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Anti-HSP60 HSPD1 Monoclonal Antibody

Catalog Number: M01280-2

About HSP60

In both prokaryotic and eukaryotic cells, the misfolding and aggregation of proteins during biogenesis and under conditions of cellular stress are prevented by molecular chaperones. Members of the HSP60 family of heat shock proteins are some of the best characterized chaperones. HSP60, also known as Cpn60 or GroEl, is an abundant protein synthesized constitutively in the cell that is induced to a higher concentration after brief cell shock. It is present in many species and exhibits a remarkable sequence homology among various counterparts in bacteria, plants, and mammals with more than half of the residues identical between bacterial and mammalian HSP60 (1-3). Whereas mammalian HSP60 is localized within the mitochondria, plant HSP60, or otherwise known as Rubisco-binding protein, is located in plant chloroplasts. It has been indicated that these proteins carry out a very important biological function due to the fact that HSP60 is present in so many different species. The common characteristics of the HSP60s from the divergent species are i) high abundance, ii) induction with environmental stress such as heat shock, iii) homo-oligomeric structures of either 7 or 14 subunits which reversibly dissociate in the presence of Mg2+ and ATP, iv) ATPase activity and v) a role in folding and assembly of oligomeric protein structures (4). These similarities are supported by recent studies where the single-ring human mitochondrial homolog, HSP60 with its co-chaperonin, HSP10 were expressed in a E. coli strain, engineered so that the groE operon is under strict regulatory control. This study has demonstrated that expression of HSP60-HSP10 was able to carry out all essential in vivo functions of GroEL and its co-chaperonin, GroES (5). Another important function of HSP60 and HSP10 is their protective functions against infection and cellular stress. HSP60 has however been linked to a number of autoimmune diseases, as well as Alzheimer's, coronary artery diseases, MS, and diabetes (6-9).

Overview

Product Name	Anti-HSP60 HSPD1 Monoclonal Antibody
Reactive Species	Bovine, Chicken, Dog, Drosophila, Guinea pig, Hamster, Human, Monkey, Mouse, Pig, Plant, Rabbit, Rat, Sheep, Xenopus, Silkworm
Description	Boster Bio Anti-HSP60 HSPD1 Monoclonal Antibody catalog # M01280-2. Tested in ELISA, IP, IF, IHC, ICC, WB applications. This antibody reacts with Human, Mouse, Rat.
Application	ELISA, Flow Cytometry, IP, IHC, WB
Clonality	Monoclonal LK1
Formulation	PBS, 50% glycerol, 0.09% sodium azide
Storage Instructions	Store at -20°C for one year. Avoid repeated freeze-thaw cycles.
Host	Mouse
Uniprot ID	P10809

Technical Details

Immunogen	Recombinant human HSP60
Predicted Reactive Species	Bovine, Goat, Guinea Pig, Hamster, Monkey, Sheep

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Cross Reactivity	Detects ~60kDa.
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 (1:20000), IHC (1:100), ICC/IF (1:100), IP (1:200); optimal dilutions for assays should be determined by the user.

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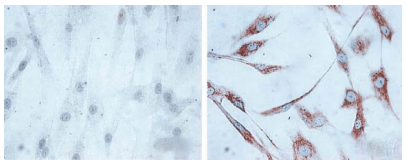
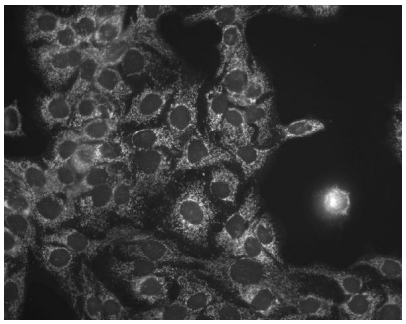
Anti-HSP60 HSPD1 Monoclonal Antibody (M01280-2) Images



Immunocytochemistry/Immunofluorescence analysis using Mouse Anti-Hsp60 Monoclonal Antibody, Clone LK1, (M01280-2) . Tissue: skin Fibroblasts. Species: Human. Fixation: Cold 100% methanol for 30 minutes at -20°C . Primary Antibody: Mouse Anti-Hsp60 Monoclonal Antibody (M01280-2) at 1:1000 for senescence. Courtesy of: Valentina di Felice, University of Palermo, Italy.



Immunocytochemistry/Immunofluorescence analysis using Mouse Anti-Hsp60 Monoclonal Antibody, Clone LK-1 (M01280-2) . Tissue: HaCaT cells. Species: Human. Fixation: Cold 100% methanol at -20°C for 10 minutes. Primary Antibody: Mouse Anti-Hsp60 Monoclonal Antibody (M01280-2) at 1:100 for 1 hour at RT. Secondary Antibody: FITC Goat Anti-Mouse (green) at 1:50 for 1 hour at RT. Localization: Cytoplasmic Staining.

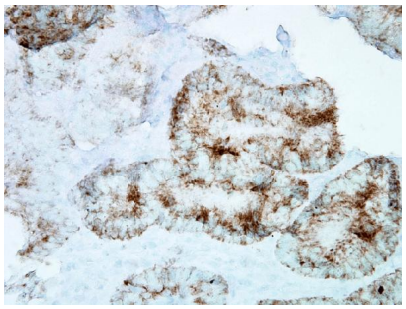


Figure 2. IHC analysis of HSPD1 using anti-HSPD1 antibody (M01280-2).
HSPD1 was detected in paraffin-embedded section. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-HSPD1 Antibody (M01280-2) overnight at 4°C. Biotinylated goat anti Mouse IgG antibody was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC)(Catalog # SA1021) with DAB as the chromogen.

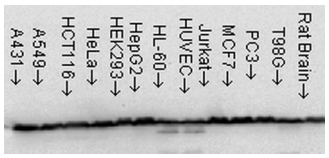


Figure 3. Western blot analysis of HSPD1 using anti-HSPD1 antibody (M01280-2).
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions.
After Electrophoresis, 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-HSPD1 antigen affinity purified polyclonal antibody (Catalog # M01280-2) 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 HSPD1.

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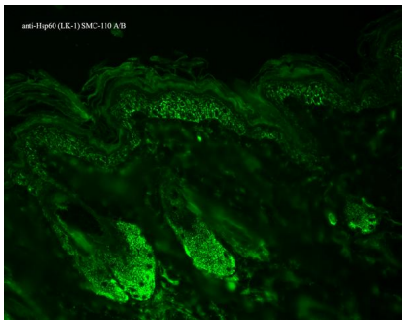

Figure 4. IHC analysis of HSPD1 using anti-HSPD1 antibody (M01280-2).
HSPD1 was detected in paraffin-embedded section. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-HSPD1 Antibody (M01280-2) overnight at 4°C. Biotinylated goat anti Mouse IgG antibody was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC)(Catalog # SA1021) with DAB as the chromogen.

3 Publications Citing This Product

1. PubMed ID: 24735884, Hepatic mitochondrial and ER stress induced by defective PPAR? signaling in the pathogenesis of hepatic steatosis

2. PubMed ID: 27698781, Expression and location of HSP60 and HSP10 in the heart tissue of heat-stressed rats

3. PubMed ID: 22500017, Hager L, Li L, Pun H, Liu L, Hossain Ma, Maguire Gf, Naples M, Baker C, Magomedova L, Tam J, Adeli K, Cummins Cl, Connelly Pw, Ng Ds. J Biol Chem. 2012 Jun 8;287(24):20755-68. Doi: 10.1074/Jbc.M112.340919. Epub 2012 Apr 12. Lecithin:Cholesterol Ac...

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