PRODUCT INFORMATION

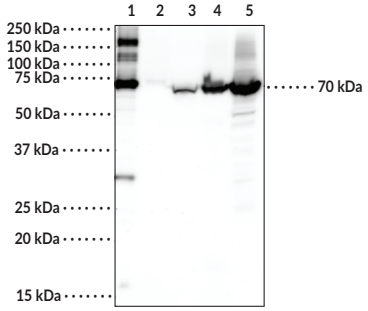
Hsp70 (HspA1A) Polyclonal Antibody

Item No. 24532

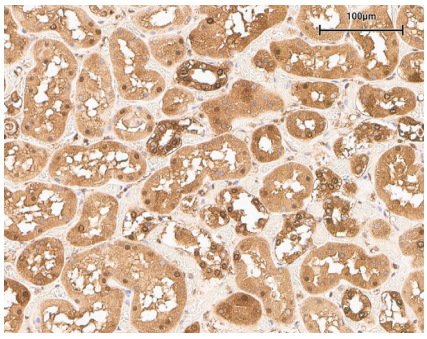
Overview and Properties

Contents:	This vial contains 200 µg of Hsp70 (HspA1A) Polyclonal Antibody.
Synonyms:	Heat Shock 70 kDa Protein 1A, Heat Shock Protein 70, HSP70-1
Immunogen:	Human recombinant protein
Species Reactivity:	(+) Human and rat; other species not tested
Uniprot No.:	P0DMV8
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥3 years
Storage Buffer:	PBS, pH 7.2, 50% glycerol with 0.02% sodium azide
Host:	Rabbit
Applications:	ELISA, Immunofluorescence (IF), Immunohistochemistry (IHC), and Western blot (WB); the recommended starting dilution for IF and IHC is 1:200 and 1:500 for ELISA and WB. Other applications were not tested, therefore optimal working concentration/ dilution should be determined empirically.

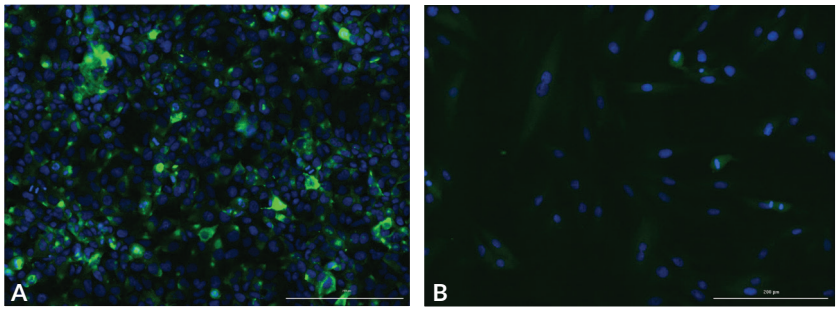
Images



Lane 1: Hsp70 (HspA1A) Recombinant Protein (0.1 µg)
Lane 2: GRP78 Recombinant Protein (0.1 µg) [negative control]
Lane 3: Jurkat Cell Lysate (50 µg)
Lane 4: A549 Cell Lysate (50 µg)
Lane 5: HeLa Heat Shock Cell Lysate (50 µg)



Immunohistochemistry analysis of formalin-fixed, paraffin-embedded (FFPE) human liver tissue after heat induced antigen retrieval in pH 6.0 citrate buffer. After incubation with HSP70 (HspA1A) Polyclonal Antibody (Item No. 24532) at a 1:200 dilution, slides were incubated with biotinylated secondary antibody, followed by alkaline phosphatase-streptavidin and chromogen (DAB).



Panel A: Immunofluorescent staining of Huh-7 (human liver) cells. Hsp70 (HspA1A) Polyclonal Antibody at dilution of 1:200 followed by Goat Anti-Rabbit IgG FITC (Item No. 10006588) (green) and Hoechst nuclear stain (blue). *Panel B:* Immunofluorescent staining of H9C2 (rat myoblast) cells. Hsp70 (HspA1A) Polyclonal Antibody at dilution of 1:100 followed by Goat Anti-Rabbit IgG FITC (Item No. 10006588) (green) and Hoechst nuclear stain (blue).

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Description

Heat shock protein 70s (Hsp70s) are abundant and stress-inducible 70 kDa molecular chaperone proteins encoded by a highly conserved, multigene family.[1] They are monomeric proteins that can be divided into two functional domains: An N-terminal ATPase domain and a substrate binding domain that contains a highly conserved EEVD motif at its C-terminus. Hsp70s are found in the cytosol, nuclei, endoplasmic reticulum, mitochondria, and chloroplasts of eukaryotes, as well as in bacteria. They function as molecular chaperones that assist in a wide range of cellular processes, including refolding of aggregated or misfolded proteins, co- and post-translational folding and assembly of nascent peptides, membrane translocation of secretory and organellar proteins, controlling activity of regulatory nuclear receptors, kinases and transcription factors, as well as cooperativity with the Hsp90 chaperone system in eukaryotes.[2] The Hsp70 chaperone cycle is ATP-dependent and initiated by transient interaction of the Hsp70 substrate binding domain with hydrophobic regions within a peptide or protein. It consists of an alteration between the low-affinity ATP-bound state with fast rates of substrate exchange and the high-affinity ADP bound state with slow rates of substrate exchange. Hsp70s are subject to a variety of post-translational modifications and their expression is upregulated under conditions of cellular stress and in a variety of disease states. Cayman's Hsp70 (HspA1A) Polyclonal Antibody can be used for ELISA, Immunofluorescence, Immunohistochemistry, and Western blot applications. The antibody recognizes Hsp70, also known as HspA1A, at ~70 kDa from human samples.

References

1. Boorstein, W.R., Ziegelhoffer, T., and Craig, E.A. Molecular evolution of the HSP70 multigene family. *J. Mol. Evol.* **38(1)**, 1-17 (1994).
2. Mayer, M.P., and Bukau, B. Hsp70 chaperones: Cellular functions and molecular mechanism. *Cell Mol. Life Sci.* **62(6)**, 670-684 (2005).

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