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Anti-Hsp70 Antibody

Catalog # ABO11121

Product Information

Application	WB, IHC-P, IHC-F, ICC
Primary Accession	P0DMV8
Host	Rabbit
Reactivity	Human, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Heat shock 70 kDa protein 1A/1B(HSPA1A/HSPA1B) detection. Tested with WB, IHC-P, IHC-F, ICC in Human;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	3303;3304
Other Names	Heat shock 70 kDa protein 1A {ECO:0000312|HGNC:HGNC:5232}, Heat shock 70 kDa protein 1, HSP70-1, HSP70.1, HSPA1A, HSPA1, HSX70
Calculated MW	70052
Application Details	Immunohistochemistry(Paraffin-embedded Section), 0.5-1 □g/ml, Human, By Heat Immunocytochemistry , 0.5-1 □g/ml, Human, - Immunohistochemistry(Frozen Section), 0.5-1 □g/ml, Rat, Human Western blot, 0.1-0.5 □g/ml, Human
Subcellular Localization	Cytoplasm . Localized in cytoplasmic mRNP granules containing untranslated mRNAs.
Tissue Specificity	HSPA1B is testis-specific.
Source	Eukaryota
Protein Name	Heat shock 70 kDa protein 1A/1B
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg Thimerosal, 0.05mg NaN3.
Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of human Hsp70(577-596aa VISWLDANTLAEKDEFEHKR), different from the related mouse sequence by four amino acids and from the related rat sequence by

	three amino acids.
Purification	Immunogen affinity purified.
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.

Protein Information

Name	HSPA1A
Synonyms	HSP72 {ECO:0000303|PubMed:24318877}, HSP
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 (PubMed:24012426, PubMed:24318877, PubMed:26865365). 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 (PubMed:27708256). 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 (PubMed:27137183). Enhances STUB1-mediated SMAD3 ubiquitination and degradation and facilitates STUB1-mediated inhibition of TGF-beta signaling (PubMed:24613385). Essential for STUB1-mediated ubiquitination and degradation of FOXP3 in regulatory T-cells (Treg) during inflammation (PubMed:23973223). Required as a co-chaperone for optimal STUB1/CHIP ubiquitination of NFATC3 (By similarity). Negatively regulates heat shock-induced HSF1 transcriptional activity during the attenuation and recovery phase period of the heat shock response (PubMed:9499401). Involved in the clearance of misfolded

PRDM1/Blimp-1 proteins. Sequesters them in the cytoplasm and promotes their association with SYNV1/HRD1, leading to proteasomal degradation (PubMed:28842558).

Cellular Location

Cytoplasm. Nucleus. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Secreted {ECO:0000250|UniProtKB:Q61696}. Note=Localized in cytoplasmic mRNP granules containing untranslated mRNAs

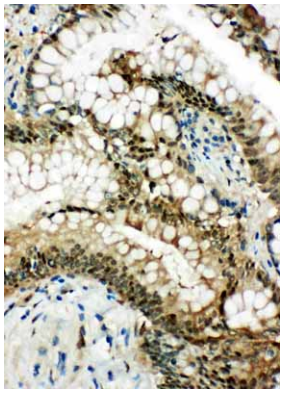
Background

HSPA1(heat shock 70kDa protein 1A) also known as HSP70-1, HSPA1A, HSP70-1A, HSP72 or HSP70I, is a protein that in humans is encoded by the HSPA1A gene. This intronless gene encodes a 70kDa heat shock protein which is a member of the heat shock protein 70 family. The HSPA1A gene encodes a predicted 641-amino acid protein. The HSPA1 gene is mapped on 6p21.33. Shimizu et al.(1999) found that peripheral blood mononuclear cells of 18 major depression patients expressed a short HSPA1A transcript that utilized exon 1 rather than exon 2, which is found in the more common HSPA1A transcript. No protein was associated with expression of this short HSPA1A mRNA, possibly due to lack of a TATA box or loss of internal ribosome binding sites. Treatment with BGP-15, a pharmacologic inducer of Hsp72 that can protect against obesity-induced insulin resistance, improved muscular architecture, strength, and contractile function in severely affected diaphragm muscles in mdx dystrophic mice.

Images

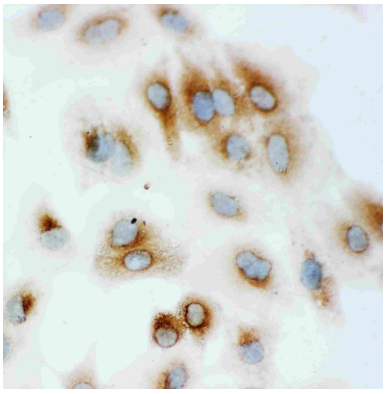


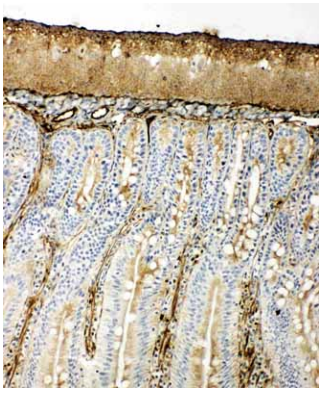
Anti-Hsp70 antibody, ABO11121, Western blottingAll lanes: Anti Hsp70 (ABO11121) at 0.5ug/mlLane 1: 293T Whole Cell Lysate at 40ugLane 2: HELA Whole Cell Lysate at 40ugLane 3: A549 Whole Cell Lysate at 40ugLane 4: A431 Whole Cell Lysate at 40ugLane 5: PANC Whole Cell Lysate at 40ugPredicted bind size: 70KDObserved bind size: 70KD



Anti-Hsp70 antibody, ABO11121, IHC(P)IHC(P): Human Intestinal Cancer Tissue

Anti-Hsp70 antibody, ABO11121, ICCICC: A549 Cell





Anti-Hsp70 antibody, ABO11121, IHC(F)IHC(F):Rat Intestine Tissue

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