Datasheet for ABIN361708

anti-HSP70 antibody

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Overview

Quantity:	200 µg
Target:	HSP70
Reactivity:	Human
Host:	Mouse
Clonality:	Monoclonal
Conjugate:	This HSP70 antibody is un-conjugated
Application:	Western Blotting (WB), ELISA, Immunohistochemistry (IHC), Immunofluorescence (IF), Flow Cytometry (FACS), Immunocytochemistry (ICC), Immunoelectron Microscopy (IEM), Antibody Array (AA), BioImaging (BI)

Product Details

Immunogen:	Human HSP70
Clone:	C92F3A-5
Isotype:	IgG1
Specificity:	Detects ~70 kDa. Does not cross-react with HSC70 (HSP73).
Cross-Reactivity:	C. elegans, Carp, Chicken, Cow, Dog, Drosophila melanogaster, Guinea Pig, Hamster, Human, Monkey, Mouse, Pig, Rabbit, Rat, Sheep
Purification:	Protein G Purified

Target Details

Target:	HSP70

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Target Details

Alternative Name:	HSP70 (HSP70 Products)
Background:	HSP70 genes encode abundant heat-inducible 70- kDa HSPs (HSP70s). In most eukaryotes HSP70 genes exist as part of a multigene family. They are found in most cellular compartments of eukaryotes including nuclei, mitochondria, chloroplasts, the endoplasmic reticulum and the cytosol, as well as in bacteria. The genes show a high degree of conservation, having at least 50 % identity (2). The N-terminal two thirds of HSP70s are more conserved than the C-terminal third. HSP70 binds ATP with high affinity and possesses a weak ATPase activity which can be stimulated by binding to unfolded proteins and synthetic peptides (3). When HSC70 (constitutively expressed) present in mammalian cells was truncated, ATP binding activity was found to reside in an N-terminal fragment of 44 kDa which lacked peptide binding capacity. Polypeptide binding ability therefore resided within the C-terminal half (4). The structure of this ATP binding domain displays multiple features of nucleotide binding proteins (5). All HSP70s, regardless of location, bind proteins, particularly unfolded ones. The molecular chaperones of the HSP70 family recognize and bind to nascent polypeptide chains as well as partially folded intermediates of proteins preventing their aggregation and misfolding. The binding of ATP triggers a critical conformational change leading to the release of the bound substrate protein (6). The universal ability of HSP70s to undergo cycles of binding to and release from hydrophobic stretches of partially unfolded proteins determines their role in a great variety of vital intracellular functions such as protein synthesis, protein folding and oligomerization and protein transport. For more information visit our HSP70 Scientific Resource Guide at http://www.HSP70.com.
Gene ID:	3303
NCBI Accession:	NP_005336
UniProt:	P0DMV8, P0DMV9

Application Details

Application Notes:	• WB (1:1000) • IHC (1:10000) • ICC/IF (1:1000) • FACS (1:1000) • optimal dilutions for assays should be determined by the user.
Comment:	1 µg/ml of ABIN361707 was sufficient for detection of HSP70 in 20 µg of heat shocked HeLa cell lysate by colorimetric immunoblot analysis using Goat anti-mouse IgG:HRP as the secondary antibody.

Application Details

Restrictions:	For Research Use only

Handling

Format:	Liquid
Concentration:	1 mg/mL
Buffer:	PBS pH 7.4, 50 % glycerol, 0.1 % sodium azide, Storage buffer may change when conjugated
Preservative:	Sodium azide
Precaution of Use:	This product contains Sodium azide: a POISONOUS AND HAZARDOUS SUBSTANCE which should be handled by trained staff only.
Storage:	-20 °C
Storage Comment:	-20°C

Publications

Product cited in:

Kuta, Larochelle, Fernandez, Pal, Minotti, Tibshirani, St Louis, Gentil, Nalbantoglu, Hermann, Durham et al.: "Depending on the stress, histone deacetylase inhibitors act as heat shock protein co-inducers in motor neurons and potentiate arimoclomol, exerting neuroprotection through multiple mechanisms in ALS ..." in: **Cell stress & chaperones**, Vol. 25, Issue 1, pp. 173-191, (2020) (PubMed).

Bhattacharya, Bernasconi, Picard: "Luminescence resonance energy transfer between genetically encoded donor and acceptor for protein-protein interaction studies in the molecular chaperone HSP70/HSP90 complexes." in: **Scientific reports**, Vol. 8, Issue 1, pp. 2801, (2019) (PubMed).

Qiao, Jin, Pang, Moskophidis, Mivechi: "The transcriptional regulator of the chaperone response HSF1 controls hepatic bioenergetics and protein homeostasis." in: **The Journal of cell biology**, Vol. 216, Issue 3, pp. 723-741, (2017) (PubMed).

Dayalan Naidu, Sutherland, Zhang, Risco, de la Vega, Caunt, Hastie, Lamont, Torrente, Chowdhry, Benjamin, Keyse, Cuenda, Dinkova-Kostova: "Heat Shock Factor 1 Is a Substrate for p38 Mitogen-Activated Protein Kinases." in: **Molecular and cellular biology**, Vol. 36, Issue 18, pp. 2403-17, (2017) (PubMed).

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Publications

Ogilvie, Cacciani, Akkad, Larsson: "Targeting Heat Shock Proteins Mitigates Ventilator Induced Diaphragm Muscle Dysfunction in an Age-Dependent Manner." in: **Frontiers in physiology**, Vol. 7, pp. 417, (2016) (PubMed).

There are more publications referencing this product on: Product page

Images

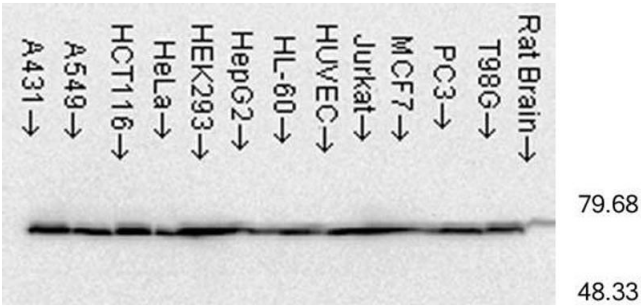
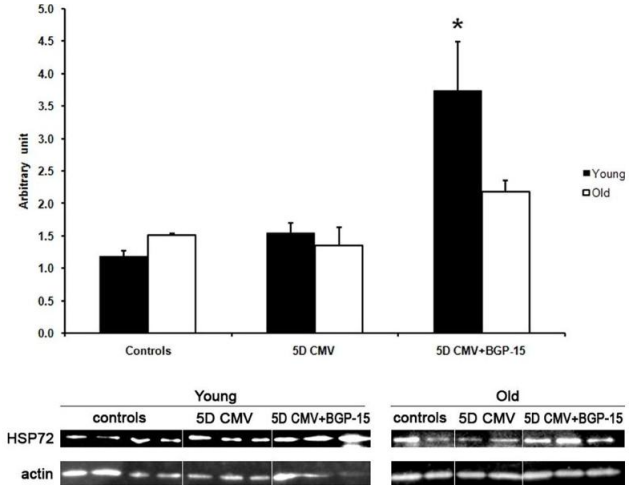
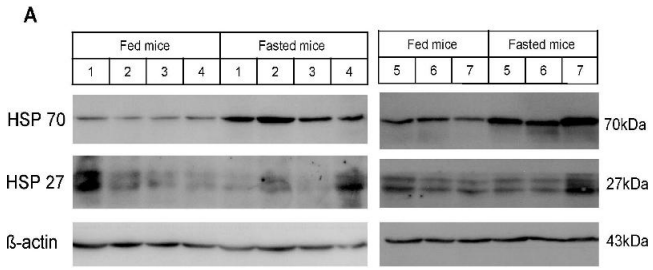


Image 1. Hsp70 (C92), cell lines.



Western Blotting

Image 2. Western blot analyses of the Hsp72 protein expression normalized to actin contents in the diaphragm in control animals (individual rats: young n = 4 and old emphn = 2) compared with the age-matched animals exposed to CMV for 5 days with (individual rats: young n = 3 and old n = 2) and without BGP-15 (individual rats: young n = 3 and old n = 3). (Black bars, young, white bars, old). Values are means + SEM. Significance level, *p < 0.05. - figure provided by CiteAb. Source: PMID25356750



Western Blotting

Image 3. Western blot analysis of heat shock protein expression in fasted mouse livers.(A) Heat shock protein (HSP)70, HSP27, and β-actin expression in the livers from fed mice (control) and 3-day-fasted mice (7 mice in each group) was determined by western blot. (B) The bar graph shows the average HSP70/β-actin densities plus standard error of the mean, densities were analyzed using ImageJ software. Statistical analyses were performed using the independent samples T test. *p <0.05. - figure provided by CiteAb. Source: PMID25356750

Please check the product details page for more images. Overall 11 images are available for ABIN361708.

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