

Product datasheet for **MR222620**

Hspa1b (NM_010478) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Hspa1b (NM_010478) Mouse Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Hspa1b
Synonyms:	hsp68; Hsp70; Hsp70-1; Hsp70.1
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)



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ORF Nucleotide Sequence:

>MR222620 representing NM_010478
 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
 GCC**CGGATCGCC**

ATGGCCAAGAACACGGCGATCGGCATCGACCTGGGCACCACCTACTCGTGCCTGGGCGTGTTCAGCAGC
 GCAAGGTGGAGATCATCGCCAACGACCAGGGCAACCGCAGACCCCCAGCTACGTGGCCTTCACCGACAC
 CGAGCGCCTCATCGGGGACCGCCCAAGAACCAGGTGGCGCTGAACCCGAGAACCCTGTTCGACCGG
 AAGCGGCTGATCGGCCGCAAGTTCGGCGATGCGGTGGTGCAGTCCGACATGAAGCACTGGCCCTCCAGG
 TGGTGAACGACGGCGACAAGCCCAAGGTGCAGGTGAACAAGGGCGAGAGCCGGTCTTCTCCCGGA
 GGAGATCTCGTCCATGGTGTGACGAAGATGAAGGAGATCGTGAAGGCGTACCTGGGCCACCCGGTGACC
 AACCGGGTATCAGGTGCCCGCTACTTCAACGACTCTCAGCGGCAGGCCACCAAGGACGGGGCGTGA
 TCGCCGGTCTAACGTGTGCGGATCATCAACGAGCCACGGCGCCGCCATCGCCTACGGGCTGGACCG
 GACCGGAAGGGGAGCGCAACGTGCTCATCTTCGACCTGGGGGGCGGCAGTTCGACGTGTCCATCCTG
 ACGATCGACGACGGCATCTTCGAGGTGAAGGCCAGGGCGGGCAGACGCACCTGGGAGGGGAGGACTTCG
 ACAACCGGCTGGTGAAGCACTTCGTGGAGGAGTCAAGAGGAAGCACAAGAAGGACATCAGCCAGAACAA
 GCGCGCGGTGCGGCGGTGCGCACGGCGTGTGAGAGGGCCAAGAGGACGCTGTCTCCAGCACCCAGGCC
 AGCCTGGAGATCGACTCTCTGTTTCGAGGGCATCGACTTCTACACATCCATCAGCGGGCGCGGTTCAAG
 AGCTGTGCTCGGACCTGTTCCGCGGCACGCTGGAGCCCGTGGAGAAGGCCTGCGCGACGCCAAGATGGA
 CAAGGCGCAGATCCACGACCTGGTGTGGTGGGCGGCTCGACGCGCATCCCAAGGTGCAGAAGCTGCTG
 CAGGACTTCTTCAACGGGCGGACCTGAACAAGAGCATCAACCCGGACGAGGCGGTGGCCTACGGGGCGG
 CGGTGCAGGCGGCCATCCTGATGGGGGACAAGTCGGAGAACGTGCAGGACCTGCTGCTGCTGGACGTGGC
 GCCGCTGTCGCTGGGCCTGGAGACTGCGGGCGGGGTGATGACGGCGCTCATCAAGCGCAACTCCACCATC
 CCCACCAAGCAGACGCAGACCTTACCACCTACTCGGACAACCAGCCCGGGTGTGATCCAGGTGTACG
 AGGGCGAGAGGGCCATGACGCGGACAACAACCTGCTGGGGCGCTTCGAGCTGAGCGGCATCCCGCCGGC
 GCCCAGGGGCGTCCCGCAGATCGAGGTGACCTTCGACATCGACGCCAACGGCATCCTGAACGTCACGGCC
 ACCGACAAGAGCACCGGCAAGGCCAACAAGATCACCATCACCAACGACAAGGGCCGCTGAGCAAGGAGG
 AGATCGAGCGCATGGTGCAGGAGGCCGAGCGCTACAAGGCCGAGGACGAGGTGCAGCGGCACAGGGTGGC
 CGCCAAGAACCGCTCGAGTCTATGCCTTCAACATGAAGAGCGCCGTGGAGGACGAGGGTCTCAAGGGC
 AAGCTCAGCGAGGCTGACAAGAAGAAGGTGCTGGACAAGTGCCAGGAGGTCTCTCTGGCTGGACTCCA
 ACACGCTGGCCGACAAGGAGGATTCGTGCACAAGCGGGAGGAGCTGGAGCGGGTGTGCAGCCCCATCAT
 CAGTGGGCTGTACCAGGTGCGGGTGTCTCTGGGGCTGGGGGCTTCGGGGCCAGGCGCCGCCGAAAGGA
 GCCTCTGGCTCAGGACCCACCATCGAGGAGGTGGAT

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence: >MR222620 representing NM_010478
 Red=Cloning site Green=Tags(s)

MAKNTAIGIDLGTTSYSCVGVFQHGKVEIIANDQGNRTTPSYVAFDTERLIGDAAKNQVALNPQNTVFDA
 KRLIGRKFQDAVVQSDMKHWPFQVVDGDKPKVQVNYKGESRSFFPEEISSMVLTKMKEIAEAYLGHPVT
 NAVITVPAYFNDSSQRQATKDAGVIAGLNLVRIINEPTAAAIAAYGLDRTGKGERNVLIFDLGGGTFDVSIL
 TIDDDGIFEVKATAGDTHLGGEDFNRLVSHFVEEFKRKHKKDISQNKRAVRRRLTACERAKRTLSSSTQA
 SLEIDSLFEGIDFYTSITRARFEELCSDLFRGTLEPVEKALRDAKMDKAQIHDLVLVGGSTRIPKVQKLL
 QDFFNGRDLNKSINPDEAVAYGAAVQAAILMGDKSENVQDLLLLDVAPLSLGLTAGGVMTALIKRNSTI
 PTKQTQTFTTYSDNQPGVLIQVYEGERAMTRDNNLLGRFELSGIPPAPRGVQPQIEVTFDIDANGILNVTA
 TDKSTGKANKITITNDKGRLSKEEIERMVQEAERYKAEDVQRDRVAAKNALESYAFNMKSAVEDEGLKG
 KLSEADKKKVLDKCQEVISWLDSENTLADKEEFVHKREELERVCSPIISGLYQAGAPGAGGFGAQPAPKG
 ASGSGPTIEEVD

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

Chromatograms: https://cdn.origene.com/chromatograms/mm9032_a12.zip

Restriction Sites: SgfI-MluI

Cloning Scheme:



ACCN: NM_010478

ORF Size: 1926 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: [NM_010478.2](#), [NP_034608.2](#)

RefSeq Size: 2810 bp

RefSeq ORF: 1929 bp

Locus ID: 15511

UniProt ID: [P17879](#)

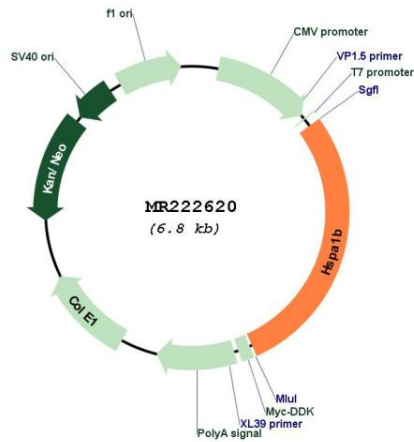
Cytogenetics: 17 18.5 cM

MW: 70.6 kDa

Gene Summary:

Molecular chaperone implicated in a wide variety of cellular processes, including protection of the proteome from stress, folding and transport of newly synthesized polypeptides, activation of proteolysis of misfolded proteins and the formation and dissociation of protein complexes. Plays a pivotal role in the protein quality control system, ensuring the correct folding of proteins, the re-folding of misfolded proteins and controlling the targeting of proteins for subsequent degradation. This is achieved through cycles of ATP binding, ATP hydrolysis and ADP release, mediated by co-chaperones. The co-chaperones have been shown to not only regulate different steps of the ATPase cycle, but they also have an individual specificity such that one co-chaperone may promote folding of a substrate while another may promote degradation. The affinity for polypeptides is regulated by its nucleotide bound state. In the ATP-bound form, it has a low affinity for substrate proteins. However, upon hydrolysis of the ATP to ADP, it undergoes a conformational change that increases its affinity for substrate proteins. It goes through repeated cycles of ATP hydrolysis and nucleotide exchange, which permits cycles of substrate binding and release. The co-chaperones are of three types: J-domain co-chaperones such as HSP40s (stimulate ATPase hydrolysis by HSP70), the nucleotide exchange factors (NEF) such as BAG1/2/3 (facilitate conversion of HSP70 from the ADP-bound to the ATP-bound state thereby promoting substrate release), and the TPR domain chaperones such as HOPX and STUB1. Maintains protein homeostasis during cellular stress through two opposing mechanisms: protein refolding and degradation. Its acetylation/deacetylation state determines whether it functions in protein refolding or protein degradation by controlling the competitive binding of co-chaperones HOPX and STUB1. During the early stress response, the acetylated form binds to HOPX which assists in chaperone-mediated protein refolding, thereafter, it is deacetylated and binds to ubiquitin ligase STUB1 that promotes ubiquitin-mediated protein degradation. Regulates centrosome integrity during mitosis, and is required for the maintenance of a functional mitotic centrosome that supports the assembly of a bipolar mitotic spindle. Enhances STUB1-mediated SMAD3 ubiquitination and degradation and facilitates STUB1-mediated inhibition of TGF-beta signaling. Essential for STUB1-mediated ubiquitination and degradation of FOXP3 in regulatory T-cells (Treg) during inflammation.[UniProtKB/Swiss-Prot Function]

Product images:



Circular map for MR222620