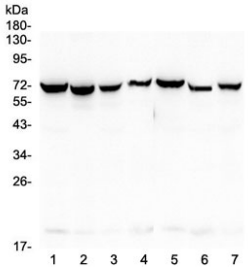
HSP70 Antibody / HSPA1A HSPA1B Antibody [clone 3H5] (RQ4486)

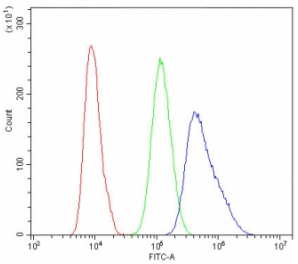
Catalog No.	Formulation	Size
RQ4486	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

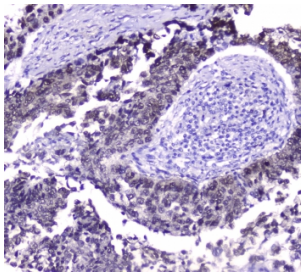
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1
Clone Name	3H5
Purity	Protein G affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose and 0.025% sodium azide
UniProt	P0DMV8
Localization	Cytoplasm
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 1-2ug/ml Flow Cytometry: 1-3ug/10^6 cells Immunofluorescence: 2-4ug/ml
Limitations	This HSP70 Antibody / HSPA1A HSPA1B Antibody is available for research use only.



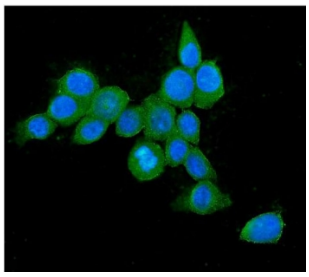
HSP70 Antibody 3H5 Detection in Human Cancer Cell Lines WB. Western blot testing of human HeLa (lane 1), COLO-320 (lane 2), SW620 (lane 3), A431 (lane 4), A549 (lane 5), HepG2 (lane 6) and PANC-1 (lane 7) cell lysates with HSP70 Antibody clone 3H5 at 0.5 ug/ml shows strong bands at approximately 70 kDa across all samples, consistent with the expected molecular weight of HSPA1A/HSPA1B.



HSP70 Antibody 3H5 Detection in U-2 OS Osteosarcoma Cells FACS. Flow cytometry testing of human U-2 OS osteosarcoma cells with HSP70 Antibody clone 3H5 at 1 ug/million cells following goat serum blocking. The antibody-stained population (blue) shows a pronounced rightward fluorescence shift relative to the isotype control (green) and cells-alone control (red), demonstrating strong detection of HSPA1A/HSPA1B.



HSP70 Antibody 3H5 Staining of Human Lung Cancer IHC. Immunohistochemistry testing of FFPE human lung cancer tissue with HSP70 Antibody clone 3H5 at 2 ug/ml shows brown immunoreactivity within tumor cells, with predominantly cytoplasmic staining. HIER was performed by boiling tissue sections in pH 6, 10 mM citrate buffer for 10-20 min followed by cooling at room temperature for 20 min.



HSP70 Antibody 3H5 Staining of MCF7 Breast Cancer Cells IF. Immunofluorescence staining of FFPE human MCF7 breast cancer cells with HSP70 Antibody clone 3H5 shows green signal predominantly within the cytoplasm, surrounding the blue DAPI-stained nuclei. HIER was performed by steaming in pH 6 citrate buffer for 20 min before antibody testing.

Description

HSP70 Antibody / HSPA1A HSPA1B Antibody recognizes the closely related stress-inducible heat shock proteins encoded by HSPA1A and HSPA1B. These members of the HSP70 family are molecular chaperones that help maintain cellular proteostasis by binding exposed hydrophobic regions of unfolded or misfolded proteins. Their expression increases substantially following heat shock and other forms of cellular stress, providing an adaptive mechanism that limits protein aggregation and promotes recovery of damaged proteins.

HSPA1A and HSPA1B encode proteins with extremely high sequence similarity and are commonly considered together as major inducible forms of HSP70. Their chaperone activity is controlled through an ATP-dependent cycle. The N-terminal nucleotide-binding domain binds and hydrolyzes ATP, while the C-terminal substrate-binding domain interacts with client proteins. Co-chaperones regulate this cycle and influence substrate selection, folding and release, allowing HSP70 proteins to participate in multiple aspects of protein quality control.

Beyond the response to acute heat stress, inducible HSP70 proteins are involved in recovery from oxidative, metabolic and proteotoxic stress. They cooperate with other molecular chaperones and protein quality-control systems to assist protein folding, prevent inappropriate aggregation and determine whether damaged proteins can be refolded or require degradation. HSP70 activity therefore contributes to maintenance of cellular homeostasis under both normal and stressful conditions.

HSPA1A and HSPA1B have also been extensively investigated in cancer and cell survival research. Increased HSP70 expression can accompany the elevated proteotoxic stress experienced by tumor cells, while its chaperone functions can support proteins involved in proliferation and survival. Inducible HSP70 biology is consequently relevant to studies of stress adaptation, apoptosis, protein homeostasis and mechanisms that allow cells to tolerate adverse conditions.

Clone 3H5 is a mouse monoclonal antibody generated against a peptide sequence common to human HSPA1A and HSPA1B. NSJ Bioreagents offers this HSP70 Antibody for research requiring recognition of these closely related

inducible HSP70 proteins. An HSPA1A HSPA1B Antibody provides a useful reagent for investigating inducible HSP70 expression, molecular chaperone activity and cellular stress responses.

Researchers studying HSP70 expression, proteotoxic stress and cancer-associated stress responses can explore related targets on our Cancer Marker Antibodies page.

Application Notes

Optimal dilution of the HSP70 Antibody / HSPA1A HSPA1B Antibody should be determined by the researcher.

Immunogen

Amino acids KGKISEADKKKVLDKCQEVISWLDANTLAEKDEFEHKR were used as the immunogen for the HSP70 antibody. This sequence is common to HSPA1A and HSPA1B.

Storage

After reconstitution, the HSP70 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

HSPA1A antibody, HSPA1B antibody, Heat shock 70 kDa protein 1A antibody, Heat shock 70 kDa protein 1B antibody, HSP72 antibody, HSP70-1 antibody

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