

Datasheet for ABIN6656050  
**anti-HSP70 1A antibody (AA 436-503)**



[Go to Product page](#)

2 Images

3 Publications

## Overview

Quantity:	200 µg
Target:	HSP70 1A (HSPA1A)
Binding Specificity:	AA 436-503
Reactivity:	Human
Host:	Mouse
Clonality:	Monoclonal
Conjugate:	This HSP70 1A antibody is un-conjugated
Application:	Western Blotting (WB), Immunohistochemistry (IHC), ELISA, Flow Cytometry (FACS), Fluorescence Microscopy (FM)

## Product Details

Purpose:	Hsp70 Antibody
Immunogen:	Hsp70 monoclonal antibody was prepared using conventional hybridoma technology after repeated immunizations with a synthetic peptide from the region of amino acid residues 436-503 of human Hsp70 protein.
Clone:	C92F3A-5
Isotype:	IgG1
Cross-Reactivity (Details):	A BLAST analysis was used to suggest cross-reactivity with Hsp70 from human, bovine, mouse, rat, C.
Purification:	This Protein G purified monoclonal antibody reacts with human and mouse Hsp70 protein.

## Product Details

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Sterility: Sterile filtered

## Target Details

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Target: HSP70 1A (HSPA1A)

Alternative Name: HSPA1A ([HSPA1A Products](#))

Background: Synonyms: Heat shock 70 kDa protein 1 antibody, heat shock 70 kDa protein 1A antibody, Heat shock 70 kDa protein 1B antibody, Heat shock induced protein antibody, heat shock protein 70 antibody, HSP70 1 antibody

Background: Anti-Hsp 70 antibody is routinely used in cancer and signal transduction research. Hsp70 genes encode abundant heat-inducible 70- kDa hsps (hsp70s). In most eukaryotes, hsp70 genes exist as part of a multigene family. Hsp70s 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 (2). The N-terminal two-thirds of hsp70s are more conserved than the C-terminal one-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.

Gene Name: HSPA1A

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Gene ID: 3304

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NCBI Accession: [NP\\_005336](#)

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UniProt: [P0DMV8](#)

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Pathways: [Regulation of Leukocyte Mediated Immunity](#), [Positive Regulation of Immune Effector Process](#)

## Application Details

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Application Notes: Immunohistochemistry\_Dilution: 10 µg/mL  
IF\_Microscopy\_Dilution: 1:200-1:1000  
Western\_Blot\_Dilution: 1:500-1:2000  
Other: User Optimized

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Comment: Suggested Applications: Other  
This Protein G purified antibody has been tested for use in ELISA, immunofluorescence microscopy, western blotting, FACS, immunoelectron microscopy, immunohistochemistry and immunoprecipitation. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 70 kDa in size corresponding to Hsp70 by western blotting in the appropriate cell lysate or extract. In general, a 1:1,000 dilution is suggested for most applications and is suitable to detect Hsp70 in 20 µg of heat shocked HeLa cell lysate by western blotting.

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Restrictions: For Research Use only

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## Handling

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Format: Liquid

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Buffer: Buffer: 0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2  
Stabilizer: 50 % (v/v) Glycerol  
Preservative: 0.1 % (w/v) Sodium Azide

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Preservative: Sodium azide

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Precaution of Use: This product contains Sodium azide: a POISONOUS AND HAZARDOUS SUBSTANCE which should be handled by trained staff only.

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Storage: 4 °C,-20 °C

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Storage Comment: Hsp70 antibody is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use. For extended storage aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing.

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Expiry Date: 12 months

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## Publications

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Product cited in: Satoh, Stalder, McKercher, Williamson, Roth, Lipton: "Nrf2 and HSF-1 Pathway Activation via Hydroquinone-Based Proelectrophilic Small Molecules is Regulated by Electrochemical Oxidation Potential." in: **ASN neuro**, Vol. 7, Issue 4, (2016) ([PubMed](#)).

Ristic, Tsou, Guzi, Kanack, Scaglione, Todi: "USP5 Is Dispensable for Monoubiquitin Maintenance in *Drosophila*." in: **The Journal of biological chemistry**, Vol. 291, Issue 17, pp. 9161-72, (2016) ([PubMed](#)).

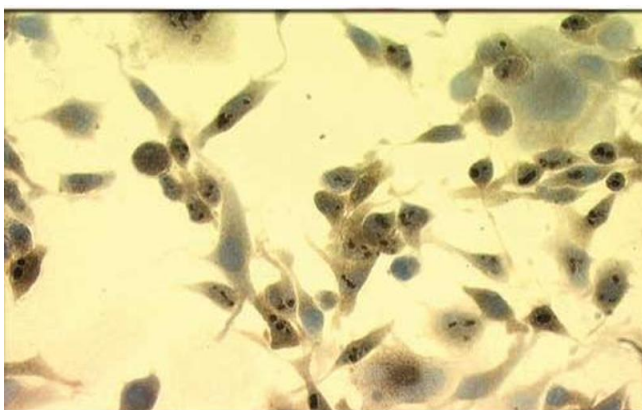
Satoh, Rezaie, Seki, Sunico, Tabuchi, Kitagawa, Yanagitai, Senzaki, Kosegawa, Taira, McKercher, Hoffman, Roth, Lipton: "Dual neuroprotective pathways of a pro-electrophilic compound via HSF-1-activated heat-shock proteins and Nrf2-activated phase 2 antioxidant response enzymes." in: **Journal of neurochemistry**, Vol. 119, Issue 3, pp. 569-78, (2011) ([PubMed](#)).

## Images



### Western Blotting

**Image 1.** Anti-Hsp70 Antibody - Western Blot. Western blot using Protein G purified anti-Hsp70 antibody shows detection of Hsp70 in whole cell lysates from heat shocked HeLa cells. The band marked by the arrowhead corresponds to Hsp70 at an approximate molecular weight of 70 kDa. The primary antibody was used at a 1:1000 dilution.



### Immunohistochemistry

**Image 2.** Hsp70 Mouse Melanoma Cells Immunohistochemistry of Mouse anti-Hsp70 monoclonal antibody. Tissue: Heat-shocked mouse melanoma. Fixation: formalin fixed paraffin embedded. Antigen retrieval: not required. Primary antibody: Hsp70 monoclonal antibody at 10 µg/mL for 1 h at RT. Secondary antibody: Peroxidase mouse secondary antibody at 1:10,000 for 45 min at RT. Staining: Hsp70 monoclonal as precipitated red signal with hematoxylin purple nuclear counterstain.