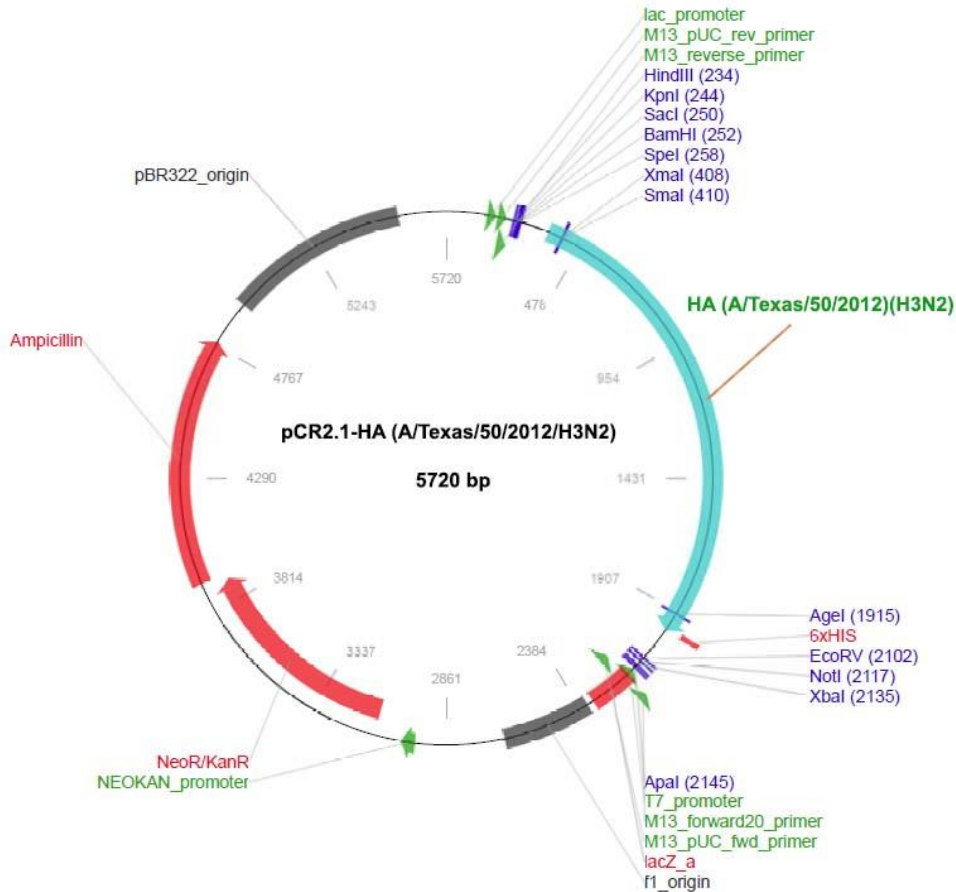


pCR2.1-HA (A/Texas/50/2012/H3N2)

Cat# HA-T219

Gene Name	pCR2.1-HA (A/Texas/50/2012)(H3N2)
Gene description:	Codon optimized cDNA clone of influenza A hemagglutinin (aa 17-529) (A/Texas/50/2012)(H3N2) for high-level expression in mammalian cells
cDNA Insert Size	1599 bp codon optimized influenza B hemagglutinin (A/Texas/50/2012)(H3N2) cDNA with a Kozak consensus sequence(GACATGA), corresponding to amino acid 17-529 (Gene accession# AGL06219).
Vector	pCR2.1
Storage	4 °C

Construct map:



Detailed sequence of the whole construct (pCR2.1-HA (A/Texas/50/2012/H3N2):

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1   AGCGCCCAAT ACGCAAACCG CCTCTCCCCG CGCGTTGGCC GATTCATTAA TGCAGCTGGC ACGACAGGTT
71  TCCCGACTGG AAAGCGGGCA GTGAGCGCAA CGCAATTAAT GTGAGTTAGC TCACTCATTG GGCACCCCGA
141 GCTTTACTACT TTATGCTTCC GGCTCGTATG TTGTGTGGAA TTGTGAGCGG ATAACAATTT CACACAGGAA
211 ACAGCTATGA CCATGATTAC GCCAAGCTTG GTACCGAGCT CGGATCCACT AGTAACGGCC GCCAGTGTGC
281 TGGTAACGGC CGCCAGTGTG CTGGAATTCG CCCTTTCCTT TCCTGGGTCT TTTCTGCAGG CACCGTCGCC
351 GCCACCATGG ACATGAGGGT CCCCCTCAG CTCTGGGGC TCCTGCTGCT CTGGCTCCCC GGGGCGCGCT
421 GTCAAAAACT GCCCGGCAAT GACAACAGCA CTGCAACCCT CTGTCTCGGA CATCACGCAG TCCCAAACGG
491 AACAATCGTG AAGACCATCA CAAACGACCG CATCGAGGTG ACCAACGCAA CCGAGCTTGT GCAGAACTCC
561 AGTATCGGAG AGATCTGTGA CTCCCCACAC CAAATCCTCG ACGGAGAAAA CTGCACCCTT ATCGACGCTC
631 TTCTGGGAGA CCTCAATGT GACGGATTCC AGAACAAGAA GTGGGACCTG TTCGTGGAGC GCTCTAAGGC
701 TTACTCTAAC TGCTACCCTT ACGACGTGCC AGACTACGCT TCCCTTAGAA GCCTCGTGGC TTCATCCGGA
771 ACATTGGAGT TCAACAACGA GTCCTTCAAC TGGAACGGGG TCACACAGAA CGGCACATCA TCTGCTTGCA
841 TCAGAAGGTC CAACAACCTC TTCTTCTCCC GGTGAACTG GCTGACCCAC TTGAACTTCA AGTACCCCGC
911 TCTGAACGTG ACCATGCCAA ACAACGAGCA GTTCGACAAG CTGTACATCT GGGGGGTCCA CCATCCTGTG
981 ACCGATAAGG ACCAGATCTT CCTGTACGCC CAGCCGTGAG GCAGAATCAC TGTGTCCACC AAGAGATCCC
1051 AGCAGGCCGT GATTCTAAC ATCGGCTTCA GACCAAGGAT CAGGAACATC CCCAGTAGGA TCAGTATCTA
1121 CTGGACCATC GTC AAGCCTG GGGACATCTT GCTGATCAAC AGCACCAGGA ACTTGATCGC CCCCAGGGGC
1191 TATTTAAGA TCAGGAGTGG GAAGAGCAGC ATTATGAGGA GCGACGCCCC CATTGGCAA TGCAAGACCG
1261 AATGCATTAC TCCCAACGGG AGCATTTCCA ACGAAAGCC CTTTCAGAAC GTC AAGACAGGA TTACATACGG
1331 CGCTGCCCC AGGTATGTCA AGCAGAGCAC ACTGAAGCTG GCCACAGGGA TCGGGAATGT GCCCGAAAAA
1401 CAGACTCGGG GGATTTTGG CGCCATTGCC GGCTTTATCG AAAATGGCTG GGAAGGGATG GTGGATGGGT
1471 GGTATGGCTT CCGGCATCAG AATAGCGAAG GGCGCGGCCA GGCCGCCGAT CTGAAAAGCA CTCAGGCCGC
1541 CATTGATCAG ATTAATGGGA AACTGAACCG GCTGATTTGG AAAACAAACG AGAAATTTCA CCAGATTGAG
1611 AAAGAGTTTT CCGAGGTGCG GGGGCGGATT CAGGATCTGG AGAAGTACGT CGAGGATACT AAGATTGATC
1681 TGTGGAGCTA CAACGCCGAG CTGCTGGTGG CCCTCGAGAA CCAGCACACA ATTGATCTGA CAGATAGCGA
1751 GATGAACAAG CTCTTTGAGA AGACTAAGAA GCAGCTCCGC GAGAACGCCG AGGATATGGG CAACGGGTGC
1821 TTTAAGATCT ACCACAAGTG CGATAACGCC TGCATTGGCT CCATTCGGAA CGGGACATAC GATCACGATG
1891 TGTACCGGGA TGAGGCCCTC AACAACCGGT TTCAGATTAA GGGCGTCGAG CTGAAGTCCG GCTACAAGGA
1961 T CACCACCAC CACCACCCT GAGAATTCAT TGATCATTAA TCAGCCATAC CACATTTGTA GAGGTTTTAC
2031 TTGCTTTAAA AAACCTCCCA CACCTCCCCC TGAACCTGAA ACATAAAAATG AATAAGGGCG AATTCTGCAG
2101 ATATCCATCA CACTGGCGGC CGCTCGAGCA TGCATCTAGA GGGCCCAATT CGCCCTATAG TGAGTCGTAT
2171 TACAATTCAC TGGCCGTGCT TTTACAACGT CGTGACTGGG AAAACCTTGG CGTTACCCAA CTTAATCGCC
2241 TTGCAGCACA TCCCCCTTTC GCCAGCTGGC GTAATAGCGA AGAGGCCCGC ACCGATCGCC CTTCCCAACA
2311 GTTGCGCAGC CTGAATGGCG AATGGACGCG CCCTGTAGCG GCGCATTAAG CGCGGCGGGT GTGGTGGTTA
2381 CGCGCAGCGT GACCCTACA CTTGCCAGCG CCCTAGCGCC CGCTCCTTTC GCTTCTTTC CTTCTTTCT
2451 CGCCACGTTT GCCGGCTTTC CCCGTCAAGC TCTAAATGAT GGGCTCCCTT TAGGGTTCCG ATTTAGTGCT
2521 TTACGCCACC TCGACCCCAA AAAACTTGAT TAGGTGATG GTTCACGTAG TGGGCCATCG CCCTGATAGA
2591 CGGTTTTTCG CCTTTGACG TTGGAGTCCA CGTCTTTTAA TAGTGGACTC TTGTTCCAAA CTGGAACAAC
2661 ACTCAACCCT ATCTCGGTCT ATTCTTTTGA TTTATAAGGG ATTTTGCCGA TTTGCGCCTA TTGGTTAAAA
2731 AATGAGCTGA TTTAAACAAA ATTTAACGCG AATTTTAAACA AAATTCAGGG CGCAAGGGCT GCTAAAGGAA
2801 GCGGAACACG TAGAAAAGCA GTCCGAGAAA ACGGTGCTGA CCCCAGGATG ATGTCAGCTA CTGGGCTATC
2871 TGGACAAGGG AAAACGCAAG CGCAAAGAGA AAGCAGGTAG CTTGCAGTGG GCTTACATGG CGATAGCTAG
2941 ACTGGGCGGT TTTATGGACA GCAAGCGAAC CGGAATTGCC AGCTGGGGCG CCCTCTGGTA AGGTTGGGAA
3011 GCCCTGCAA GTAAACTGGA TGGCTTTCTT GCCGCCAAGG ATCTGATGGC GCAGGGGATC AAGATCTGAT
3081 CAAGAGACAG GATGAGGATC GTTTCGATG ATTGAACAAG ATGGATTGCA CGCAGGTTCT CCGGCCGCTT
3151 GGGTGGAGAG GCTATTCGGC TATGACTGGG CACAACAGAC AATCGGCTGC TCTGATGCCG CCGTGTTCG
3221 GCTGTCAGCG CAGGGGCGCC CGGTTCTTTT TGTC AAGACC GACCTGTCCG GTGCCCTGAA TGAAGTGCAG
3291 GACGAGGCAG CGCGGCTATC GTGGCTGGCC ACGACGGGCG TTCCTTGCGC AGCTGTGCTC GACGTTGTCA
3361 CTGAAGCGGG AAGGGACTGG CTGCTATTGG GCGAAGTGCC GGGGCAGGAT CTCCTGTGAT CCCACCTTGC
3431 TCCTGCCGAG AAAGTATCCA TCATGGCTGA TGCAATGCGG CGGCTGCATA CGCTTGATCC GGCTACCTGC
3501 CCATTCGACC ACCAAGCGAA ACATCGCATC GAGCGAGCAC GACTCGGAT GGAAGCCGGT CTTGTGATC
3571 AGGATGATCT GGACGAAGAG CATCAGGGGC TCGCGCCAGC CGAACTGTTT GCCAGGCTCA AGGCGCGCAT
3641 GCCCGACGGC GAGGATCTCG TCGTGACCCA TGGCGATGCC TGCTTGCCGA ATATCATGGT GGAAAATGGC
3711 CGCTTTTCTG GATTCATCGA CTGTGGCCGG CTGGGTGTGC CGGACCGCTA TCAGGACATA GCGTTGGCTA
3781 CCCGTGATAT TGCTGAAGAG CTTGGCGGCG AATGGGCTGA CCGCTTCTC GTGCTTTACG GTATCGCCGC

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3851 TCCCGATTTCG CAGCGCATCG CCTTCTATCG CCTTCTTGAC GAGTTCTTCT GAATTGAAAA AGGAAGAGTA
3921 TGAGTATTCA ACATTTCCGT GTCGCCCTTA TTCCCTTTTT TGCGGCATTT TGCCCTCCTG TTTTTGCTCA
3991 CCCAGAAACG CTGGTGAAAG TAAAAGATGC TGAAGATCAG TTGGGTGCAC GAGTGGGTTA CATCGAACTG
4061 GATCTCAACA GCGGTAAGAT CCTTGAGAGT TTTGCCCCG AAGAACGTTT TCCAATGATG AGCACTTTTA
4131 AAGTTCTGCT ATGTGGCGCG GTATTATCCC GTATTGACGC CGGGCAAGAG CAACTCGGTC GCCGCATACA
4201 CTATTCTCAG AATGACTTGG TTGAGTACTC ACCAGTCACA GAAAAGCATC TTACGGATGG CATGACAGTA
4271 AGAGAATTAT GCAGTGCTGC CATAACCATG AGTGATAACA CTGCGGCCAA CTTACTTCTG ACAACGATCG
4341 GAGGACCGAA GGAGCTAACC GCTTTTTTGC ACAACATGGG GGATCATGTA ACTCGCCTTG ATCGTTGGGA
4411 ACCGGAGCTG AATGAAGCCA TACCAAACGA CGAGCGTGAC ACCACGATGC CTGTAGCAAT GGCAACAACG
4481 TTGCGCAAAC TATTAACTGG CGAACTACTT ACTCTAGCTT CCCGGCAACA ATTAATAGAC TGGATGGAGG
4551 CGGATAAAGT TGCAGGACCA CTTCTGCGCT CGGCCCTTCC GGCTGGCTGG TTTATTGCTG ATAAATCTGG
4621 AGCCGGTGAG CGTGGGTCTC GCGGTATCAT TGCAGCACTG GGGCCAGATG GTAAGCCCTC CCGTATCGTA
4691 GTTATCTACA CGACGGGGAG TCAGGCAACT ATGGATGAAC GAAATAGACA GATCGCTGAG ATAGGTGCTT
4761 CACTGATTAA GCATTGGTAA CTGTCAGACC AAGTTTACTC ATATATACTT TAGATTGATT TAAAACCTCA
4831 TTTTAAATTT AAAAGGATCT AGGTGAAGAT CCTTTTTGAT AATCTCATGA CCAAATCCC TTAACGTGAG
4901 TTTTCGTTCC ACTGAGCGTC AGACCCCGTA GAAAAGATCA AAGGATCTTC TTGAGATCCT TTTTTTCTGC
4971 GCGTAATCTG CTGCTTGCAA ACAAAAAAAC CACCGCTACC AGCGGTGGTT TGTTTGCCGG ATCAAGAGCT
5041 ACCAACTCTT TTTCCGAAGG TAACTGGCTT CAGCAGAGCG CAGATACCAA ATACTGTTCT TCTAGTGTA
5111 CCGTAGTTAG GCCACCACTT CAAGAACTCT GTAGCACCGC CTACATACCT CGCTCTGCTA ATCCTGTTAC
5181 CAGTGGCTGC TGCCAGTGGC GATAAGTCGT GTCTTACCGG GTTGGACTCA AGACGATAGT TACCGGATAA
5251 GGCGCAGCGG TCGGGCTGAA CGGGGGGTTT GTGCACACAG CCCAGCTTGG AGCGAACGAC CTACACCGAA
5321 CTGAGATACC TACAGCGTGA GCTATGAGAA AGCGCCACGC TTCCCGAAGG GAGAAAGGCG GACAGGTATC
5391 CGGTAAGCGG CAGGGTCGGA ACAGGAGAGC GCACGAGGGA GCTTCCAGGG GGAAACGCCT GGTATCTTTA
5461 TAGTCCTGTC GGGTTTCGCC ACCTCTGACT TGAGCGTCGA TTTTGTGAT GCTCGTCAGG GGGGCGGAGC
5531 CTATGAAAAA ACGCCAGCAA CGCGGCCTTT TTACGGTTCC TGGCCTTTTG CTGGCCTTTT GCTCACATGT
5601 TCTTTCCTGC GTTATCCCCT GATTCTGTGG ATAACCGTAT TACCGCCTTT GAGTGAGCTG ATACCGCTCG
5671 CCGCAGCCGA ACGACCGAGC GCAGCGAGTC AGTGAGCGAG GAAGCGGAAG

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Note: signal peptide (361 bp -422 bp) is highlighted in green color; HA sequence (423 bp – 1961 bp) is highlighted in yellow color.

Detailed amino acid sequence of the codon optimized cDNA clone:

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1 MRVPAQLLGL LLLWLPGARC QKLPGNDNST ATLCGLHHAV PNGTIVKTIT NDRIEVTNAT ELVQNSSIGE
71 ICDSPHQILD GENCTLIDAL LGDPQCDGFQ NKKWDLFVER SKAYSNCYPY DVPDYASLRS LVASSGTLEF
141 NNESFNWNGV TQNGTSSACI RRSNNSFFSR LNWLTHLNFK YPALNVTMPN NEQFDKLYIW GVHHPVTDKD
211 QIFLYAQPSG RITVSTKRSQ QAVIPNIGFR PRIRNIPSRI SIYWTIVKPG DILLINSTGN LIAPRGYFKI
281 RSGKSSIMRS DAPIGKCKSE CITPNGSIPN DKPFQNVNRI TYGACPRYVK QSTLKLATGM RNVPEKQTRG
351 IFGAIAGFIE NGWEGMVDGW YGFRHQNSEG RGQAADLKST QAAIDQINGK LNRLIGKTNE KFHQIEKEFS
421 EVEGRIQDLE KYVEDTKIDL WSYNAELLVA LENQHTIDLT DSEMKNLFEK TKKQLRENAE DMGNCGFKIY
491 HKCDNACIGS IRNGTYDHDV YRDEALNNRF QIKGVELKSG YKDHSHHHH

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