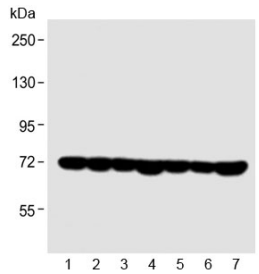
HSP70-1 Antibody / Heat Shock 70 kDa Protein 1 Antibody (F54222)

Catalog No.	Formulation	Size
F54222-0.2ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.2 ml
F54222-0.05ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.05 ml

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 Ig
Purity	Antigen affinity
UniProt	P0DMV8
Localization	Nuclear, cytoplasmic
Applications	Western Blot : 1:1000
Limitations	This HSP70-1 Antibody / Heat Shock 70 kDa Protein 1 Antibody is available for research use only.



HSP70-1 Antibody Detection in Human, Mouse and Rat Samples WB. Western blot testing of human Jurkat (lane 1), HeLa (lane 2), 293 (lane 3) and MCF7 (lane 4), mouse C2C12 (lane 5) and NIH 3T3 (lane 6), and rat C6 (lane 7) lysates with HSP70-1 Antibody shows a strong, discrete band at approximately 70 kDa in all seven samples, consistent with the expected molecular weight of HSPA1A/HSPA1B. The blot demonstrates clean detection of inducible HSP70 across human, mouse and rat samples.

Description

HSP70-1 Antibody / Heat Shock 70 kDa Protein 1 Antibody recognizes the closely related inducible molecular chaperones HSPA1A and HSPA1B. These proteins are major members of the HSP70 family and participate in maintaining protein homeostasis during normal cellular activity and periods of environmental or physiological stress. Their expression can increase substantially following heat shock and other conditions that disrupt protein folding, providing

additional chaperone capacity when damaged or unfolded proteins accumulate.

HSPA1A and HSPA1B are highly homologous proteins with largely overlapping molecular functions. Like other HSP70 chaperones, they contain an N-terminal nucleotide-binding domain and a C-terminal substrate-binding domain. ATP binding and hydrolysis regulate conformational changes that control interactions with client proteins, while co-chaperones influence substrate selection and progression through the chaperone cycle. Through this coordinated system, inducible HSP70 proteins can stabilize non-native proteins, limit aggregation and facilitate productive refolding.

HSP70-1 proteins are important components of the cellular response to proteotoxic, oxidative and metabolic stress. Their increased expression helps cells manage proteins whose structures have been disrupted by adverse conditions. HSPA1A and HSPA1B also cooperate with other protein quality-control mechanisms to determine whether damaged proteins can be restored or should instead be directed toward degradation.

Inducible HSP70 activity has been extensively investigated in cancer biology because tumor cells frequently experience conditions that place substantial demands on protein quality-control systems. Increased HSP70 expression can contribute to cellular stress tolerance and has been studied in connection with proliferation, survival and regulation of apoptosis. The HSPA1 proteins are therefore relevant to research examining how cells maintain proteostasis and adapt to challenging microenvironments.

NSJ Bioreagents offers this rabbit polyclonal HSP70-1 Antibody generated against an amino acid sequence surrounding Y41 of human HSPA1A/HSPA1B. Because the immunogen corresponds to both closely related proteins, this reagent is appropriately considered an HSPA1A/HSPA1B-reactive antibody rather than an isoform-specific antibody. A Heat Shock 70 kDa Protein 1 Antibody provides a research tool for investigating inducible HSP70 expression, molecular chaperone biology and cellular stress responses.

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 HSP70-1 Antibody / Heat Shock 70 kDa Protein 1 Antibody should be determined by the researcher.

Immunogen

An amino acid sequence surrounding Y41 of human HSPA1A/B was used as the immunogen for the HSP70-1 antibody.

Storage

Aliquot the HSP70-1 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

HSPA1A antibody, HSPA1B antibody, HSPA1 antibody, HSP70 antibody, HSP72 antibody, Inducible HSP70 antibody

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