

Human beta actin (BC002409): 1849 bases Homo sapiens actin, beta, mRNA (cDNA clone MGC:8647 IMAGE:2961617), complete cds.

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CGTCCGCCCC GCGAGCACAG AGCCTCGCCT TTGCCGATCC GCCGCCCGTC CACACCCGCC GCCAGCTCAC CATGGATGAT GATATCGCCG
CGCTCGTCGT CGACAACGGC TCCGGCATGT GCAAGGCCGG CTTCGCGGGC GACGATGCCC CCCGGGCCGT CTTCCTCCCTCC ATCGTGGGGC
GCCCCAGGCA CCAGGGCGTG ATGGTGGGCA TGGGTGAGAA GGATTCCTAT GTGGGCGACG AGGCCCAGAG CAAGAGAGGC ATCCTCACCC
TGAAGTACCC CATCGAGCAC GGCATCGTCA CCAACTGGGA CGACATGGAG AAAATCTGGC ACCACACCTT CTACAATGAG CTGCGTGTGG
CTCCCGAGGA GCACCCCGTG CTGCTGACCG AGGCCCCCTT GAACCCCAAG GCCAACCCGG AGAAGATGAC CCAGATCATG TTTGAGACCT
TCAACACCCC AGCCATGTAC GTTGCTATCC AGGCTGTGCT ATCCCTGTAC GCCTCTGGCC GTACCACTGG CATCGTGATG GACTCCGGTG
ACGGGGTCAC CCACACTGTG CCCATCTACG AGGGGTATGC CCTCCCCCAT GCCATCCTGC GTCTGGACCT GGCTGGCCGG GACTGACTG
ACTACCTCAT GAAGATCCTC ACCGAGCGCG GCTACAGCTT CACCACCACG GCCGAGCGGG AAATCGTGGC TGACATTAAG GAGAAGCTGT
GCTACGTGCG CCTGGACTTC GAGCAAGAGA TGGCCACGGC TGCTTCCAGC TCCTCCCTGG AGAAGAGCTA CGAGCTGCCT GACGGCCAGG
TCATCACCAT TGGCAATGAG CGGTTCCGCT GCCCTGAGGC ACTCTTCCAG CCTTCTTCC TGGGCATGGA GTCTTGTGGC ATCCACGAAA
CTACCTTCAA CTCCATCATG AAGTGTGACG TGGACATCCG CAAAGACCTG TACGCCAACA CAGTGTGTGC TGGCGGCACC ACCATGTACC
CTGGCATTGC CGACAGGATG CAGAAGGAGA TCACTGCCCT GGCAACCAGC ACAATGAAGA TCAAGATCAT TGCTCCTCCT GAGCGCAAGT
ACTCCGTGTG GATCGGGCGC TCCATCCTGG CCTCGCTGTC CACCTTCCAG CAGATGTGGA TCAGCAAGCA GGAGTATGAC GAGTCCGGCC
CCTCCATCGT CCACCGCAAA TGCTTCTAGG CGGACTATGA CTTAGTTGCG TTACACCCCT TCTTGACAAA ACCTAACTTG CGCAGAAAA
AAGATGAGAT TGGCATGGGT TTATTTGTTT TTTTGTGTTT GTTTTGGTTT TTTTTTTTTT TTTTGGCTTG ACTCAGGAT TAAAACTGG
AACGTTGAA GTGACAGCAG TCGGTTGGAG CGAGCATCCC CCAAAGTTCA CAATGTGGCC GAGGACTTTG ATTGCACATT GTTGTTTTTT
TAATAGTCA TCCAAATATG AGATGCATTG TTACAGGAAG TCCCTTGCCA TCCTAAAAGC CACCCCACTT CTCTCTAAGG AGAATGGCCC
TGACTCCTCC CAAGTCCACA CAGGGGAGGT GATAGCATTG CTTTCCGTGA AATATGTAA TGCAAAATTT TTTTAAATCT CGCCTTAATA
CTTTTATT TTTTATTATT TTGAATGATG AGCCTTCGTG CCCCCTTCC CCCCCTTTT GTCCCCAAC TTGAGATGTA TGAAGGCTTT
TGGTCTCCCT GGGAGTGGGT GGAGGCAGCC AGGGCTTACC TGTACACTGA CTTGAGACCA GTTGAATAAA AGTGCACACC TTAATAAAAA
AAAAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA

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Or Human beta actin (NM_001101): 1793 bases

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CGCGTCCGCC CCGCGAGCAC AGAGCCTCGC CTTTGCCGAT CCGCGGCCCG TCCACACCCG CCGCCAGCTC ACCATGGATG ATGATATCGC
CGCGCTCGTC GTCGACAACG GCTCCGGCAT GTGCAAGGCC GGCTTCGCGG GCGACAGTGC CCCCCGGGCC GTCTTCCCTC CCATCGTGGG
GCGCCCCAGG CACCAGGGCG TGATGGTGGG CATGGGTGAG AAGGATTCCT ATGTGGGCGA CGAGGCCAG AGCAAGAGAG GCATCCTCAC
CCTGAAGTAC CCCATCGAGC ACGGCATCGT CACCAACTGG GACGACATGG AGAAAACTCG GCACCACACC TTCTACAATG AGCTGCGTGT
GGCTCCCGAG GAGCACCOCG TGCTGCTGAC CGAGGCCCCC CTGAACCCCA AGGCCAACCG CGAGAAGATG ACCCAGATCA TGTTTGAGAC
TTTCAACACC CCAGCCATGT ACGTTGCTAT CCAGGCTGTG CTATCCCTGT ACGCCTCTGG CCGTACCCTT GGCATCGTGA TGGACTCCGG
TGACGGGGTC ACCACACTG TGCCCATCTA CGAGGGGTAT GCCCTCCCCC ATGCCATCCT CGCTCTGGAC CTGGCTGGCC GGGACCTGAC
TGACTACCTC ATGAAGATCC TCACCGAGCG CGGCTACAGC TTCACCACA CGGCCGAGCG GGAATTCGTG CGTGACATTA AGGAGAAGCT
GTGCTACGCC GCCCTGGACT TCGAGCAAGA GATGGCCAGG GCTGCTTCCA GCTCCTCCCT GGAGAAGAGC TACGAGCTGC CTGACGGCCA
GGTCATCAC ATTGGCAATG ACGGGTTCCG CTGCCCTGAG GCACCTTCC ATGCCCTCCT CCGTGGCATG GAGTCTCTG GCATCCACGA
AACTACCTTC AACTCCATCA TGAAGTGTGA CGTGGACATC CGCAAGACC TGTACGCCAA CACAGTGTCT TCTGGCGGCA CCACCATGTA
CCCTGGCATT GCCGACAGGA TGCAGAAGGA GATCACTGCC CTGGCACCCA GCACAATGAA GATCAAGATC ATTGCTCCTC CTGAGCGCAA
GTACTCCGTG TGGATCGGCG GCTCCATCCT GGCCCTCGTG TCCACCTTCC AGCAGATGTG GATCAGCAAG CAGGAGTATG ACGAGTCCGG
CCCCCTCATC GTCCACCGCA AATGCTTCTA GCGGACTAT GACTTAGTTG CGTTACACCC TTTCTTGACA AAACCTAATC TGCGCAGAAA
ACAAGATGAG ATTGGCATGG CTTTATTTGT TTTTTTTGTT TTGTTTTGTT TTTTTTTTTT TTTTGGCTT GACTCAGGAT TAAAAACTG
GAACGGTGAA GGTGACAGCA GTCGGTTGGA GCGAGCATCC CCAAAGTTC ACAATGTGGC CGAGGACTTT GATTGCACAT TGTGTTTTTT
TTAATAGTCA TTCCAAATAT GAGATGCATT GTTACAGGAA GTCCCTTGCC ATCTTAAAAG CCACCCACT TCTCTCTAAG GAGAATGGCC
CAGTCCCTC CCAAGTCCAC ACAGGGGAGG TGATAGCATT GCTTTCGTG AAATATGTA ATGCAAAATT TTTTAAATCT TCGCCTTAAT
ACTTTTTTAT TTTGTTTTAT TTTGAATGAT GAGCCTTCGT GCCCCCCTT CCCCCTTTT GTCCCCAAC TTGAGATGTA TGAAGGCTTT
TGGTCTCCCT GGGAGTGGGT GGAGGCAGCC AGGGCTTACC TGTACACTGA CTTGAGACCA GTTGAATAAA AGTGCACACC TTA

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Oligo Explorer - 1.1.2 28/03/2005

Sequence

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Filename      : Human beta actin BC002409
Length       : 1849 bp
Unresolved   : 0 bp
GC %         : 53.4 %

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Sense qPCR Hu B-actin #4 (Upper primer)

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5'-position  : 323
Length       : 22
Sequence     : 5'-AATCTGGCACCACACCTTCTAC-3'
              3'-CATCTTCCACACCAGGTCTAA-5'

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Tm (basic)   : 66.0 :C
Tm (salt)    : 62.1 :C

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Tm (NN) : 62.6 :C
GC % : 50.0 %
3'-tail GC % : 42.9 %
dG : -39.9 kcal/mol
3'-tail dG : -9.0 kCal/mol

Antisense qPCR Hu B-actin #4 (Lower primer)

5'-position : 492
Length : 22
Sequence : **5'-ATAGCACAGCCTGGATAGCAAC-3'**
3'-CAACGATAGGTCCGACACGATA-5'

Tm (basic) : 66.0 :C
Tm (salt) : 62.1 :C
Tm (NN) : 62.8 :C

GC % : 50.0 %
3'-tail GC % : 42.9 %
dG : -40.9 kcal/mol
3'-tail dG : -11.0 kCal/mol

Primer pair properties

Length difference : 0
Tm (basic) difference: 0.0 °C
Tm (salt) difference : 0.0 :C
Tm (NN) difference : 0.2 °C
GC % difference : 0.0 %

PCR product

Position : **323 - 492**
Length : 170 bp
GC% : 58.2 %

Tm(product) : 79.8°C
Tm(annealing) : 59.8°C

Upper primer self annealing:

5'-AATCTGGCACCACACCTTCTAC-3'
: ||| ::: :
3'-CATCTTCCACACCACGGTCTAA-5'
dG: -1.81 kcal/mol

Upper primer loops:

None!

Lower primer self annealing:

5'-ATAGCACAGCCTGGATAGCAAC-3'
||| :::
3'-CAACGATAGGTCCGACACGATA-5'
dG: -0.34 kcal/mol

Lower primer loops:

None!

Upper primer - Lower primer annealing:

5'-AATCTGGCACCACACCTTCTAC-3'
: : ||| :
3'-CAACGATAGGTCCGACACGATA-5'
dG: -3.00 kcal/mol

5'-AATCTGGCACCACACCTTCTAC-3'
: : ||| : :
3'-CAACGATAGGTCCGACACGATA-5'
dG: -1.81 kcal/mol

5'-AATCTGGCACCACACCTTCTAC-3'
: : |||
3'-CAACGATAGGTCCGACACGATA-5'
dG: -0.34 kcal/mol

5'-AATCTGGCACCACACCTTCTAC-3'
||| : : :
3'-CAACGATAGGTCCGACACGATA-5'
dG: 0.16 kcal/mol

5'-AATCTGGCACCACACCTTCTAC-3'
: : |||
3'-CAACGATAGGTCCGACACGATA-5'
dG: 0.65 kcal/mol

5'-AATCTGGCACCACACCTTCTAC-3'
: : : |||
3'-CAACGATAGGTCCGACACGATA-5'
dG: 0.65 kcal/mol