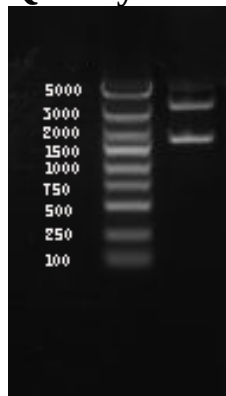


## pBMH-H3 (A/Perth/16/2009)(H3N2)

Cat# HA-P342

|                          |                                                                                                                                                                           |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Gene Name</b>         | pBMH-H3 (A/Perth/16/2009)(H3N2).                                                                                                                                          |
| <b>Gene description:</b> | Codon optimized cDNA clone of H3N2 hemagglutinin (aa 1-566) (A/Perth/16/2009).                                                                                            |
| <b>cDNA Insert Size</b>  | 1704 bp codon optimized H3N2 hemagglutinin (A/Perth/16/2009) cDNA with a Kozak consensus sequence(ACCATGA), corresponding to amino acid 1-566 (Gene accession# ACS71642). |
| <b>Vector</b>            | pBMH.                                                                                                                                                                     |
| <b>Cloning Site</b>      | SmaI.                                                                                                                                                                     |
| <b>Concentration</b>     | 10 µg (0.2 µg/µl), dissolved in 10 mM Tris/HCl (pH 8.5).                                                                                                                  |
| <b>Storage</b>           | 4 °C.                                                                                                                                                                     |

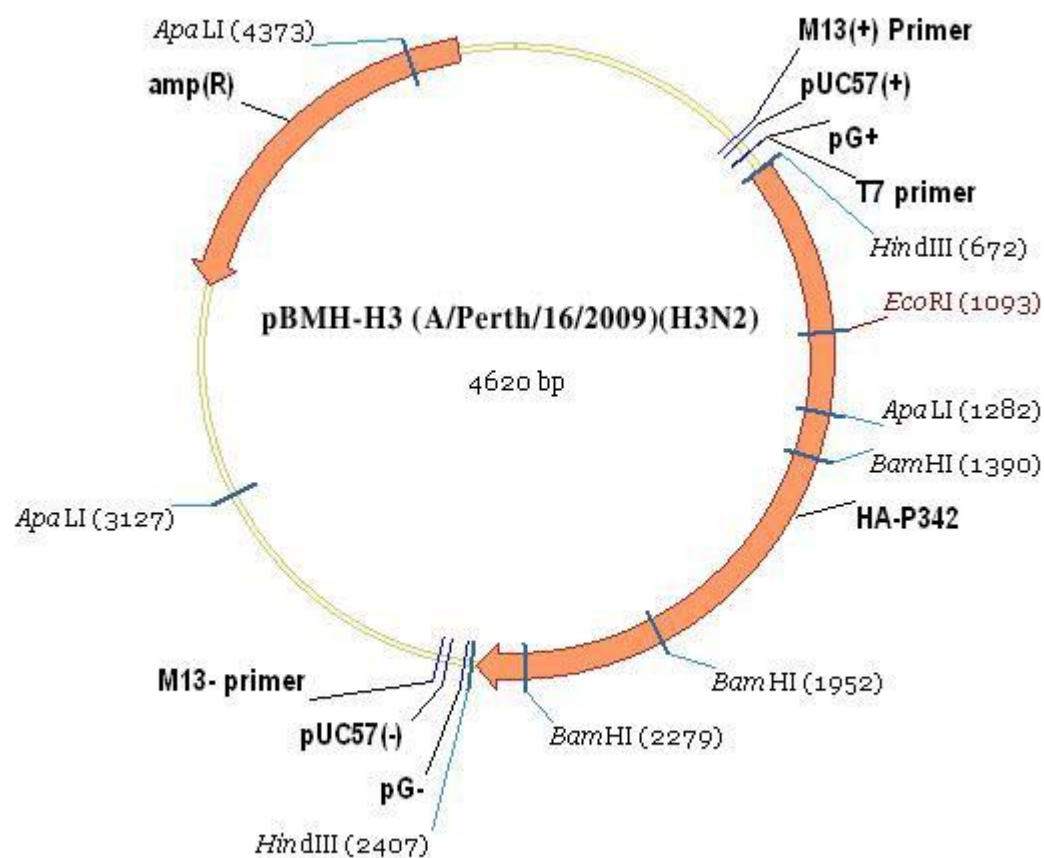
### Quality control:



RES:HindIII



**Construct map:**



**Detailed sequence of the whole construct (pBMH-H3 (A/Perth/16/2009)(H3N2)):**

|      |            |            |             |             |            |            |
|------|------------|------------|-------------|-------------|------------|------------|
| 1    | CTAAATTGTA | AGCGTTAATA | TTTTGTAAA   | ATTCGCGTTA  | AATTTTTGTT | AAATCAGCTC |
| 61   | ATTTTTTAAC | CAATAGGCCG | AAATCGGCAA  | AATCCCTTAT  | AAATCAAAAG | AATAGACCGA |
| 121  | GATAGGGTTG | AGTGTGTGTC | CAGTTTGGAA  | CAAGAGTCCA  | CTATTAAAGA | ACGTGGACTC |
| 181  | CAACGTCAAA | GGGCGAAAAA | CCGTCTATCA  | GGGCGATGGC  | CCACTACGTG | AACCATCACC |
| 241  | CTAATCAAGT | TTTTTGGGGT | CGAGGTGCCG  | TAAAGCACTA  | AATCGGAACC | CTAAAGGGAG |
| 301  | CCCCCGATTT | AGAGCTTGAC | GGGGAAAGCC  | GGCGAACGTG  | GCGAGAAAGG | AAGGGAAGAA |
| 361  | AGCGAAAGGA | GCGGGCGCTA | GGGCGCTGGC  | AAGTGTAGCG  | GTCACGCTGC | GCGTAACCAC |
| 421  | CACACCCGCC | GCGCTTAATG | CGCCGCTACA  | GGGCGCGTCC  | CATTCGCCAT | TCAGGCTGCG |
| 481  | CAACTGTTGG | GAAGGGCGAT | CGGTGCGGGC  | CTCTTCGCTA  | TTACGCCAGC | TGGCGAAAGG |
| 541  | GGGATGTGCT | GCAAGGCGAT | TAAGTTGGGT  | AACGCCAGGG  | TTTTCCAGT  | CACGACGTTG |
| 601  | TAAACGACG  | GCCAGTGAGC | GCGCGTAATA  | CGACTCACTA  | TAGGGCGAAT | TGGGTACGGC |
| 661  | CGTCAAGGCC | AAGCTTCCC  | AATGCCACCA  | TGAAAACCAT  | CATCGCTCTG | AGCTATATTC |
| 721  | TGTGTCTGGT | GTTCGCTCAA | AAACTGCCCC  | GCAATGACAA  | CAGCACTGCC | ACCCTGTGCC |
| 781  | TGGGCCATCA | CGCCGTCCCA | AATGGCACAA  | TCGTCAAAAC  | CATCACCAAC | GACCAGATCG |
| 841  | AGGTGACAAA | CGCCACCGAG | CTGGTGACGT  | CCTCCAGCAC  | CGGGGAGATT | TGCGACAGCC |
| 901  | CCCACCAAA  | CCTGGACGGC | AAGAATTGTA  | CCCTGATCGA  | CGCCCTGCTG | GGCGATCCCC |
| 961  | AGTGCGATGG | CTTCCAGAAC | AAAAAGTGGG  | ACCTGTTTCGT | GGAGAGGTCC | AAGGCCTACA |
| 1021 | GCAACTGCTA | CCCTTACGAC | GTGCCTGACT  | ACGCCAGCCT  | GAGGAGCCTG | GTGGCATCCA |
| 1081 | GCGGCACCC  | GGAATTCAAC | AACGAGAGCT  | TCAACTGGAC  | AGGGGTCACC | CAGAACGGCA |
| 1141 | CTTCCAGCGC | CTGCATCAGA | AGAAGCAAAA  | ATAGCTTCTT  | TAGCAGGCTG | AATTGGCTGA |
| 1201 | CCCACCTGAA | CTTCAAGTAC | CCCGCCCTGA  | ACGTCACCAT  | GCCCAATAAC | GAGCAGTTCG |
| 1261 | ACAAGCTGTA | CATCTGGGGC | GTGCACCACC  | CCGGCACCGA  | TAAAGATCAA | ATCTTCCTGT |
| 1321 | ACGCCCAAGC | TAGCGGCAGG | ATCACCGTGT  | CCACCAAAAG  | ATCCCAACAA | ACCGTCTCCC |
| 1381 | CAAATATCGG | ATCCAGACCC | AGAGTCAGAA  | ATATTCCAAG  | CAGAATCTCC | ATCTACTGGA |
| 1441 | CTATCGTGAA | GCCTGGCGAT | ATCCTGCTGA  | TTAACTCCAC  | CGGGAACCTG | ATCGCCCCAA |
| 1501 | GAGGCTATTT | CAAAATCAGG | TCCGGCAAAA  | GCTCCATCAT  | GAGGTCCGAC | GCACCCATCG |
| 1561 | GCAAGTGCAA | CTCCGAGTGC | ATCACCCCCA  | ACGGGAGCAT  | CCCAATGAT  | AAGCCATTTC |
| 1621 | AGAACGTGAA | TAGGATCACA | TACGGCGCCT  | GCCCAAGATA  | CGTGAAACAG | AACACCCTGA |
| 1681 | AGCTGGCCAC | CGGCATGAGG | AATGTCCCCG  | AAAAACAGAC  | CAGGGGCATC | TTCGGCGCCA |
| 1741 | TTGCCGGATT | CATCGAGAAC | GGCTGGGAGG  | GGATGGTGGA  | CGGCTGGTAC | GGCTTTAGGC |
| 1801 | ACCAAAACAG | CGAAGGCAGG | GGCCAAGCCG  | CCGATCTGAA  | AAGCACCCAG | GCTGCCATCG |
| 1861 | ACCAAATTAA | CGGCAAGCTG | AATAGACTGA  | TCGGCAAGAC  | CAATGAGAAG | TTTCACCAGA |
| 1921 | TTGAGAAAGA | GTTTTCCGAA | GTCGAGGGCA  | GGATCCAGGA  | CCTGGAAAAG | TATGTCGAAG |
| 1981 | ACACTAAGAT | TGATCTGTGG | AGCTACAATG  | CCGAGCTGCT  | GGTCGCCCTG | GAGAACCAGC |
| 2041 | ACACCATCGA | CCTGACCGAT | AGCGAGATGA  | ATAAGCTGTT  | CGAGAAAACA | AAGAAACAGC |
| 2101 | TGAGGGAAAA | CGCCGAGGAC | ATGGGGAAACG | GGTGTTTCAA  | GATCTACCAC | AAGTGCGACA |
| 2161 | ACGCATGCAT | CGGCAGCATT | AGGAACGGCA  | CTTATGACCA  | CGACGTCTAC | AGAGACGAGG |
| 2221 | CCCTGAACAA | CAGATTCCAA | ATCAAAGGCG  | TCGAGCTGAA  | GTCCGGCTAC | AAGGATTGGA |
| 2281 | TCCTGTGGAT | CAGCTTCGCC | ATCAGCTGCT  | TTCTGCTGTG  | CGTGGCCCTG | CTGGGCTTTA |
| 2341 | TCATGTGGGC | TTGCCAGAAG | GGCAACATTA  | GGTGTAAATAT | CTGCATCCCA | ATGGGATATC |
| 2401 | ACGTGAAGCT | TGCAAGCTCC | AGCTTTTGT   | CCCTTTAGTG  | AGGGTTAATT | GCGCGCTTGG |
| 2461 | CGTAATCATG | GTCATAGCTG | TTTCCTGTGT  | GAAATTGTTA  | TCCGCTCACA | ATTCCACACA |
| 2521 | ACATACGAGC | CGGAAGCATA | AAGTGTAAG   | CCTGGGGTGC  | CTAATGAGTG | AGCTAACTCA |
| 2581 | CATTAATTGC | GTTGCGCTCA | CTGCCCCTT   | TCCAGTCGGG  | AAACCTGTCT | TGCCAGCTGC |
| 2641 | ATTAATGAAT | CGGCCAACGC | GCGGGGAGAG  | GCGGTTTGCG  | TATTGGGCGC | TCTTCCGCTT |
| 2701 | CCTCGCTCAC | TGACTCGCTG | CGCTCGGTCT  | TTCCGGCTGCG | GCGAGCGGTA | TCAGCTCACT |
| 2761 | CAAAGGCGGT | AATACGGTTA | TCCACAGAAT  | CAGGGGATAA  | CGCAGGAAAG | AACATGTGAG |
| 2821 | CAAAAGGCCA | GCAAAAGGCC | AGGAACCGTA  | AAAAGGCCGC  | GTTGCTGGCG | TTTTTCCATA |
| 2881 | GGCTCCGCCC | CCCTGACGAG | CATCACAAAA  | ATCGACGCTC  | AAGTCAGAGG | TGGCGAAACC |
| 2941 | CGACAGGACT | ATAAAGATAC | CAGGCGTTTC  | CCCCTGGAAG  | CTCCCTCGTG | CGCTCTCCTG |



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3001 TTCCGACCCT GCCGCTTACC GGATACCTGT CCGCCTTTCT CCCTTCGGGA AGCGTGGCGC
3061 TTTCTCATAG CTCACGCTGT AGGTATCTCA GTTCGGTGTA GGTCGTTCGC TCCAAGCTGG
3121 GCTGTGTGCA CGAACCCCCC GTTCAGCCCG ACCGCTGCGC CTTATCCGGT AACTATCGTC
3181 TTGAGTCCAA CCCGGTAAGA CACGACTTAT CGCCACTGGC AGCAGCCACT GGTAACAGGA
3241 TTAGCAGAGC GAGGTATGTA GCGGGTGCTA CAGAGTTCTT GAAGTGGTGG CCTAACTACG
3301 GCTACACTAG AAGGACAGTA TTTGGTATCT GCGCTCTGCT GAAGCCAGTT ACCTTCGGAA
3361 AAAGAGTTGG TAGCTCTTGA TCCGGCAAAC AAACCACCGC TGGTAGCGGT GGTTTTTTTG
3421 TTTGCAAGCA GCAGATTACG CGCAGAAAAA AAGGATCTCA AGAAGATCCT TTGATCTTTT
3481 CTACGGGGTC TGACGCTCAG TGGAACGAAA ACTCACGTTA AGGGATTTTG GTCATGAGAT
3541 TATCAAAAAG GATCTTCACC TAGATCCTTT TAAATTAATA ATGAAGTTT AAATCAATCT
3601 AAAGTATATA TGAGTAAACT TGGTCTGACA GTTACCAATG CTTAATCAGT GAGGCACCTA
3661 TCTCAGCGAT CTGTCTATTT CGTTCATCCA TAGTTGCCTG ACTCCCCGTC GTGTAGATAA
3721 CTACGATACG GGAGGGCTTA CCATCTGGCC CCAGTGCTGC AATGATACCG CGAGATCCAC
3781 GCTCACCGGC TCCAGATTTA TCAGCAATAA ACCAGCCAGC CGGAAGGGCC GAGCGCAGAA
3841 GTGGTCCCTG AACTTTATCC GCCTCCATCC AGTCTATTAA TTGTTGCCGG GAAGCTAGAG
3901 TAAGTAGTTC GCCAGTTAAT AGTTTGCGCA ACGTTGTTGC CATTGCTACA GGCATCGTGG
3961 TGTCACGCTC GTCGTTTGGT ATGGCTTCAT TCAGCTCCGG TTCCCAACGA TCAAGGCGAG
4021 TTACATGATC CCCCATGTTG TGCAAAAAG CGGTTAGCTC CTTCGGTCCT CCGATCGTTG
4081 TCAGAAGTAA GTTGGCCGCA GTGTTATCAC TCATGGTTAT GGCAGCACTG CATAATTCTC
4141 TTA CTGTCAT GCCATCCGTA AGATGCTTTT CTGTGACTGG TGAGTACTCA ACCAAGTCAT
4201 TCTGAGAATA GTGTATGCGG CGACCGAGTT GCTCTTGCCC GCGTCAATA CGGGATAATA
4261 CCGCGCCACA TAGCAGAACT TAAAAGTGC TCATCATTGG AAAACGTTCT TCGGGGCGAA
4321 AACTCTCAAG GATCTTACCG CTGTTGAGAT CCAGTTCGAT GTAACCCACT CGTGCACCCA
4381 ACTGATCTTC AGCATCTTTT ACTTTCACCA GCGTTTCTGG GTGAGCAAAA ACAGGAAGGC
4441 AAAATGCCGC AAAAAAGGGA ATAAGGGCGA CACGGAAATG TTGAATACTC ATACTCTTCC
4501 TTTTTCATAA TTATTGAAGC ATTTATCAGG GTTATTGTCT CATGAGCGGA TACATATTG
4561 AATGTATTTA GAAAAATAAA CAAATAGGGG TTCCGCGCAC ATTTCCCCGA AAAGTGCCAC
4621

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## Detailed amino acid sequence of the codon optimized cDNA clone:

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1  MKTIIALSYI LCLVFAQKLP GNDNSTATLC LGHHAVPNGT IVKTIITNDQI EVTNATELVQ
61  SSSTGEICDS PHQILDGKNC TLIDALLGDP QCDGFQNKKW DLFVERSKAY SNCYPYDVPD
121 YASLRSLVAS SGTLEFNNE FNWTGVTQNG TSSACIRRSK NSFFSRLNWL THLNFKYPAL
181 NVTMPNNEQF DKLYIWGVH PGTDKDQIFL YAQASGRITV STKRSQQTVS PNIGSRPRVR
241 NIPSRISIW TIVKPGDILL INSTGNLIAP RGYFKIRSGK SSIMRSDAPI GKNSECITP
301 NGSIPNDKPF QNVNRITYGA CTRYVKQNTL KLATGMRNVP EKQTRGIFGA IAGFIENGWE
361 GMVDGWYGFR HQNSEGRGQA ADLKSTQAAI DQINGKLNRL IGKTNEKFHQ IEKEFSEVEG
421 RIQDLEKYVE DTKIDLWSYN AELLVALENQ HTIDLTDSEM NKLFEKTKKQ LRENAEDMGN
481 GCFKIYHKCD NACIGSIRNG TYDHDVYRDE ALNNRFQIKG VELKSGYKDW ILWISFAISC
541 FLLCVALLGF IMWACQKGN RCNICI

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