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Zuschläge

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- Trockeneiszuschlag
- Gefahrgutzuschlag
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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

linkedin.com/company/szaboscandic

Anti-HSP70/HSC70 Antibody [N27F3-4]

Mouse Anti-Human HSP70/HSC70 Monoclonal IgG
Catalog No. SMC-104

StressMarq Biosciences INC.
Discovery through partnership | Excellence through quality

Overview

Product Name

HSP70/HSC70 Antibody

Description

Mouse Anti-Human HSP70/HSC70 Monoclonal IgG

Species Reactivity

Dog, Human, Monkey, Mouse, Rat, African clawed frog (Xenopus laevis), Beluga, Bovine, Chicken, Cucumber, Fish, Fruit Fly (Drosophila melanogaster), Guinea Pig (Cavia porcellus), Hamster, Nematode (Caenorhabditis elegans), Pea (Pisum sativum), Pig, Plant, Rabbit, Sheep

Applications

WB, IHC, ICC/IF, IP, FCM, IEM

Antibody Dilution

WB (1:1000), IHC (1:100), ICC/IF (1:50); optimal dilutions for assays should be determined by the user.

Host Species

Mouse

Immunogen Species

Human

Immunogen

Recombinant HSP70/HSC70

Concentration

1 mg/ml

Conjugates

Alkaline Phosphatase, APC, ATTO 390, ATTO 488, ATTO 565, ATTO 594, ATTO 633, ATTO 655, ATTO 680, ATTO 700, Biotin, FITC, HRP, PE/ATTO 594, PerCP, RPE, Streptavidin, Unconjugated

Properties

Storage Buffer

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

Storage Temperature

-20ºC

Shipping Temperature

Blue Ice or 4ºC

Purification

Protein G Purified

Clonality

Monoclonal

Clone Number

N27F3-4

Isotype

IgG

Specificity

Detects ~72 (Hsp) and ~73kDa (Hsc).

Cite This Product

Mouse Anti-Human HSP70/HSC70 Monoclonal, Clone N27F3-4 (StressMarq Biosciences Inc., Victoria BC CANADA, Catalog # SMC-104)

Certificate Of Analysis

1 µg/ml of SMC-104 was sufficient for detection of HSP70/HSC70 in 20 µg of heat shocked HeLa cell lysate by colorimetric immunoblot analysis using Goat anti-mouse IgG:HRP as the secondary antibody.

Biological Description

Alternative Names

HSP70 1 Antibody, HSP70 2 Antibody, HSP70.1 Antibody, HSP72 Antibody, HSPA1 Antibody, HSPA1A Antibody, HSPA1B Antibody

Research Areas

Cancer, Heat Shock

Cellular Localization

Cytoplasm

Accession Number

NP_005336.3

Gene ID

3303

Swiss Prot

P08107

Scientific 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 5O% 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. Looking for more information on HSP70? Visit our new HSP70 Scientific Resource Guide at http://www.HSP70.com.

References

1. Welch W.J. and Suhan J.P. (1986) J.Cell Biol. 103: 2035-2050.
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. Nut1 Acad. Sci. USA 89: 7290-7294.
6. Fink A.L. (1999) Physiol. Rev. 79: 425-449.
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8. Schnell D.J. et. al. (1994) Science 266: 1007-1012.
9. Kabakov A.E., et. al. (2002) Am. J.Physiol. 283(2): C521-C534.
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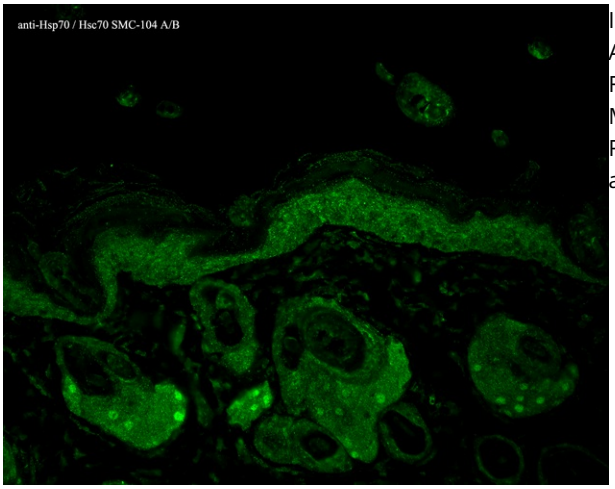
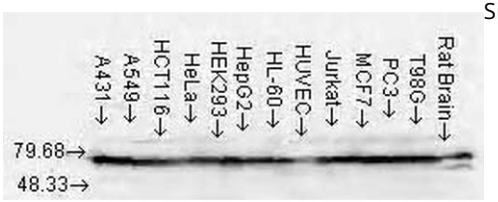
Product Images



Immunohistochemistry analysis using Mouse Anti-Hsp70 Monoclonal Antibody, Clone N27 (SMC-104). Tissue: backskin. Species: Mouse. Fixation: Bouin's Fixative and paraffin-embedded. Primary Antibody: Mouse Anti-Hsp70 Monoclonal Antibody (SMC-104) at 1:100 for 1 hour at RT. Secondary Antibody: FITC Goat Anti-Mouse (green) at 1:50 for 1 hour at RT. Localization: Epidermis.



Western Blot analysis of Human Cell lysates showing detection of Hsp70 protein using Mouse Anti-Hsp70 Monoclonal Antibody, Clone N27 (SMC-104). Load: 15 µg protein. Block: 1.5% BSA for 30 minutes at RT. Primary Antibody: Mouse Anti-Hsp70 Monoclonal Antibody (SMC-104) at 1:1000 for 2 hours at RT. Secondary Antibody: Sheep Anti-Mouse IgG: HRP for 1 hour at RT.

Product Citations (8)

Western Blot

Detection of constitutive and inducible HSP70 proteins in formalin fixed human brain tissue.

Preusse-Prange, A., Modrow, J.H., Schwark, T., von Wurmb-Schwark, N. (2014) Forensic Sci Int. 235:62-7.

PubMed ID: 24447452 **Reactivity:** Human **Applications:** Western Blot

Highly reliable quantification of proteins such as members of the HSP70 superfamily based on the grey scale index via immune detection stained bands on a Western blot.

Modrow, J. et al. (2012) Forensic Sci Int. 222 (1): 256-258.

PubMed ID: 22831866 **Reactivity:** Human **Applications:** Western Blot

Characterization of the interaction of Aha1 with components of the Hsp90 chaperone machine and client proteins.

Sun, L., Prince, T., Manjarrez, J.R., Scroggins, B.T., and Matts, R.L. (2012) Biochim Biophys Acta. 1823 (6): 1092-1101.

PubMed ID: 22504172 **Reactivity:** Human **Applications:** Western Blot

A Novel Neurotrophic Drug for Cognitive Enhancement and Alzheimer's Disease.

Chen, Q. et al. (2011) PLoS One. 6 (12): e27865.

PubMed ID: 22194796 **Reactivity:** Rat **Applications:** Western Blot

Ultrasound-induced activation of Wnt signaling in human MG-63 osteoblastic cells.

Olkku, A., Leskinen, J.J., Lammi, M.J., Hynynen, K., Mahonen, A. (2010) Bone. 47 (2): 320-330.

PubMed ID: 20435172 **Reactivity:** Human **Applications:** Western Blot

Immunohistochemistry

Detection of constitutive and inducible HSP70 proteins in formalin fixed human brain tissue.

Preusse-Prange, A., Modrow, J.H., Schwark, T., von Wurmb-Schwark, N. (2014) Forensic Sci Int. 235:62-7.

PubMed ID: 24447452 **Reactivity:** Human **Applications:** Immunohistochemistry

How one TSH receptor antibody induces thyrocyte proliferation while another induces apoptosis.

Morshed, S.A, Ma, R., Latif, R. and Davies, T.F. (2013) J.Autoimmunity. 47:17-24.

PubMed ID: 23958398 **Reactivity:** Rat **Applications:** Immunohistochemistry

Immunocytochemistry/Immunofluorescence

Theilers murine encephalomyelitis virus infection induces a redistribution of heat shock proteins 70 and 90 in BHK-21 cells, and is inhibited by novobiocin and geldanamycin.

Mutsvunguma, L.Z. et al. (2011) Cell Stress Chaperones. 16 (5): 505-515.dx.

PubMed ID: 21445704 **Reactivity:** Hamster **Applications:** Immunocytochemistry/Immunofluorescence

Reviews

Based on validation through cited publications.

★★★★★

StressMarq Biosciences
June 14, 2016: