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Anti-HSP70 Antibody (Monoclonal, BRM-22)

Catalog # ABO10439

Specification

Anti-HSP70 Antibody (Monoclonal, BRM-22) - Product Information

Application	**WB, IHC-P, IHC-F**
Primary Accession	P17879
Host	**Mouse**
Isotype	**Mouse IgG1**
Reactivity	**Human, Rat**
Clonality	**Monoclonal**
Format	**Lyophilized**

Description
Mouse IgG monoclonal antibody for HSP70, heat shock 70kDa protein 1A; heat shock 70kDa protein 1B (HSPA1A; HSPA1B) detection. Tested with WB, IHC-P, IHC-F in Human;bovine;rabbit;rat. No cross reactivity with other proteins.

Reconstitution
Add 1ml of PBS buffer will yield a concentration of 100ug/ml.

Anti-HSP70 Antibody (Monoclonal, BRM-22) - Additional Information

Gene ID 15511

Other Names
Heat shock 70 kDa protein 1B, Heat shock 70 kDa protein 1, HSP70.1, Hspa1b, Hcp70.1, Hsp70-1, Hsp70a1, Hspa1

Calculated MW
70176 MW KDa

Application Details
Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, bovine, rabbit, rat, By Heat

Immunohistochemistry(Frozen Section), 0.5-1 µg/ml, Human, bovine, rabbit, rat, -
Western blot, 0.5 µg/ml, Human, bovine, rabbit, rat

Subcellular Localization
Cytoplasm . Localized in cytoplasmic mRNP granules containing untranslated mRNAs. .

Tissue Specificity
Testis-specific.

Protein Name
Heat shock 70 kDa protein 1A/1B

Contents
Mouse ascites fluid, 1.2% sodium acetate, 2mg BSA, with 0.01mg NaN3 as preservative.

Immunogen

HSP70 isolated from bovine brain.

Purification
Ascites

Cross Reactivity
No cross reactivity with other proteins

Storage

At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.

Sequence Similarities
Belongs to the heat shock protein 70 family.

Anti-HSP70 Antibody (Monoclonal, BRM-22) - Protein Information

Name Hspa1b

Synonyms Hcp70.1, Hsp70-1, Hsp70a1, Hspa1

Function
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.

Cellular Location
Cytoplasm {ECO:0000250|UniProtKB:P0DMV9}. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome {ECO:0000250|UniProtKB:P0DMV9}. Note=Localized in cytoplasmic mRNP

granules containing untranslated mRNAs. {ECO:0000250|UniProtKB:P0DMV9}

Tissue Location
Testis-specific.

Anti-HSP70 Antibody (Monoclonal, BRM-22) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-HSP70 Antibody (Monoclonal, BRM-22) - Images

Anti-HSP70 Antibody (Monoclonal, BRM-22) - Background

Heat-shock proteins, or stress proteins, are expressed in response to heat shock and a variety of other stress stimuli including oxidative free radicals and toxic metal ions. Sargent et al. identified a duplicated HSP70 locus in the class III region of the major histocompatibility complex on 6p21.3. A duplicated locus encoding the major heat shock-induced protein HSP70 is located in the major histocompatibility complex(MHC) class III region 92 kilobases(kb) telomeric to the C2 gene. The 70-kd mammalian heat shock proteins are structurally and functionally related to the uncoating protein that releases clathrin triskelia from coated vesicles.