaaatt taattctgct tctatctttg **32860741**
ccttgcactt cctgagtgac aggagtgaac tctcatatcc ttttctgtca **32860791**
aaagatggtg ctgaatgatt tctaaggtag tttacagttc caacattcaa **32860841**
tgccattttg

PSMB9 (NC_000006.12, GRCh38) - gDNA - 2026-11-07

