HSC70/HSP70 monoclonal antibody (N27F3-4)

The Hsp70 family of heat shock protiens contains multiple homologs ranging in size from 66-78 kDa, and are the eukaryotic equivalents of the bacterial DnaK. The most studied Hsp70 members include the cytosolic stress-induced Hsp70 (Hsp72), the constitutive cytosolic Hsc70 (Hsp73), and the ER-localized BiP (Grp78). Hsp70 family members contain highly conserved N-terminal ATP-ase and C-terminal protein binding domains. Binding of peptide to Hsp70 is assisted by Hsp40, and stimulates the inherent ATPase activity of Hsp70, facilitating ATP hydrolysis and enhanced peptide binding. Hsp70 nucleotide exchange and substrate binding coordinates the folding of newly synthesized proteins, the re-folding of misfolded or denatured proteins, coordinates trafficking of proteins across cellular membranes, inhibits protein aggregation, and targets the degradation of proteins via the proteasomal pathway.

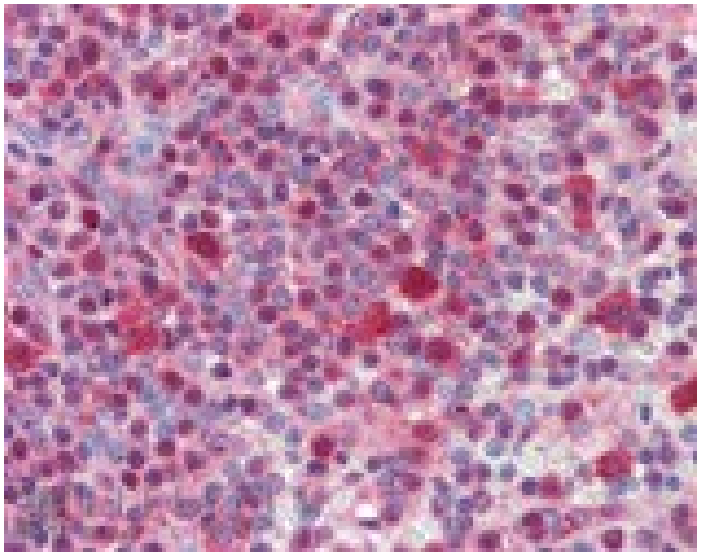
This antibody is covered by our Worry-Free Guarantee.

Citations: 70 View Online »

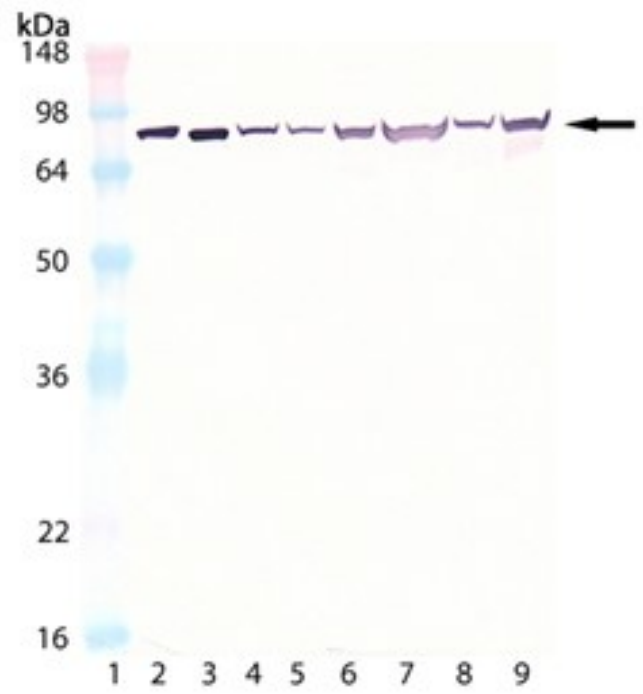
Ordering Information Order Online »

ADI-SPA-820-D	50µg
ADI-SPA-820-F	200µg

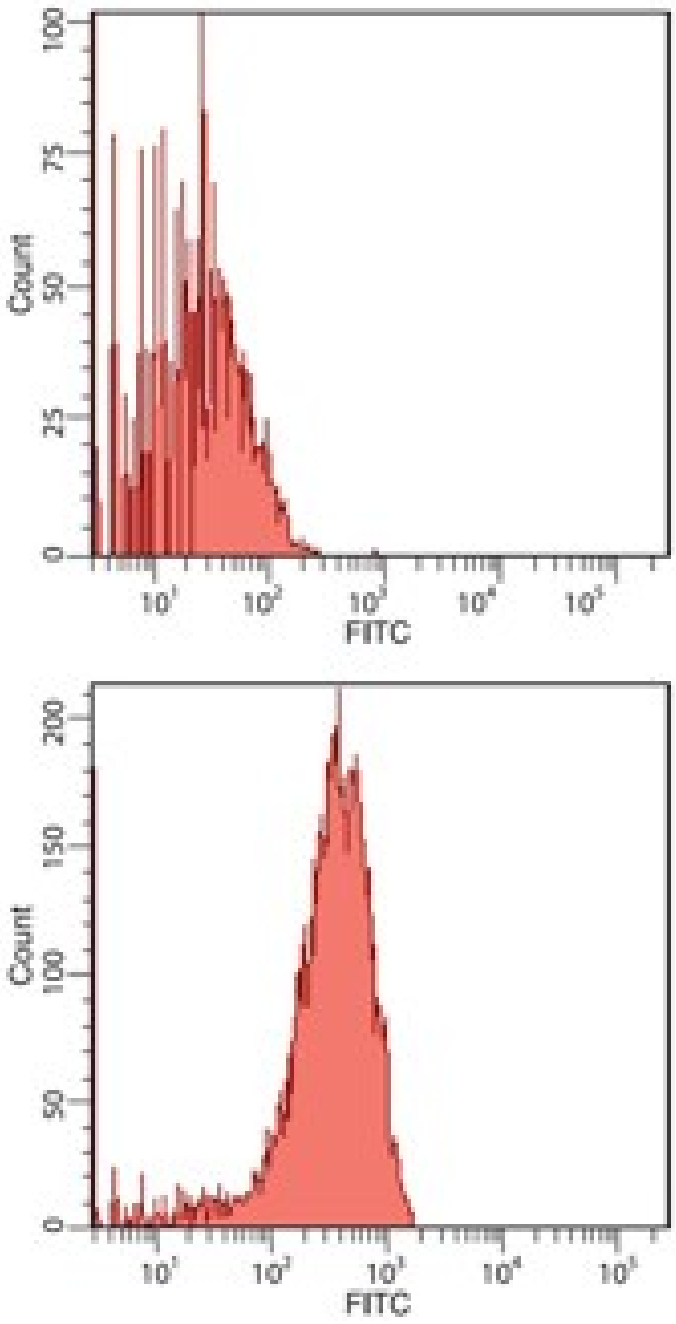
Manuals, SDS & CofA View Online »



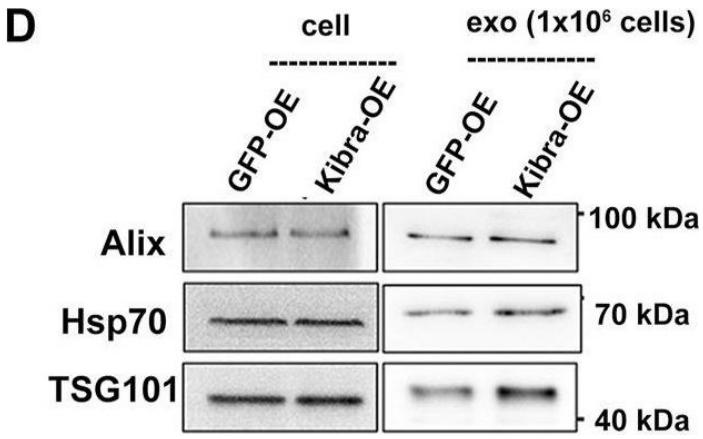
Immunohistochemistry analysis of human spleen tissue stained with HSC70/HSP70, mAb (N27F3-4) at 10µg/ml.



Western blot analysis of HSC70/HSP70, mAb (N27F3-4) (Prod. No. ADI-SPA-820):
Lane 1: MW marker,
Lane 2: HSC70/HSP73 (bovine), (recombinant) (Prod. No. ADI-SPP-751),
Lane 3: HSP70/HSP72 (human), (recombinant) (Prod. No. ADI-NSP-555),
Lane 4: 3T3,
Lane 5: 3T3 (heat shocked),
Lane 6: HeLa,
Lane 7: HeLa (heat shocked),
Lane 8: PC-12,
Lane 9: PC-12 (heat shocked).

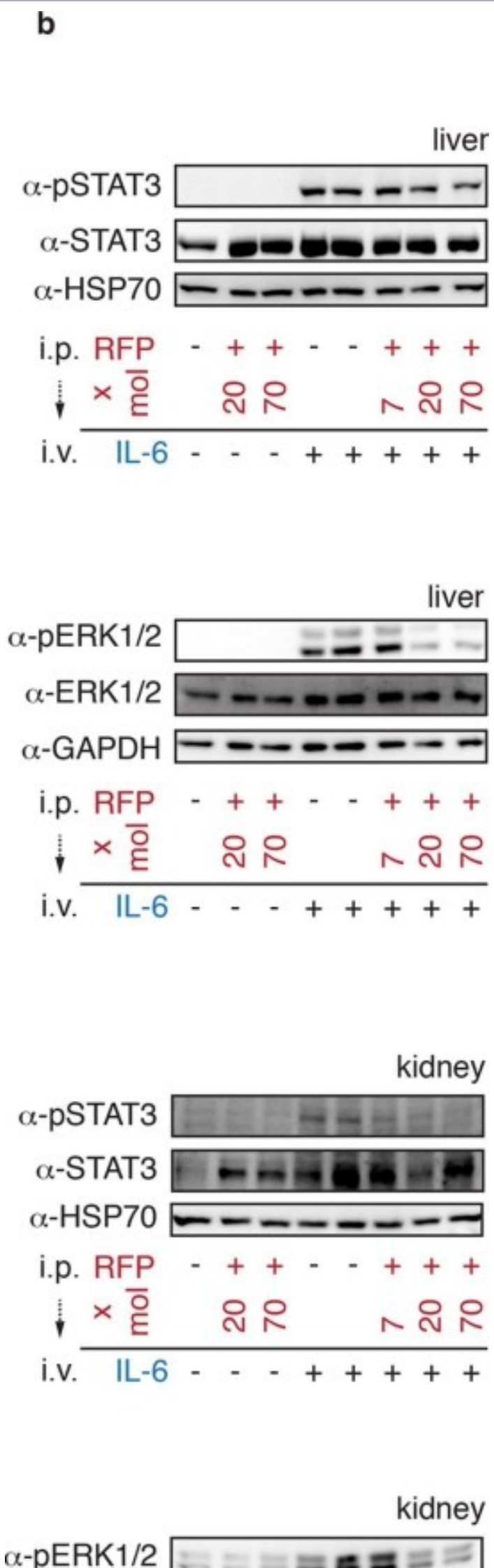


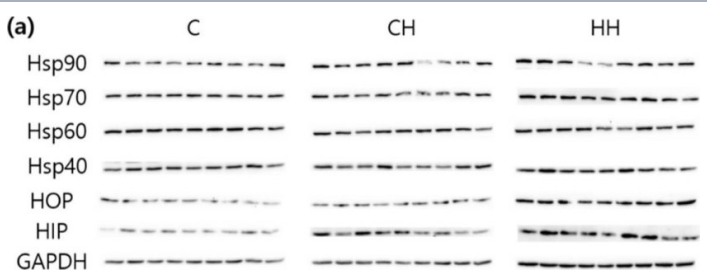
Flow cytometry analysis of human colon cancer Caco2 cells analyzed by flow cytometry using isotype control.



Kibra positively regulates secretion of sEV in muscle cells(A). Over-expression of Kibra-GFP in proliferating MB detected by immunoblotting with anti-GFP. (B). Increased protein in sEV fraction collected from equal numbers of myoblasts over-expressing Kibra-GFP or control GFP alone (n = 3). (C). Increased secretion of sEV particles/mL in Kibra-OE condition (NTA analysis). (D). Western blot analysis of secreted sEV harvested from equal numbers of Kibra-expressing (Kibra-OE) or GFP expressing (GFP-OE) cells. Total cell lysate [cell, (1 × 106)] and exosome fraction [Exo, (1 × 106)] were blotted for exosome markers Alix and Tsg101, with HSP70 as a loading control (E). Quantification of sEV proteins obtained from Kibra-OE normalized against GFP-OE cells (n = 3). (F). Decreased total Kibra protein in cell lysates collected from equal numbers of myoblasts expressing shRNA (1 and2) for Kibra (n = 3). (G). Quantification of data in (F). (H). Decreased secretion of sEV particles from equal numbers of cells expressing Kibra-shRNA1 and two compared to con-shRNA (NTA analysis). (I). Immunoblot analysis of total cell protein vs. sEV fraction from equal numbers of cells expressing con-shRNA and Kibra-shRNA one and 2. (J). Quantification of exosome markers in sEV fraction from Kibra-shRNA1 and 2 cells normalized against con-shRNA cells (n = 3). All quantification results show the mean ± SE, *p ≤ 0.05, **p ≤ 0.005, ***p ≤ 0.0005 as determined by Student's t-test.

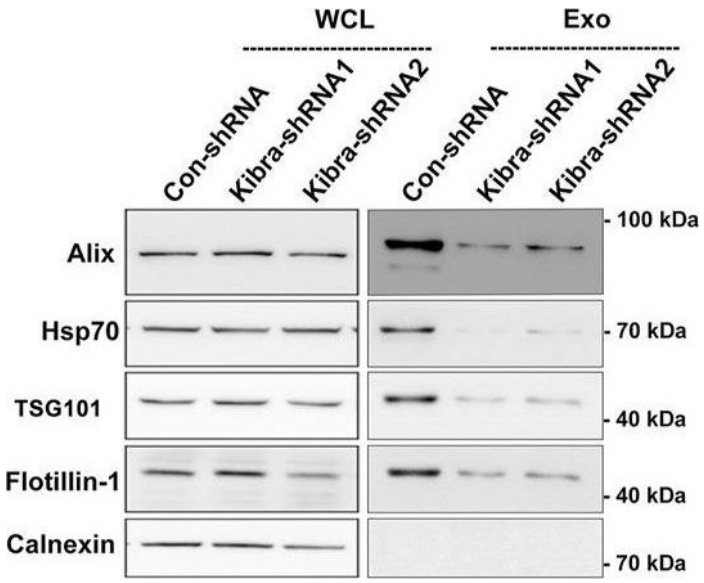
Image collected and cropped by CiteAb under a CC-BY license from the following publication: Enhanced secretion of promyogenic exosomes by quiescent muscle cells. *Front Cell Dev Biol* (2024)





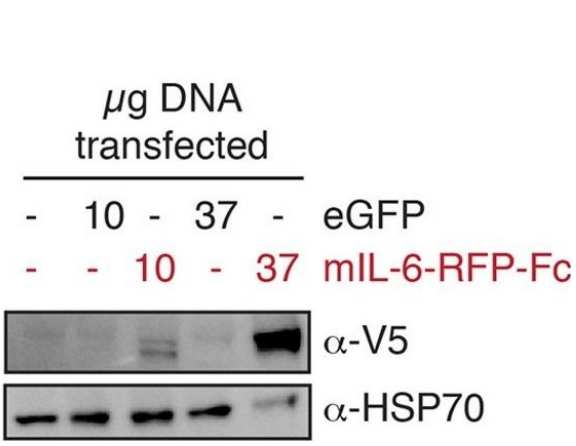
HSPs (heat shock proteins), HOP (hsp70-hsp90 organizing protein), and HIP (hsp70 interacting protein) protein expressions of liver tissue. (a) Bands, each line represents a repetition of each birds; (b) protein expressions level calculated by GAPDH. C, control; CH, chronic heat-stressed broiler; HH, early and chronic heat-stressed broiler. a,b Different superscript letters are significantly different ($p < 0.05$).

Image collected and cropped by CiteAb under a CC-BY license from the following publication: Heat Treatment at an Early Age Has Effects on the Resistance to Chronic Heat Stress on Broilers. *Animals (Basel)* (2019)



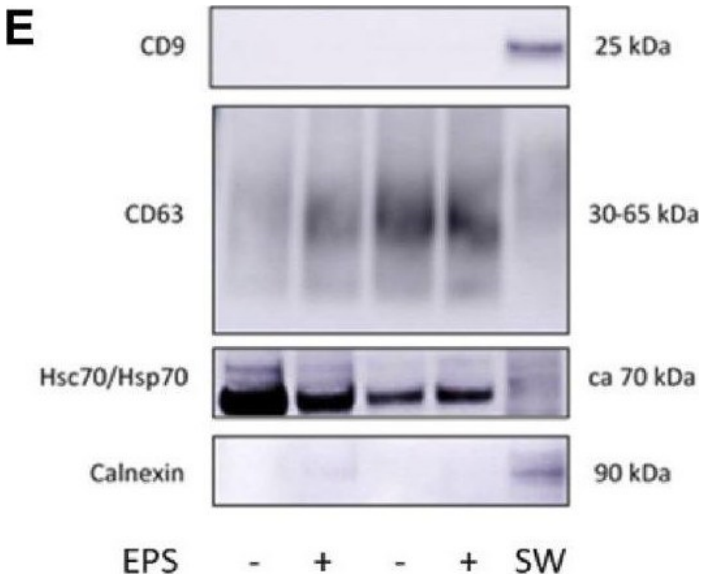
Kibra positively regulates secretion of sEV in muscle cells(A). Over-expression of Kibra-GFP in proliferating MB detected by immunoblotting with anti-GFP. (B). Increased protein in sEV fraction collected from equal numbers of myoblasts over-expressing Kibra-GFP or control GFP alone (n = 3). (C). Increased secretion of sEV particles/mL in Kibra-OE condition (NTA analysis). (D). Western blot analysis of secreted sEV harvested from equal numbers of Kibra-expressing (Kibra-OE) or GFP expressing (GFP-OE) cells. Total cell lysate [cell, (1 × 106)] and exosome fraction [Exo, (1 × 106)] were blotted for exosome markers Alix and Tsg101, with HSP70 as a loading control (E). Quantification of sEV proteins obtained from Kibra-OE normalized against GFP-OE cells (n = 3). (F). Decreased total Kibra protein in cell lysates collected from equal numbers of myoblasts expressing shRNA (1 and2) for Kibra (n = 3). (G). Quantification of data in (F). (H). Decreased secretion of sEV particles from equal numbers of cells expressing Kibra-shRNA1 and two compared to con-shRNA (NTA analysis). (I). Immunoblot analysis of total cell protein vs. sEV fraction from equal numbers of cells expressing con-shRNA and Kibra-shRNA one and 2. (J). Quantification of exosome markers in sEV fraction from Kibra-shRNA1 and 2 cells normalized against con-shRNA cells (n = 3). All quantification results show the mean ± SE, *p ≤ 0.05, **p ≤ 0.005, ***p ≤ 0.0005 as determined by Student's t-test.

Image collected and cropped by CiteAb under a CC-BY license from the following publication: Enhanced secretion of promyogenic exosomes by quiescent muscle cells. *Front Cell Dev Biol* (2024)



Expression of mIL-6-RFP-Fc upon gene transfer through hydrodynamic transfection.(a) Western blot analysis of liver lysates from mice hydrodynamically transfected with control vector (GFP) lacking the epitopes or mIL-6-RFP-Fc using an antibody directed against the V5-epitope of mIL-6-RFP-Fc (α-V5). Amounts of plasmid transfected as indicated. Mice were sacrificed 24 h post transfection. As a negative control, a mouse treated with transfection agent without plasmid is shown. Detection of HSP70 served as a loading control (α-HSP70). (b) mIL-6-RFP-Fc serum concentrations as determined by ELISA at time points indicated. n = 4 animals; subsequently also analyzed in (d). (c) Immunofluorescence of liver cryosections 24 h post hydrodynamic gene delivery. Co-transfection with expression vectors encoding mIL-6-RFP-Fc (as detected by α-HA, red) and GFP (green) was performed. As a negative control, a mouse treated with transfection agent without plasmid is shown. (d) qRT-PCR of liver acute phase mRNAs 24 h after hydrodynamic delivery of 37 μg of either control plasmid or mIL-6-RFP-Fc-encoding plasmid. SAA1, serum amyloid A; A2M, α2-macroglobulin. Data were normalized and calculated using the housekeeper GAPDH and the ΔΔCT method51. X-fold expression relative to mean of healthy normal mice. n = 4 (mIL-6-RFP-Fc) and n = 5 (GFP) animals/group. Box plots, whiskers indicating minimal to maximal values, *p ≤ 0.05, one-sided t-test. (e) Serum levels of mIL-6-RFP-Fc from 4 additional mice (#1–#4) over time following hydrodynamic transfection with 37 μg plasmid. Western blot using an antibody directed against the V5-epitope (α-V5, left panel) and corresponding quantification by ELISA (right panel). ctrl, mouse transfected with empty vector.

Image collected and cropped by CiteAb under a CC-BY license from the following publication: Anti-interleukin-6 therapy through application of a monogenic protein inhibitor via gene delivery. *Sci Rep* (2015)



Characterization of myotube derived extracellular vesicles (EVs). Human myotubes were exposed to electrical pulse stimulation (EPS) for 24 h, and cell derived EVs were collected for 24 h thereafter. Size (A) and concentration (C) of exosomes (EXO) and microvesicles (MV) were measured by nanoparticle tracking analysis (NTA). The presence of EV markers on exosomes and MV captured by anti-CD81-coated magnetic beads were detected with PE-conjugated CD81 (B) and CD63 (D) antibodies by flow-cytometry (BD Accuri C6 flow cytometer). Presence of CD9, calnexin, and heat shock protein 70 (Hsc/Hsp70) on exosomes were measured by Western blotting (E). Cell lysates of SW480 cells (SW) were used as control. Transmission electron microscopy (TEM) images of skeletal muscle cell derived EVs (F). 1. Freshly isolated EVs from conditioned media from human myotubes, scale bar 1 µm. 2. Close up of framed EVs in picture 1, scale bar 200 nm. Data are presented as mean ± SEM (n = 6 in each group). MFI = mean fluorescence intensity.

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Handling & Storage

Long Term Storage -20°C

Shipping Blue Ice

Regulatory Status RUO - Research Use Only

Product Details

Alternative Name	Hsc70/Hsp73, Hsp70/Hsp72
Application	Flow Cytometry, IHC (PS), IP, WB
Application Notes	Detects a band of ~72-73kDa by Western blot.
Clone	N27F3-4
Formulation	Liquid. In PBS containing 50% glycerol and 0.09% sodium azide.
GenBank ID	M11717 (HSP70), Y00371 (HSC70)
Host	Mouse
Immunogen	Purified HSC70 (Hsp73) and HSP70 (Hsp72) isolated from human HeLa cells.
Isotype	IgG1
Purity Detail	Protein G affinity purified.
Recommendation Dilutions/Conditions	Flow Cytometry (1:100)Western Blot (1:1,000, colorimetric)Suggested dilutions/conditions may not be available for all applications.Optimal conditions must be determined individually for each application.
Source	Purified from ascites.
Species Reactivity	Beluga, Bovine, Chicken, Dog, Fish, Guinea pig, Hamster, Human, Monkey, Mouse, Plant, Porcine, Rabbit, Rat, Sheep, Xenopus
UniProt ID	P0DMV8 (HSP70/HSP72), P11142 (HSC70/HSP73)

Worry-free Guarantee

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