10320 Camino Santa Fe, Suite A
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HSP70 Antibody
HSP70 Antibody, Clone 3A3
Catalog # ASM10095

Specification

HSP70 Antibody - Product Information

Application	**WB, IHC, ICC, IP, AM**
Primary Accession	P08107
Other Accession	NP_005336.3
Host	**Mouse**
Isotype	**IgG1**
Reactivity	**Human, Mouse, Rat, Chicken, Yeast, Amphibian, Fish, Bacteria, Drosophila**
Clonality	**Monoclonal**

Description
Mouse Anti-Human HSP70 Monoclonal IgG1

Target/Specificity
Detects ~70kDa. May detect HSP70, HSC70, p75 and HSP72.

Other Names
HSP70 1 Antibody, HSP70 2 Antibody, HSP70.1 Antibody, HSP72 Antibody, HSP73 Antibody, HSPA1 Antibody, HSPA1A Antibody, HSPA1B Antibody

Immunogen
Human recombinant HSP70 overexpressed in E.coli

Purification
Protein G Purified

Storage	**-20ºC**

Storage Buffer
PBS pH7.2, 50% glycerol, 0.09% sodium azide

Shipping Temperature	**Blue Ice or 4ºC**

Certificate of Analysis
0.2 µg/ml of SMC-164 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.

Cellular Localization
Cytoplasm

HSP70 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides

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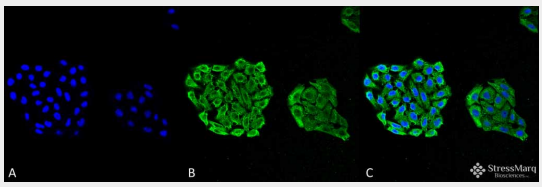
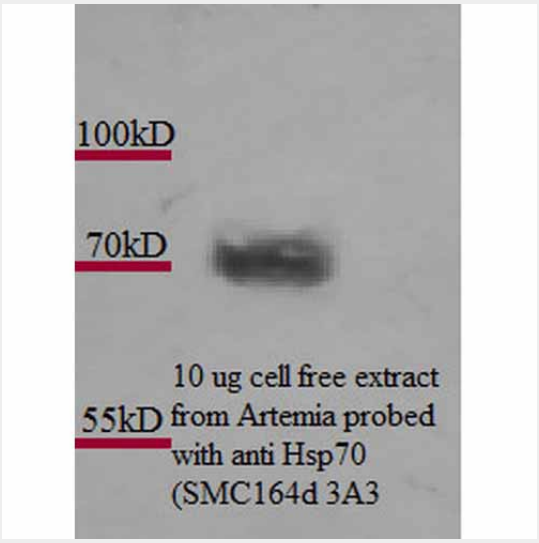
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

HSP70 Antibody - Images



Immunocytochemistry/Immunofluorescence analysis using Mouse Anti-HSP70 Monoclonal Antibody, Clone 3A3 (ASM10095). Tissue: Cervical Cancer cell line (HeLa). Species: Human. Fixation: 4% Formaldehyde for 15 min at RT. Primary Antibody: Mouse Anti-HSP70 Monoclonal Antibody (ASM10095) 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.



Western Blot analysis of Artemia franciscanna (brine shrimp) cell lysates showing detection of Hsp70 protein using Mouse Anti-Hsp70 Monoclonal Antibody, Clone 3A3 (ASM10095). Primary Antibody: Mouse Anti-Hsp70 Monoclonal Antibody (ASM10095) at 1:1000. Courtesy of: Alison King.

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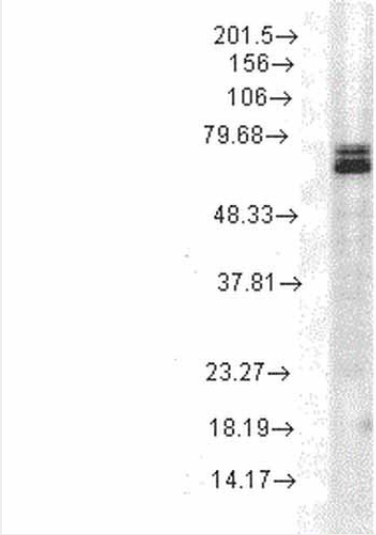

Western Blot analysis of Rat cell lysates showing detection of Hsp70 protein using Mouse Anti-Hsp70 Monoclonal Antibody, Clone 3A3 (ASM10095). Load: 15 µg. Block: 1.5% BSA for 30 minutes at RT. Primary Antibody: Mouse Anti-Hsp70 Monoclonal Antibody (ASM10095) at 1:1000 for 2 hours at RT. Secondary Antibody: Sheep Anti-Mouse IgG: HRP for 1 hour at RT.

HSP70 Antibody - 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 (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.

HSP70 Antibody - References

1. Balashova N. et al. (2005) J Biol Chem 280:2186-96.
2. Boorstein W. R., Ziegelhoffer T. & Craig E. A. (1993) J. Mol. Evol.38 (1): 1-17.
3. Rothman J. (1989) Cell 59: 591 -601.
4. DeLuca-Flaherty et al. (1990) Cell 62: 875-887.
5. Bork P., Sander C. & Valencia A. (1992) Proc. Nat Acad. Sci. USA 89: 7290-7294.
6. Fink A.L. (1999) Physiol. Rev. 79: 425-449.