

## Product datasheet for **MG211174**

### **Hk1 (BC072628) Mouse Tagged ORF Clone**

#### **Product data:**

Product Type:	Expression Plasmids
Product Name:	Hk1 (BC072628) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Hk1
Synonyms:	Hk1-s, mHk1-s
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)



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**ORF Nucleotide Sequence:**

>MG211174 representing BC072628  
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**CGCATCGCC**

ATGATCGCCGCGCAACTACTGGCATATTACTTCCACCGAGCTGAAGGATGACCAAGTCAAAAAGATTGATA  
 AGTATCTGTATGCCATGCGGCTCTCTGATGAAATTCTGATAGATATCCTGACACGCTTCAAGAAAGAGAT  
 GAAGAATGGCCTCTCCCGGATTATAACCCAACGGCCTCCGTCAAGATGCTGCCAACCTTTGTCCGGTCC  
 ATTCGGACGGCTCAGAAAAGGGGATTTCATTGCACTGGATCTCGGCGGGTCTTCTTTTGAATCCTGC  
 GGGTGCAGGTGAACCACGAGAAGAGTCAGAACGTGAGTCTGAGGTCTACGACACCCAGAGAA  
 CATCGTGCACGGCAGTGAAGCCAGCTTTTGGATCACGTCGCTGAATGCCTCGGAGACTTCATGGAGAAA  
 AGGAAGATCAAGGACAAGAAATTACCCGTGGGATTCACGTTTTCTTCCCGTGCCGACAATCCAAAATAG  
 ACGAGGCCGACTGATCACGTGGACAAAGCGGTTCAAAGCCAGTGGCGTGAAGGGGCGGATGTGGTCAA  
 GCTGCTGAATAAAGCCATTAAGAAGCGAGGGGACTATGACGCTAACATTGTAGCTGTGGTGAATGACACA  
 GTGGGGACCATGATGACCTGCGGCTACGATGACCAACAGTGTGAAGTCCGGCTGATCATTGGCACTGGCA  
 CCAATGCTTGCTACATGGAGGAAGTGCACACATCGACCTGGTGGAAAGCGATGAGGGGAGGATGTGTAT  
 TAACACGGAATGGGGAGCCTTTGGGGATGATGGGTCCCTGGAAGACATTCGAACAGAGTTTGACAGAGAG  
 TTAGACCGGGGATCCCTCAACCTGGGAAACAGCTGTTGAGAAGATGGTGAAGCGCATGTACATGGGGG  
 AGCTGGTCCGGCTGATCCTGGTGAAGATGGCAAGGAAAGCCTCTTATTTGAAGGGCGCATTACTCCAGA  
 GCTGCTCACGAGGGGCAAGTTACCACCTAGCGAGTAGCCGCCATTGAAACGGATAAGGAAGGCGTTCAA  
 AATGCCAAGGAAATCTTGACCCGCTGGGAGTGGAGCCGCTCACGATGACTGCGTATCGGTCCAGCAGC  
 TATGACAGTATCGTCTCCTCCGATCAGCAACCTGGTGGTGGCCAGCTCGGTGCCATCTTGAACCGCCT  
 CGGGGACAATAAGGGCACGCCAGGCTGCGGACCACAGTTGGCGTAGACGGTTCTCTACAAAGATGCAC  
 CCACAGTATTCGCGGGTTCACAAGACCCTGAGGCGCCTGGTGCCTGACTCGGACGTCGCGTTCTCC  
 TCTCGGAGAGTGGCAGTGGCAAGGGAGCCGCCATGGTGACCGCTGTGGCCTACCGCTGGCCGAGCAGCA  
 CCGGCAGATTGAGGAAACCCTGTCCCACTTCCGCCTCAGCAAGCAGGCACTGATGGAGGTGAAGAAGAAG  
 CTGCGGTGAGAGATGAAATGGGGTGAAGAAAGGAGACCAACAGCAGAGCTACGGTCAAAATGCTGCCTT  
 CTTATGTTCCGAGCATCCAGATGGGACTGAGCATGGTGACTTCTTGGCCTTGGATCTCGGAGGAACGAA  
 TTTCCGAGTCTACTGGTAAAGATCCGTAGTGGGAAAAAGAGAACAGTGGAGATGCACAACAAGATCTAC  
 TCCATTCCTGGAAATCATGCAGGGCACCGGGATGAGCTGTTGATCACATTGTCTCCTGCATCTCCG  
 ACTTCTGGACTACATGGGGATCAAAGGCCCGGATGCCTCTGGGCTTACCTTCTCGTTCCCTGCAA  
 GCAGACGAGCCTAGATTGCGGAATCTTGATCACGTGGACAAAGGGATTCAAAGCCACCGACTGTGTGGGT  
 CACGATGTAGCCACTTTACTGAGGGATGCTGTAAGAAAGGAGAGGAATTTGACCTGGATGTGGTGGCTG  
 TGGTCAACGACACCGTGGGCACCATGATGACTTGTGCTTATGAAGAACCTTCTTGTGAGATTGGACTCAT  
 CGTGGGGACTGGCAGCAATGCCTGCTACATGGAGGAGATGAAAAACGTGGAGATGGTGGAGGGGAACCG  
 GGCCAGATGTGCATCAATATGGAATGGGGTGCCTTTGGTGACAACGGCTGTCTGGACGACATCAGAACAG  
 ACTTCGACAAAGTGGTGGACGAATATCTCTAACAGTGGGAAACAAAGTTTGAAGAAGATGATCAGTGG  
 AATGTACCTGGGTGAGATCGTCCGTAACATCCTGATTGACTTACCAAGAAAGGCTTCTCTTCCGGGGA  
 CAGATCTCTGAGCCACTCAAGACCCGAGGCATCTTCGAGACCAAGTTTCTCTCAGATCGAGAGTGACC  
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 GTGGTGGAAAAGATCCGAGAGAACAGAGGCCTAGACCACCTGAATGTAACCGTGGGCGTGGACGGGACGC  
 TCTACAAACTCCATCCACTTCTCCAGAATCATGCACCAACAGTGAAGGAACTGTACCAAAGTGTAC  
 CGTGTCTTCTCTGTCTGAAGACGGCAGCGCAAGGGGGCCGCTTATCACAGCTGTGGCGTGGCG  
 CTCAGAGGAGACCCTACGAACGCC

**ACGCGTACGCGGCCGCTCGAG** - GFP Tag - **GTTTAA**

Protein Sequence: >MG211174 representing BC072628  
 Red=Cloning site Green=Tags(s)

MIAAQLLAYFFTELKDDQVKKIDKYLAMRLSDEILIDILTRFKKEMKNGLSRDYNPTASVKMLPTFVRS  
 IPDGSEKGFIALDLGGSSFRILRVQVNHEKSQNVSMSEVYDTPENIVHGSGSQLFDHVAECLGDFMEK  
 RKIKDKKLPVGF TFSFPCRQSKIDEAVLITWTKRFKASVGEADVVKLLNKAIKKRGDYDANIVAVVNDT  
 VGTMMTCGYDDQQCEVGLIIGTGTNACYMEELRHIDLVEGDEGRMCINTEWGAFGDDGSLEDIRTEFDRE  
 LDRGSLNPGKQLFEKMVSGMYMGELVRLILVKMAKE SLLFEGRITPELLTRGKFTTSDVAAIETDKEGVQ  
 NAKEILTRLGVESHDDCVSVQHVCTIVSFRSANLVAATLGAILNRLRDNKGT PRLRTTVGVDGSLYKMH  
 PQYSRRFHKTLRRLVPDSDVRFLLSESGSGKAAMVTAVAYRLAEQHRQIEETLSHFRLSKQALMEVKKK  
 LRSEMEMPLRKETNSRATVKMLPSYVRSIPDGTEHGDFLALDLGGTNFRVLLVKIRSGKKRTVEMHNKIY  
 SIPLEIMQGTGDELFDHIVSCISDFLDYMGIKGPRMPLGFTFSFPCKQTSLDCGILITWTKGFKATDCVG  
 HDVATLLRDAVKRREEFDL DVVAVVNDTVGTMTCAYEEPSCEIGLIVGTGSNACYMEEMKNVEMVEGNQ  
 GQMCINMEWGAFGDNGCLDDIRDFDKVDEYSLNSGKQRF EKMI SGMYLGEIVRNILIDFTKKGFLFRG  
 QISEPLKTRGIFETKFLSQIESDR LALLQVRAILQQLGLNSTCDD SILVKTVCGVVSKRAAQLCGAGMAA  
 VVEKIRENRGLDHLNVTVGVDGTYK LHPHF SRIMHQTVKELSPKCTVSFLL SEDGSGKAALITAVGVR  
 LRGDPTNA

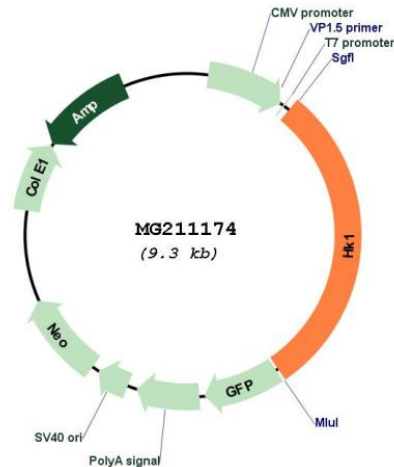
TRTRPLE - GFP Tag - V

Restriction Sites:

SgfI-MluI

Cloning Scheme:



**Plasmid Map:**


**ACCN:** BC072628

**ORF Size:** 2756 bp

**OTI Disclaimer:** The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. [More info](#)

**OTI Annotation:** This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

**Components:** The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

**Reconstitution Method:**

1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.

**RefSeq:** [BC072628](#), [AAH72628](#)

**RefSeq Size:** 4045 bp

**RefSeq ORF:** 2756 bp

**Locus ID:** 15275

**Cytogenetics:** 10 32.37 cM

**Gene Summary:**

Catalyzes the phosphorylation of various hexoses, such as D-glucose, D-glucosamine, D-fructose, D-mannose and 2-deoxy-D-glucose, to hexose 6-phosphate (D-glucose 6-phosphate, D-glucosamine 6-phosphate, D-fructose 6-phosphate, D-mannose 6-phosphate and 2-deoxy-D-glucose 6-phosphate, respectively). Does not phosphorylate N-acetyl-D-glucosamine (By similarity). Mediates the initial step of glycolysis by catalyzing phosphorylation of D-glucose to D-glucose 6-phosphate (By similarity). Involved in innate immunity and inflammation by acting as a pattern recognition receptor for bacterial peptidoglycan. When released in the cytosol, N-acetyl-D-glucosamine component of bacterial peptidoglycan inhibits the hexokinase activity of HK1 and causes its dissociation from mitochondrial outer membrane, thereby activating the NLRP3 inflammasome (PubMed:27374331).[UniProtKB/Swiss-Prot Function]