GCCGTGAGTAGTACTACAGAGCCATAGAAACT.ACCCACACACCACCAC.ACACTCCTCATGACAGACAGCGTGATGGCTGAGTCA..GTCAAGCCGGCAGCC..TCTGTCTGACTG.A

GWTGACTGTGGTCATCAGATACATCCAACGTAACT. ACACAGCCAGCCAC.ATACTCCTCTAGAGAGGCTGCGTGATGA..ATGCGACAATCAAAGGGAGTGCC..TCTGTCTCACT.CA

·········<del>·</del>

0

0

274

274

0

Sister sec

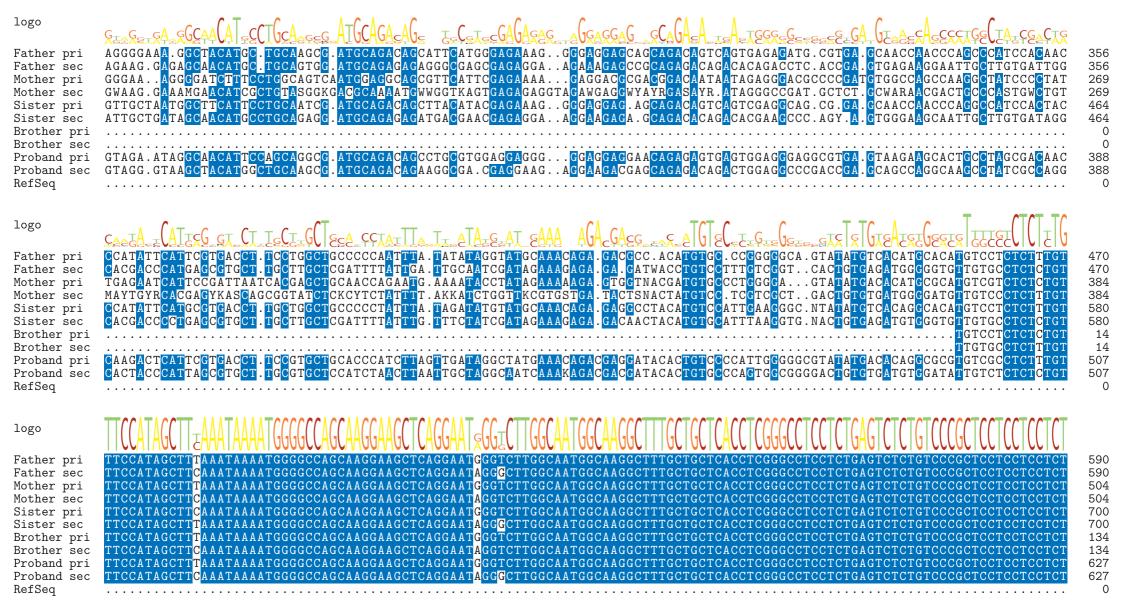
Brother pri

Brother sec

Proband pri

Proband sec

RefSea





Father pri Father sec Mother pri Mother sec Sister pri Sister sec Brother pri Brother sec Proband pri Proband sec RefSeq

# CCTCGAATGCCCTCTGCCTCCATTGCCGCCAGGAA\_GTTCCCCTTTCCCCTGAGCC\_GAGAGCATGC\_CCTGGGCTTGACGGTGCTCATCCCTCAACTTGTCTCTCAAGGAGAAAGTGT

710

710

624

624

820

820

254

254

747

747

10

TCCTCGAATGCCCTCTGCCTCCATTGCCGCCAGGAATGTTCCCCTTTCCCCTGAGCCGGAGCATGCTCCTGAGCGTGCTCATCCCTCAACTTGTCTCTCAAGGAGAAAGTGT
CCTCGAATGCCCTCTGCCTCCATTGCCGCCAGGAACGTTCCCCTTTCCCCTGAGCCAGGAGCATGCCCCTGGGCTTGACGGTGCTCATCCCTCAACTTGTCTCTCAAGGAGAAAGTGT
CCTCGAATGCCCTCTGCCTCCATTGCCGCCAGGAACGTTCCCCTTTCCCCTGAGCCGGAGCATGCTCCTGGGCTTGACGGTGCTCATCCCTCAACTTGTCTCTCAAGGAGAAAGTGT
CCTCGAATGCCCTCTGCCTCCATTGCCGCCAGGAATGTTCCCCTTTCCCCTGAGCCAGGAGCATGCCCCTGGGCTTGACGGTGCTCATCCCTCAACTTGTCTCTCAAGGAGAAAGTGT
CCTCGAATGCCCTCTGCCTCCATTGCCGCCAGGAATGTTCCCCTTTCCCCTGAGCCAGGAGCATGCCCCTGGGCTTGACGGTGCTCATCCCTCAACTTGTCTCTCAAGGAGAAAGTGT
CCCTCGAATGCCCTCTGCCTCCATTGCCGCCAGGAACGTTCCCCTTTCCCCTGAGCCAGGAGCATGCCCCTGGGCTTGACGGTGCTCATCCCTCAACTTGTCTCTCAAGGAGAAAGTGT
TCCTCGAATGCCCTCTGCCTCCATTGCCGCCAGGAATGTTCCCCTTTCCCCTGAGCCAGGAGCATGCCCCTGGGCTTGACGGTGCTCATCCCTCAACTTGTCTCTCAAGGAGAAAGTGT
CCCTCGAATGCCCTCTGCCTCCATTGCCGCCAGGAACGTTCCCCTTTCCCCTGAGCCAGGAGCATGCCCCTGGGCTTGACGGTGCTCATCCCTCAACTTGTCTCTCAAGGAGAAAAGTGT
CCCTCGAATGCCCTCTGCCTCCATTGCCGCCAGGAACGTTCCCCTTTCCCCTTGAGCCAGGAGCATGCCCCTTGACGGTGCTCATCCCTCAACTTGTCTCTCAAGGAGAAAAGTGT
TCCTCGAATGCCCTCTGCCTCCATTGCCGCCAGGAACGTTCCCCTTTCCCCTTGAGCCAGGAGCATGCCCCTTGACGGTGCTCATCCCTCAACTTGTCTCTCAAGGAGAAAAGTGT
CCCTCGAATGCCCTCTGCCTCCATTGCCGCCAGGAACGTTCCCCTTTCCCCTTGAGCCAGGAGCATGCCCCTTGACGGTGCTCATCCCTCAACTTGTCTCTCCAAGGAGAAAAGTGT
CCCTCGAATGCCCTCTGCCCTCCATTGCCCCAGGAACGTTCCCCTTTCCCCTTGAGCCAGGAGCATGCCCCTTGACGGTGCTCATCCCTCAACTTGTCTCTCAAGGAGAAAAGTGT
CCCTCGAATGCCCTCTGCCCTCCATTGCCCCTTCCCCTTTCCCCTTGAGCCAGAGCATGCCCCTTGACGGTGCTCATCCCCTCAACTTGTCTCTCAAGGAGAAAAGTGT
CCCTCGAATGCCCTCTGCCCTCCATTGCCCCTTTCCCCTTTCCCCTTGAGCCAGAGCATGCCCCTTGACGGTGCTCATCCCTCAACTTGTCTCTCAAGGAGAAAAGTGT
CCCTCGAATGCCCTCTGCCCTCCATTGCCCCTTTCCCCTTTCCCCTTGAGCCAGAGCATGCCCTTGACGGTGCTCATCCCCTCAACTTGTCTCTCAAGGAGAAAAGTGT
CCCTCGAATGCCCTCTGCCCTCCATTGCCCCTTTCCCCTTTCCCCTTGAGCCCTCTGGCCTTGACGGTGCTCATCCCCTCAACTTGTCTCTCAAGGAGAAAAGTGT
CCCTCGAATGCCCTCTGCCCTTTCCCCTTTCCCCTTTCCCCTTGAGCCCTCTGGCCTTGACCCTCAACTTGCCCTCAACTTGCCCTTCAACTTGCCCTTCAACTTGCCCTTCAACTTGTCCCCTTTCCCCTTTCCCCTTTCCCCTTAACCCTTTCCCCTTTCCCCTTTCCCCTTTCCCCTTTCCCCTTTCC

### logo

Father pri Father sec Mother pri Mother sec Sister pri Sister sec Brother pri Brother sec Proband pri Proband sec RefSeq

### GTGGCCTGTGTGGGAATTTTGATGGCATCCAGAACAaTGACCTCACCAGCAGCAACCTCCAAGTGGAGGAAGACCCTGTGGGAACTCCTGGAAAGTGAGCTCGCAGTaTGCT

830 <u>CTGTGTGGGAATTTTGATGGCATCCAGAA</u>CA<mark>G</mark>TGACCTCACCAGCAGCAACCTCCAAGTGGAGGAAGACCCTGTGGACTTTGGGAACTCCTGGAAAGTGAGCTCGCAGT<mark>C</mark>TGCTC 830  ${ t GTGGCCTGTGTGGGAATTTTGATGGCATCCAGAACAATGACCTCACCAGCAGCAACCTCCAAGTGGAGGAAGACCCTGTGGACTTTGGGAACTCCTGGAAAGTGAGCTCGCAGT<math>{ t GTG}$ 744  ${ t GTGGCCTGTGTGGGAATTTTGATGGCATCCAGAACAGTGACCTCACCAGCAGCAACCTCCAAGTGGAGGAAGACCCTGTGGACTTTGGGAACTCCTGGAAAGTGAGCTCGCAGT<math>{ t C}$ TGCT ${ t C}$ 744  ${ t GTGGCCTGTGTGGGAATTTTGATGGCATCCAGAACAATTGACCTCACCAGCAGCAACCTCCAAGTGGAGGAAGACCCTGTGGACTTTGGGAACTCCTGGAAAGTGAGCTCGCAGT<math>{ t GTG}$ 940 GTGGCCTGTGTGGGAATTTTGATGGCATCCAGAACA<mark>G</mark>TGACCTCACCAGCAGCAACCTCCAAGTGGAGGAAGACCCTGTGGACTTTGGGAACTCCTGGAAAGTGAGCTCGCAGT<mark>C</mark>TGCTC 940  ${ t GTGGCCTGTGTGGGAATTTTGATGGCATCCAGAACAATTGACCTCACCAGCAGCAACCTCCAAGTGGAGGAAGACCCTGTGGACTTTGGGAACTCCTGGAAAGTGAGCTCGCAGT<math>{ t GTG}$ 374  ${ t GTGGCCTGTGTGGGAATTTTGATGGCATCCAGAACAGTGACCTCACCAGCAGCAACCTCCAAGTGGAGGAAGACCCTGTGGACTTTGGGAACTCCTGGAAAGTGAGCTCGCAGT<math>{ t C}$ TGCT ${ t C}$ 374  ${ t GTGGCCTGTGTGGGAATTTTGATGGCATCCAGAACAATGACCTCACCAGCAGCAACCTCCAAGTGGAGGAAGACCCTGTGGACTTTGGGAACTCCTGGAAAGTGAGCTCGCAGT<math>{ t GTGCTG}$ 867 GTGGCCTGTGTGGGAATTTTGATGGCATCCAGAACA<mark>G</mark>TGACCTCACCAGCAGCAACCTCCAAGTGGAGGAAGACCCTGTGGACTTTGGGAACTCCTGGAAAGTGAGCTCGCAGT<mark>C</mark>TGCTG 867  ${ t GTGGCCTGTGTGGGAATTTTGATGGCATCCAGAACA}{ t TGACCTCACCAGCAGCACCTCCAAGTGGAGGAAGACCCTGTGGACTTTGGGAACTCCTGGAAAGTGAGCTCGCAGT<math>{ t GTGCTG}$ 130

#### logo

Father pri Father sec Mother pri Mother sec Sister pri Sister sec Brother pri Brother sec Proband pri Proband sec RefSeq

## ACACCAGAAAA<sub>B</sub>TACGTCTGGGTgTgTGGACAGAGCCCg<mark>AGAGCTTGCTTCCTGGAATGTCCCTCTGTCCCCA</mark>ET4ATaGgz<mark>CTG</mark>22\_\_gGz<sub>GG</sub>

928 ACACCAGAAAA<mark>C</mark>TACGTCTGGGTCTCTGTGTGGACAGAGCCC<mark>G</mark>AGAGCTTGCTTCCTGGAATGTCCCTCTGTCCCCAT<mark>C</mark>T**T**ATAG<mark>YT</mark>CTGA<mark>C</mark>T**T**CGT<mark>C..</mark> 928 ACACCAGAAAA<mark>G</mark>TACGTCTGGGTCTCTGTGTGGACAGAGCCC<mark>G</mark>AGAGCTTGCTTCCTGGAATGTCCCTCTGTCCCCAT<mark>GTC</mark>ATAG<mark>GA</mark>CTGA<mark>AGG</mark>O. 839 ACACCAGAAAA<mark>C</mark>TACGTCTG<mark>A</mark>GT<mark>G</mark>TCTGTGTGGACAGAGCCC<mark>T</mark>AGAGCTTGCTTCCTGGAATGTCCCTCTGTCCCCAT 839 ACACCAGAAAA<mark>G</mark>TACGTCTGGGTCT<mark>G</mark>TGTGTGGACAGAGCCC<mark>T</mark>AGAGCTTGCTTCCTGGAATGTCCCTCTGTCCCCAT<mark>G</mark>TCATAGG 1036 ACACCAGAAAA<mark>C</mark>TACGTCTGGGTCTCTGTGTGTGGACAGAGCCC<mark>G</mark>AGAGCTTGCTTCCTGGAATGTCCCTCTGTCCCCAT<mark>C</mark>TTATAGG. 1036 ACACCAGAAAA<mark>G</mark>TACGTCTGGGTCTCTGTGTGGACAGAGCCC<mark>T</mark>AGAGCTTGCTTCCTGGAATGTCCCTCTGTCCCCAT<mark>GTC</mark>ATAGG<mark>T</mark>CTG<mark>AT</mark>TGCG<mark>G</mark>... 471 ACACCAGAAAA<mark>C</mark>TACGTCTGGGTCTCTGTGTGGACAGAGCCC<mark>G</mark>AGAGCTTGCTTCCTGGAATGTCCCTCTGTCCCCAT<mark>CTT</mark>ATAGG<mark>T</mark>CTGA<mark>TTGA</mark>GT... ACACCAGAAAA<mark>G</mark>TACGTCTGGGTCTCTGTGTGGACAGAGCCC<mark>G</mark>AGAGCTTGCTTCCTGGAATGTCCCTCTGTCCCCAT<mark>G</mark>TCAT<mark>G</mark>G<mark>AT</mark>CTG<mark>CACC</mark>CG<mark>GCGT</mark> 471 967 ACACCAGAAAA<mark>C</mark>TACGTCTGGGTCTCTGTGTGGACAGAGCCC<mark>T</mark>AGAGCTTGCTTCCTGGAATGTCCCTCTGTCCCCAT<mark>C</mark>TCAT<mark>G</mark>GAACTG<mark>CATTT</mark>G<mark>GAGT</mark> 967 141

X non conserved

 $\overline{X} \geq 50\%$  conserved