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antibody and ELISA experts

BOSTER BIOLOGICAL TECHNOLOGY
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Anti-HSP70 Monoclonal Antibody

Catalog Number: M00949-1

About HSP70

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 (1). 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 (2). 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 (3). The structure of this ATP binding domain displays multiple features of nucleotide binding proteins (4). 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 (5). 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.

Overview

Product Name	Anti-HSP70 Monoclonal Antibody
Reactive Species	Chicken, Drosophila, Human, Mouse, Rat, Yeast, Amphibians, Bacteria, Fish, Brine shrimp
Description	Boster Bio Anti-HSP70 Monoclonal Antibody catalog # M00949-1. Tested in IP, IF, WB applications. This antibody reacts with Human, Mouse, Rat.
Application	IP, IF, IHC, ICC, WB, Antibody Microarray
Clonality	Monoclonal 3A3
Formulation	PBS pH7.2, 50% glycerol, 0.09% sodium azide
Storage Instructions	Store at -20°C for one year. Avoid repeated freeze-thaw cycles.
Host	Mouse
Uniprot ID	P0DMV8

Technical Details

Immunogen	Human recombinant HSP70 overexpressed in E.coli
Predicted Reactive Species	Canine
Cross Reactivity	Detects ~70kDa. May detect HSP70, HSC70, p75 and HSP72.

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Isotype	IgG1
Form	liquid
Concentration	1 mg/ml
Purification	Protein G Purified
Suggested Dilutions	Dilute the sample so that the expected range of concentrations fall within the detection range of this kit. If the expected range of concentration is unknown, a pilot test should be conducted to decide the optimal dilution ratio for your samples. Some PubMed article(s) citing the expression level of this target are as follows: Boster Bio's internal QC testing used: WB (1:5000), ICC/IF (1:500), IP (2μg); optimal dilutions for assays should be determined by the user.

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Anti-HSP70 Monoclonal Antibody (M00949-1) Images

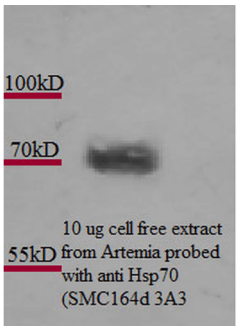

Figure 2. Western blot analysis of HSPA1A using anti-HSPA1A antibody (M00949-1).
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions.
After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-HSPA1A antigen affinity purified polyclonal antibody (Catalog # M00949-1) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-Mouse IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # SA1021) with Tanon 5200 system. A specific band was detected for HSPA1A.

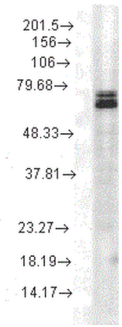

Figure 3. Western blot analysis of HSPA1A using anti-HSPA1A antibody (M00949-1).
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions.
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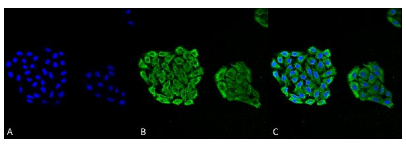

Immunocytochemistry/Immunofluorescence analysis using Mouse Anti-HSP70 Monoclonal Antibody, Clone 3A3 (M00949-1) . Tissue: Cervical Cancer cell line (HeLa) . Species: Human. Fixation: 4% Formaldehyde for 15 min at RT. Primary Antibody: Mouse Anti-HSP70 Monoclonal Antibody (M00949-1) at 1:100 for 60 min at RT. Secondary Antibody: Goat Anti-Mouse ATTO 488 at 1:100 for 60 min at RT. Counterstain: DAPI (blue) nuclear stain at 1:5000 for 5 min RT. Localization: Cytoplasm. Magnification: 40X.

5 Publications Citing This Product

1. PubMed ID: 10.1080/1028602042000325609, Effects of isoliensinine on angiotensin II-induced proliferation of porcine coronary arterial smooth muscle cells

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2. PubMed ID: -, Wang,D.,Ripley-Gonzalez,J.W.& Hu,Y.Aerobic Physical Training Protects the Rat Brain Against Exercise-Heat Related Oxidative Damage through the Increased Expression of HSP70.Neurophysiology 51,66–71(2019).https://doi.org/10.1007/s11062-019-09794-9

3. PubMed ID: 15378770, Down-modulation of heat shock protein 70 and up-modulation of Caspase-3 during schisandrin B-induced apoptosis in human hepatoma SMMC-7721 cells

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