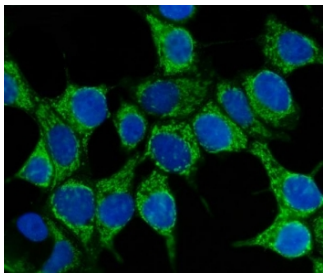
HSPA1 Antibody / Heat Shock Protein 70 Antibody (R31931)

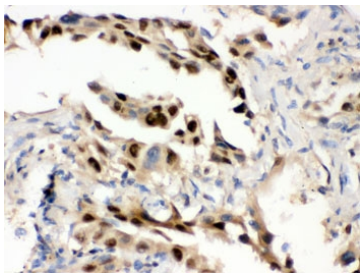
Catalog No.	Formulation	Size
R31931	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

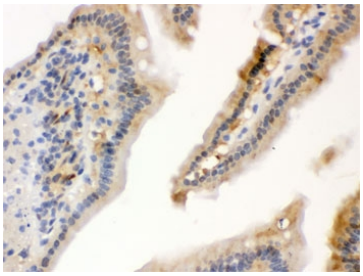
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2.5% BSA and 0.025% sodium azide
UniProt	P0DMV8
Localization	Nuclear, cytoplasmic
Applications	Western blot: 0.1-0.5ug/ml Immunohistochemistry (FFPE): 0.5-1ug/ml Immunofluorescence: 5ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This HSPA1 Antibody / Heat Shock Protein 70 Antibody is available for research use only.



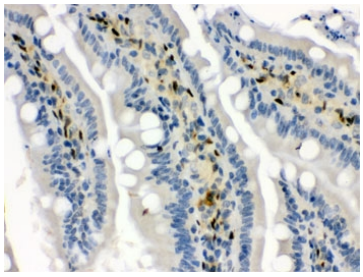
HSPA1 Antibody Staining of MCF7 Breast Cancer Cells IF. Immunofluorescence staining of FFPE human MCF7 breast cancer cells with HSPA1 Antibody shows strong green HSP70 signal predominantly in the cytoplasm surrounding the blue DAPI-stained nuclei. HIER was performed by steaming in pH 6 citrate buffer for 20 min before antibody testing.



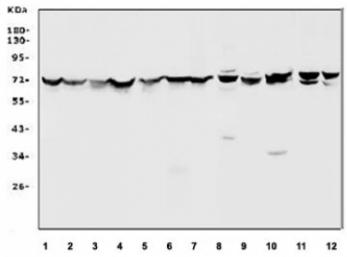
HSPA1 Antibody Staining of Human Lung Cancer IHC. Immunohistochemistry testing of FFPE human lung cancer tissue with HSPA1 Antibody shows heterogeneous brown immunoreactivity in tumor cells, with both cytoplasmic and nuclear staining visible. HIER was performed by boiling tissue sections in pH 6, 10 mM citrate buffer for 20 min followed by cooling before antibody testing.



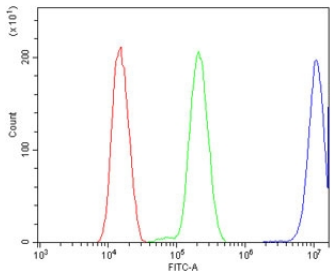
HSPA1 Antibody Staining of Mouse Intestine IHC. Immunohistochemistry testing of FFPE mouse intestine with HSPA1 Antibody shows brown immunoreactivity within the intestinal epithelium, with prominent staining along the villi. HIER was performed by boiling tissue sections in pH 6, 10 mM citrate buffer for 20 min followed by cooling before antibody testing.



Heat Shock Protein 70 Antibody Staining of Rat Intestine IHC. Immunohistochemistry testing of FFPE rat intestine with Heat Shock Protein 70 Antibody shows brown staining within the intestinal epithelium, including prominent immunoreactivity in cells along the villi. HIER was performed by boiling tissue sections in pH 6, 10 mM citrate buffer for 20 min followed by cooling before antibody testing.



HSPA1 Antibody Detection in Human, Rat and Mouse Samples WB. Western blot testing of human HeLa (lane 1), A549 (lane 2), HepG2 (lane 3), Caco-2 (lane 4), SW620 (lane 5), PANC-1 (lane 6) and Raji (lane 7), rat brain (lane 8) and kidney (lane 9), and mouse kidney (lane 10), NIH 3T3 (lane 11) and RAW264.7 (lane 12) lysates with HSPA1 Antibody shows prominent bands at approximately 70 kDa across all samples, consistent with the expected molecular weight of HSPA1A/HSPA1B.



HSPA1 Antibody Detection in HeLa Cervical Cancer Cells FACS. Flow cytometry testing of human HeLa cervical cancer cells with HSPA1 Antibody 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.

Description

HSPA1 Antibody / Heat Shock Protein 70 Antibody recognizes the highly homologous stress-inducible proteins HSPA1A and HSPA1B, major members of the HSP70 molecular chaperone family. These proteins are rapidly induced in response to heat shock and other cellular stresses and help preserve proteome integrity by interacting with unfolded or misfolded proteins. Their chaperone activity can prevent inappropriate protein aggregation and facilitate recovery of proteins capable of returning to a functional conformation.

HSPA1A and HSPA1B are closely related proteins with extensive sequence identity and largely overlapping molecular functions. HSP70 chaperone activity depends on coordinated action of an N-terminal nucleotide-binding domain and a C-

terminal substrate-binding domain. ATP binding and hydrolysis regulate conformational changes that control association with client proteins, while co-chaperones influence substrate recognition and progression through the chaperone cycle.

Expression of inducible HSP70 can rise markedly following proteotoxic stress, oxidative stress, elevated temperature and other conditions that disrupt protein homeostasis. HSPA1 proteins cooperate with additional chaperones and protein quality-control mechanisms to limit accumulation of damaged proteins. Through these functions, they contribute to cellular recovery following stress and influence the balance between protein refolding, sequestration and degradation.

Inducible HSP70 proteins have also received substantial attention in cancer research. Tumor cells frequently experience metabolic, oxidative and proteotoxic stresses that increase their dependence on mechanisms maintaining protein stability. Elevated HSP70 expression has consequently been investigated in relation to tumor cell survival, apoptosis resistance and adaptation to stressful microenvironments. These properties make HSPA1 Antibody research relevant to studies connecting molecular chaperones with cancer-associated stress responses and cellular proteostasis.

NSJ Bioreagents offers this rabbit polyclonal HSPA1 Antibody generated against a peptide sequence shared by human HSPA1A and HSPA1B. Because the disclosed immunogen is common to both proteins, this reagent is appropriately considered an HSPA1A/HSPA1B-reactive antibody rather than an HSPA1A-specific reagent. A Heat Shock Protein 70 Antibody provides a research tool for investigating inducible HSP70 expression, molecular chaperone biology and cellular responses to proteotoxic stress.

For a monoclonal antibody recognizing the closely related HSPA1A and HSPA1B proteins, see our HSP70 Antibody / HSPA1A HSPA1B Antibody page.

Application Notes

Optimal dilution of the HSPA1 Antibody / Heat Shock Protein 70 Antibody should be determined by the researcher.

Immunogen

Amino acids KGKISEADKKKVLDKCQEVISWLDANTLAEKDEFEHKR of human HSPA1A/HSPA1B were used as the immunogen for the HSP70 antibody.

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, HSP70 antibody, Heat shock protein 70 antibody, HSP72 antibody, HSP70-1 antibody

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