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HSPA5 Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP5041c

Product Information

Application	WB, IHC-P, IF, E
Primary Accession	P11021
Other Accession	P06761, P20029, Q90593, Q0VCX2
Reactivity	Human, Zebrafish
Predicted	Bovine, Chicken, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB20813
Calculated MW	72333
Antigen Region	261-289

Additional Information

Gene ID	3309
Other Names	78 kDa glucose-regulated protein, GRP-78, Endoplasmic reticulum lumenal Ca(2+)-binding protein grp78, Heat shock 70 kDa protein 5, Immunoglobulin heavy chain-binding protein, BiP, HSPA5, GRP78
Target/Specificity	This HSPA5 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 261-289 amino acids from the Central region of human HSPA5.
Dilution	WB~~1:1000 IHC-P~~1:100~500 IF~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
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	HSPA5 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	HSPA5 (HGNC:5238)

Function	Endoplasmic reticulum chaperone that plays a key role in protein folding and quality control in the endoplasmic reticulum lumen (PubMed:2294010, PubMed:23769672, PubMed:23990668, PubMed:28332555). Involved in the correct folding of proteins and degradation of misfolded proteins via its interaction with DNAJC10/ERdj5, probably to facilitate the release of DNAJC10/ERdj5 from its substrate (By similarity). Acts as a key repressor of the EIF2AK3/PERK and ERN1/IRE1- mediated unfolded protein response (UPR) (PubMed:11907036, PubMed:1550958, PubMed:19538957, PubMed:36739529). In the unstressed endoplasmic reticulum, recruited by DNAJB9/ERdj4 to the luminal region of ERN1/IRE1, leading to disrupt the dimerization of ERN1/IRE1, thereby inactivating ERN1/IRE1 (By similarity). Also binds and inactivates EIF2AK3/PERK in unstressed cells (PubMed:11907036). Accumulation of misfolded protein in the endoplasmic reticulum causes release of HSPA5/BiP from ERN1/IRE1 and EIF2AK3/PERK, allowing their homodimerization and subsequent activation (PubMed:11907036). Plays an auxiliary role in post-translational transport of small presecretory proteins across endoplasmic reticulum (ER). May function as an allosteric modulator for SEC61 channel-forming translocon complex, likely cooperating with SEC62 to enable the productive insertion of these precursors into SEC61 channel. Appears to specifically regulate translocation of precursors having inhibitory residues in their mature region that weaken channel gating. May also play a role in apoptosis and cell proliferation (PubMed:26045166).
Cellular Location	Endoplasmic reticulum lumen. Melanosome. Cytoplasm {ECO:0000250|UniProtKB:P20029}. Cell surface Note=Identified by mass spectrometry in melanosome fractions from stage I to stage IV (PubMed:12643545). Localizes to the cell surface of epithelial cells in response to high levels of free iron (PubMed:20484814, PubMed:24355926, PubMed:27159390)

Background

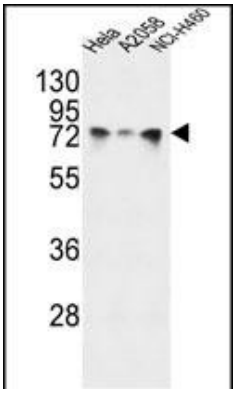
When Chinese hamster K12 cells are starved of glucose, the synthesis of several proteins, called glucose-regulated proteins (GRPs), is markedly increased. Hendershot et al. (1994) [PubMed 8020977] pointed out that one of these, GRP78 (HSPA5), also referred to as 'immunoglobulin heavy chain-binding protein' (BiP), is a member of the heat-shock protein-70 (HSP70) family and is involved in the folding and assembly of proteins in the endoplasmic reticulum (ER). Because so many ER proteins interact transiently with GRP78, it may play a key role in monitoring protein transport through the cell.

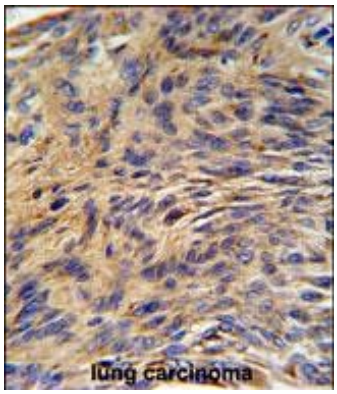
References

Zhao, C., et al. J. Med. Virol. 82(1):14-22(2010) Zhuang, L., et al. Mod. Pathol. 23(1):45-53(2010) Arnaudeau, S., et al. Proteomics 9(23):5316-5327(2009)

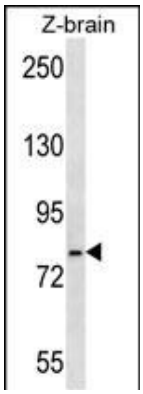
Images

HSPA5 Antibody (Center) (Cat. #AP5041c) western blot analysis in Hela,A2058,NCI-H460 cell line lysates (35ug/lane).This demonstrates the HSPA5 antibody detected the HSPA5 protein (arrow).

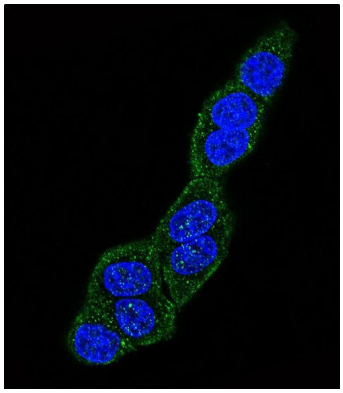




HSPA5 Antibody (Center) (Cat. #AP5041c) IHC analysis in formalin fixed and paraffin embedded human lung carcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the HSPA5 Antibody (Center) for immunohistochemistry. Clinical relevance has not been evaluated.



HSPA5 Antibody (Center) (Cat. #AP5041c) western blot analysis in zebra fish brain tissue lysates (35ug/lane).This demonstrates the HSPA5 antibody detected the HSPA5 protein (arrow).



Confocal immunofluorescent analysis of HSPA5 Antibody (Center)(Cat#AP5041c) with Hela cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green).DAPI was used to stain the cell nuclear (blue).

Citations

- Transcriptome analysis of during intracellular infection reveals excludons are involved with the activation of a mitochondrion-like energy generation program
- Pharmacological activation of ATF6 remodels the proteostasis network to rescue pathogenic GABA receptors
- Proteostasis Regulators Restore Function of Epilepsy-Associated GABAReceptors