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HSPA8 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AW5209

Product Information

Application	FC, IF, IHC-P, WB
Primary Accession	P11142
Other Accession	P63018, P63017, P19378, O73885, P19120
Reactivity	Human, Mouse, Rat
Predicted	Hamster, Bovine, Chicken
Host	Rabbit
Clonality	Polyclonal
Calculated MW	70898
Isotype	Rabbit IgG
Antigen Source	HUMAN

Additional Information

Gene ID	3312
Antigen Region	82-110
Other Names	HSPA8; HSC70; HSP73; HSPA10; Heat shock cognate 71 kDa protein; Heat shock 70 kDa protein 8
Dilution	FC~~1:10~50 IF~~1:10~50 IHC-P~~1:100~500 WB~~1:1000
Target/Specificity	This HSPA8 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 82-110 amino acids from the N-terminal region of human HSPA8.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	HSPA8 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

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..

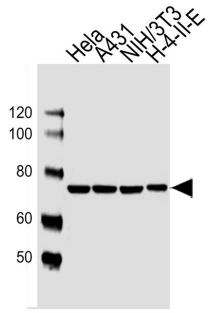
Background

HSPA8 belongs to the heat shock protein 70 family which contains both heat-inducible and constitutively expressed members. The latter are called heat-shock cognate proteins. HSPA8 is a heat-shock cognate protein. This protein binds to nascent polypeptides to facilitate correct folding. The protein also functions as an ATPase in the disassembly of clathrin-coated vesicles during transport of membrane components through the cell.

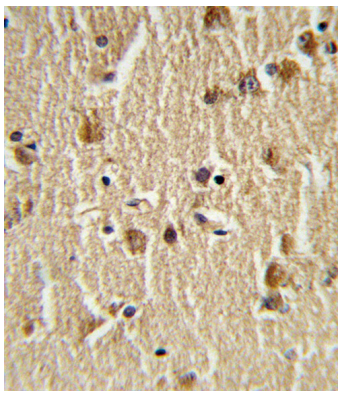
References

Tsukahara F., Yoshioka T.Mol. Pharmacol. 58:1257-1263(2000)
Egerton M., Moritz R.L.Biochem. Biophys. Res. Commun. 224:666-674(1996)

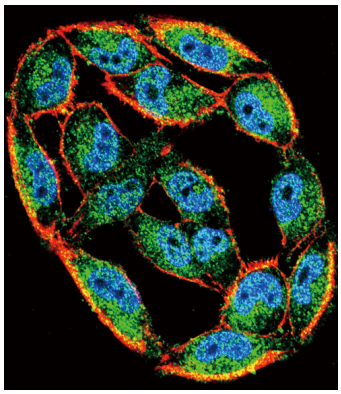
Images



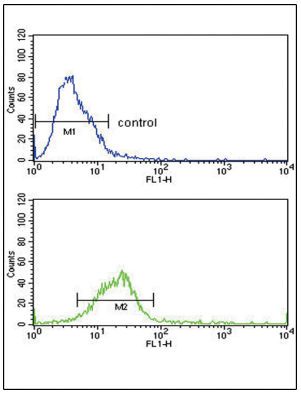
Western blot analysis of lysates from Hela,A431,mouse NIH/3T3,rat H-4-Ⅱ-E cell line (from left to right), using HSPA8 Antibody (N-term)(Cat. #AW5209). AW5209 was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:10000 dilution was used as the secondary antibody.



Formalin-fixed and paraffin-embedded human brain tissue reacted with HSPA8 Antibody (N-term), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



Confocal immunofluorescent analysis of HSPA8 Antibody (N-term)(Cat#AW5209) with A2058 cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green). Actin filaments have been labeled with Alexa Fluor 555 phalloidin (red).DAPI was used to stain the cell nuclear (blue).



HSPA8 Antibody (N-term) (Cat. #AW5209) flow cytometric analysis of Hela cells (bottom histogram) compared to a negative control cell (top histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.