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KD-Validated Anti-Hsc70 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1244

Specification

KD-Validated Anti-Hsc70 Rabbit Monoclonal Antibody - Product Information

Application	**WB, ICC**
Primary Accession	P11142
Reactivity	**Rat, Human, Mouse**
Clonality	**Monoclonal**
Isotype	**Rabbit IgG**
Calculated MW	**Predicted, 71 kDa , observed, 70 kDa KDa**
Gene Name	**HSPA8**
Aliases	**HSPA8; Heat Shock Protein Family A (Hsp70) Member 8; HSC70; HSP73; HSPA10; HSC71; Lipopolysaccharide-Associated Protein 1; Heat Shock Cognate 71 KDa Protein; Heat Shock 70kDa Protein 8; LPS-Associated Protein 1; LAP-1; Epididymis Secretory Sperm Binding Protein Li 72p; N-Myristoyltransferase Inhibitor Protein 71; Constitutive Heat Shock Protein 70; Epididymis Luminal Protein 33; Heat Shock Cognate Protein 54; Heat Shock 70 KDa Protein 8; Heat Shock 70kd Protein 10; Heat Shock 70kD Protein 8; EC 3.6.4.10; HEL-S-72p; HEL-33; HSC54; HSP71; NIP71; LAP1**
Immunogen	**A synthesized peptide derived from human Hsc70**

KD-Validated Anti-Hsc70 Rabbit Monoclonal Antibody - Additional Information

Gene ID	**3312**

Other Names
Heat shock cognate 71 kDa protein, 3.6.4.10, Heat shock 70 kDa protein 8, Heat shock protein family A member 8, Lipopolysaccharide-associated protein 1, LAP-1, LPS-associated protein 1, HSPA8 (HGNC:5241)

KD-Validated Anti-Hsc70 Rabbit Monoclonal Antibody - Protein Information

Name HSPA8 (HGNC:5241)

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,

chaperone-mediated autophagy, activation of proteolysis of misfolded proteins, formation and dissociation of protein complexes, and antigen presentation. 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 (PubMed:21148293, PubMed:21150129, PubMed:23018488, PubMed:24732912, PubMed:27916661, PubMed:2799391, PubMed:36586411). This is achieved through cycles of ATP binding, ATP hydrolysis and ADP release, mediated by co-chaperones (PubMed:12526792, PubMed:21148293, PubMed:21150129, PubMed:23018488, PubMed:24732912, PubMed:27916661). The co-chaperones have been shown to not only regulate different steps of the ATPase cycle of HSP70, but they also have an individual specificity such that one co-chaperone may promote folding of a substrate while another may promote degradation (PubMed:12526792, PubMed:21148293, PubMed:21150129, PubMed:23018488, PubMed:24732912, PubMed:27916661). The affinity of HSP70 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. HSP70 goes through repeated cycles of ATP hydrolysis and nucleotide exchange, which permits cycles of substrate binding and release. The HSP70-associated co-chaperones are of three types: J- domain co-chaperones 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:24121476, PubMed:24318877, PubMed:26865365, PubMed:27474739). Plays a critical role in mitochondrial import, delivers preproteins to the mitochondrial import receptor TOMM70 (PubMed:12526792). Acts as a repressor of transcriptional activation. Inhibits the transcriptional coactivator activity of CITED1 on Smad- mediated transcription. Component of the PRP19-CDC5L complex that forms an integral part of the spliceosome and is required for activating pre- mRNA splicing. May have a scaffolding role in the spliceosome assembly as it contacts all other components of the core complex. Binds bacterial lipopolysaccharide (LPS) and mediates LPS-induced inflammatory response, including TNF secretion by monocytes (PubMed:10722728, PubMed:11276205). Substrate recognition component in chaperone-mediated autophagy (CMA), a selective protein degradation process that mediates degradation of proteins with a -KFERQ motif: HSPA8/HSC70 specifically recognizes and binds cytosolic proteins bearing a -KFERQ motif and promotes their recruitment to the surface of the lysosome where they bind to lysosomal protein LAMP2 (PubMed:11559757, PubMed:2799391, PubMed:36586411). KFERQ motif- containing proteins are eventually transported

into the lysosomal lumen where they are degraded (PubMed:11559757, PubMed:2799391, PubMed:36586411). In conjunction with LAMP2, facilitates MHC class II presentation of cytoplasmic antigens by guiding antigens to the lysosomal membrane for interaction with LAMP2 which then elicits MHC class II presentation of peptides to the cell membrane (PubMed:15894275). Participates in the ER-associated degradation (ERAD) quality control pathway in conjunction with J domain-containing co- chaperones and the E3 ligase STUB1 (PubMed:23990462). It is recruited to clathrin-coated vesicles through its interaction with DNAJC6 leading to activation of HSPA8/HSC70 ATPase activity and therefore uncoating of clathrin-coated vesicles (By similarity).

Cellular Location
Cytoplasm. Melanosome. Nucleus, nucleolus. Cell membrane. Lysosome membrane; Peripheral membrane protein; Cytoplasmic side. Note=Localized in cytoplasmic mRNP granules containing untranslated mRNAs (PubMed:17289661). Translocates rapidly from the cytoplasm to the nuclei, and especially to the nucleoli, upon heat shock (PubMed:1586970)

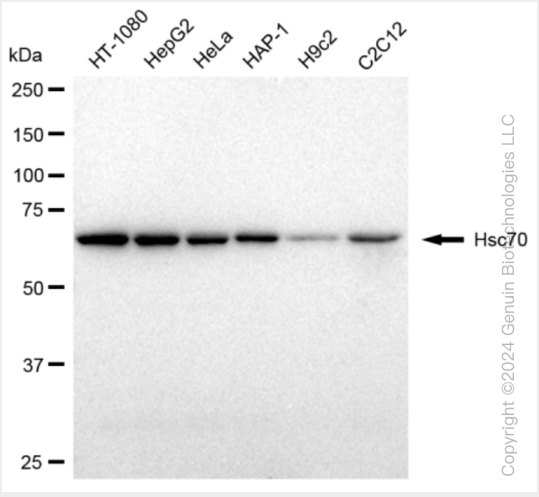
Tissue Location
Ubiquitous..

KD-Validated Anti-Hsc70 Rabbit Monoclonal Antibody - 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

KD-Validated Anti-Hsc70 Rabbit Monoclonal Antibody - Images



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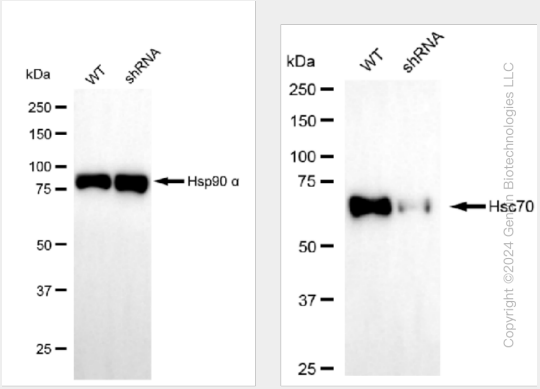
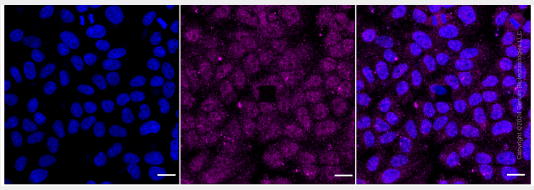
Western blotting analysis using anti-Hsc70 antibody (Cat#AGI1244). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-Hsc70 antibody (Cat#AGI1244, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Western blotting analysis using anti-Hsc70 antibody (Cat#AGI1244). Hsc70 expression in wild type (WT) and Hsc70 shRNA knockdown (KD) 293T cells with 30 µg of total cell lysates. β-Tubulin serves as a loading control. The blot was incubated with anti-Hsc70 antibody (Cat#AGI1244, 1:5,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Immunocytochemical staining of HepG2 cells with anti-Hsc70 antibody (Cat#AGI1244, 1:1,000). Nuclei were stained blue with DAPI; Hsc70 was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: Medium. Scale bar: 20 µm.