# Heat Shock 70kDa Protein 1b (HSPA1B) Antibody – Mouse Monoclonal

## PRODUCT OVERVIEW

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| **Product Name** | Heat Shock 70kDa Protein 1B (HSPA1B), Monoclonal Antibody |
| **Full Product Name** | HRP-Linked Monoclonal Antibody to Heat Shock 70kDa Protein 1B (HSPA1B) |
| **Product Gene Name** | anti-HSPA1B antibody |
| **Product Synonym Names** | Heat Shock 70kDa Protein 1B; HSP70-2; HSP-A1B; Heat Shock Protein 72 |
| **Clonality** | Monoclonal |
| **Isotype** | IgG1 Kappa |
| **Clone Number** | C3 |
| **Host** | Mouse |
| **Species Reactivity** | Bovine |
| **Form/Format** | Liquid. PBS, pH7.4, containing 0.02% NaN3, 50% glycerol. |
| **Purity/Purification** | Protein A + Protein G affinity chromatography |
| **Concentration** | >=1mg/mL (Please refer to the vial label for the specific concentration.) (lot specific) |
| **Preparation and Storage** | Store at 2 degree C to 8 degree C for frequent use, -20 degree C for 12 months<br>Stable for 12 months if correctly stored. |
| **Matching Pairs** | Antibody: HSPA1B Clone #C3 (MBS2141663)<br>Immunogen: HSPA1B (MBS2010955) |
| **Matching Pairs** | Unconjugated Antibody: HSPA1B Clone #C3 (MBS2152720)<br>HRP Conjugated Antibody: HSPA1B Clone #C3 (MBS2141663) |
| **Molecular Weight** | 70,228 Da |
| **Immunogen Sequence Positions** | Met1~Asp641 |
| **3D Structure** | ModBase 3D Structure for Q27965 |
| **Supply Chain Verification** | Manufactured in a lab with traceable raw materials. Bulk orders can typically be prepared to the customer's specifications, please inquire. |
| **Conjugation** | HRP |
| **Product Categories/Family for anti-HSPA1B antibody** | Monoclonal Antibodies (Primary Abs); Primary, HRP-conjugated; Infection immunity |
| **ISO Certification** | Manufactured in an ISO 9001:2015 and ISO 13485:2016 Certified Laboratory. |
| **Applications Tested/Suitable for anti-HSPA1B antibody** | Western Blot (WB), Immunohistochemistry (IHC), Immunocytochemistry (ICC), Immunoprecipitation (IP) |
| **Application Notes for anti-HSPA1B antibody** | WB: 0.01-2ug/mL<br>IHC: 5-20ug/mL<br>IF: 5-20ug/mL |
| **Related Product Information for anti-HSPA1B antibody** | MBS2141663 is an antibody targeting HSPA1B. Also known as HRP-Linked Monoclonal Antibody to Heat Shock 70kDa Protein 1B (HSPA1B). Reactive in Bovine. Host: Mouse. |

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| **Other Notes** | Small volumes of anti-HSPA1B antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply. |

## ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for HSPA1B. It may not necessarily be applicable to this product.

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| **NCBI GI #** | 73853769 |
| **NCBI GeneID** | 282254 |
| **NCBI Accession #** | NP_976067.2 |
| **UniProt Primary Accession #** | Q27965 |
| **UniProt Secondary Accession #** | Q28122; Q3ZBV7 |
| **UniProt Related Accession #** | Q27965 |
| **GenBank Nucleotide #** | NM_203322.2 |
| **NCBI Official Full Name** | heat shock 70 kDa protein 1B |
| **NCBI Official Symbol** | HSPA1A |
| **NCBI Official Synonym Symbols** | HSP70; HSPA2; HSPA1B; HSP70-2 |
| **UniProt Protein Name** | Heat shock 70 kDa protein 1B |
| **UniProt Synonym Protein Names** | Heat shock 70 kDa protein 2; HSP70.2 |
| **Protein Family** | Heat shock 70 kDa protein |
| **UniProt Gene Name** | HSPA1B |
| **UniProt Synonym Gene Names** | HSP70-2; HSP70.2 |
| **NCBI Protein Information** | heat shock 70 kDa protein 1B |
| **UniProt Comments for HSPA1B** | 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. |
| **Research Articles on HSPA1B** | **1.** Prostaglandin E synthase interacts with inducible heat shock protein 70 after heat stress in bovine primary dermal fibroblast cells. |

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