HSP70 Monoclonal Antibody (5A5)

Product Details	
Size	250 µL
Species Reactivity	Amphibian, Avian, Dog, Fruit fly, Fish, Flatworm, Human, Mouse, Non-human primate, Rat, Yeast
Published Species	Rabbit, Yeast, Rat, Fruit fly, Mollusc, Amphibian, Bovine, Human, Mouse
Host/Isotope	Mouse / IgG1
Class	Monoclonal
Type	Antibody
Clone	5A5
Conjugate	Unconjugated
Immunogen	Human recombinant HSP70 over expressed in E. coli.
Form	Liquid
Concentration	1.0 mg/mL
Purification	Protein A
Storage buffer	PBS with 1mg/mL BSA
Contains	0.05% sodium azide
Storage Conditions	-20° C, Avoid Freeze/Thaw Cycles
RRID	AB_325455

Applications	Tested Dilution	Publications
Gel Shift (GS)	Assay Dependent	1 Publication
Immunocytochemistry (ICC)	1:200	2 Publications
Immunofluorescence (IF)	1:200	1 Publication
Immunohistochemistry (Frozen) (IHC (F))	Assay Dependent	-
Immunoprecipitation (IP)	Assay Dependent	1 Publication
Western Blot (WB)	1:250 - 1:1000	29 Publications
ELISA (ELISA)	1:1000	2 Publications
Immunohistochemistry (IHC)	1:200	4 Publications
Neutralization (Neu)	-	1 Publication

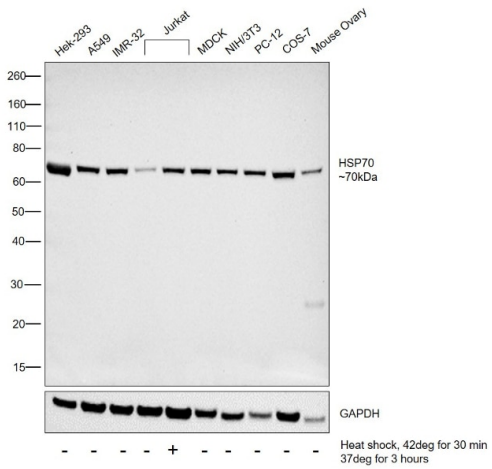
Product Specific Information

MA3-007 detects several members of the heat shock protein 70 kDa (HSP70) gene family including HSP70, HSC70, GRP78, and following heat shock, HSP72 from yeast, rat, Drosophila, fish, mouse, avian, amphibian and human samples.

MA3-007 has been successfully used in Western blot, immunofluorescence, gel shift, immunohistochemistry (frozen), and immunoprecipitation procedures. By Western blot, this antibody detects proteins from ~70 kDa to ~78 kDa representing different members of the HSP70 family. 2-dimensional gel electrophoresis is required to resolve the heat induced form of these proteins from their constitutively expressed counterparts. Immunofluorescence staining of HSP70 in heat shocked HeLa cells with MA3-007 results in cytoplasmic staining.

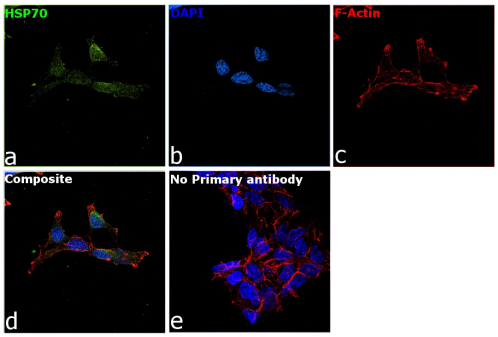
The MA3-007 antigen is recombinant human HSP70 over-expressed in E. coli. Epitope mapping with a panel of HSP70 deletion mutants suggests that the epitope recognized is located between amino acids 122-264 of human HSP70, a region that has been shown to be involved in ATP binding. This is the first monoclonal antibody reported to react with: 1) the ATP binding region of HSP70, 2) an epitope in the amino terminus of HSP70.

Advanced Verification Data

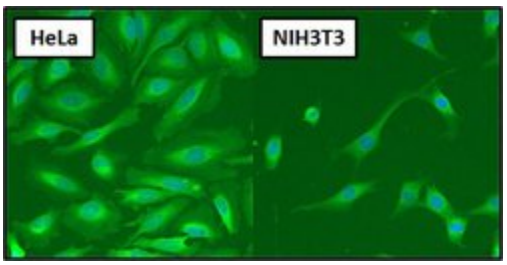


HSP70 Antibody (MA3-007)
Altered expression of proteins upon cell treatment demonstrates antibody specificity. Western blot using HSP70 Mouse Monoclonal Antibody (5A5) (Product # MA3-007), shows increased expression of proteins upon heat shock treatment. Cell treatment validation info.

Product Images For HSP70 Monoclonal Antibody (5A5)



HSP70 Antibody (MA3-007) in IF
Immunofluorescence analysis of HSP70 was performed using 70% confluent log phase HEK-293 cells. The cells were fixed with 4% paraformaldehyde for 10 minutes, permeabilized with 0.1% Triton™ X-100 for 15 minutes, and blocked with 2% BSA for 1 hour at room temperature. The cells were labeled with HSP70 Monoclonal Antibody (5A5) (Product # MA3-007) at 1:200 dilution in 0.1% BSA, incubated at 4 degree Celsius overnight and then labeled with Goat anti-Mouse IgG (H+L), Superclonal™ Recombinant Secondary Antibody, Alexa Fluor 488 conjugate (Product # A28175) at a dilution of 1:2000 for 45 minutes at room temperature (Panel a: green). Nuclei (Panel b: blue) were stained with SlowFade® Gold Antifade Mountant with DAPI (Product # S36938). F-actin (Panel c: red) was stained with Rhodamine Phalloidin (Product # R415, 1:300). Panel d represents the merged image showing localization to nucleus and cytoplasm. Panel e represents control cells with no primary antibody to assess background. The images were captured at 60X magnification.



HSP70 Antibody (MA3-007) in IF
Immunofluorescent analysis of Heat Shock Protein 70 (HSP70) (green) in HeLa and NIH3T3 cells. Formalin fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 10 minutes at room temperature and blocked with 1% Blocker BSA (Product # 37525) for 15 minutes at room temperature. Cells were probed with a HSP70 Monoclonal Antibody (Product # MA3-007), at a dilution of 1:50 for at least 1 hour at room temperature, washed with PBS, and incubated with DyLight 488 goat-anti-mouse IgG secondary antibody (Product # 35502) at a dilution of 1:400 for 30 minutes at room temperature. Nuclei (blue) were stained with Hoechst 33342 dye (Product # 62249). Images were taken on a Thermo Scientific ArrayScan at 20X magnification.

View more figures on thermofisher.com

41 References

Western Blot (29)

PloS one

Exosomes Derived from Squamous Head and Neck Cancer Promote Cell Survival after Ionizing Radiation.

"MA3-007 was used in western blot to calculate how ionizing radiation can promote cell survival in exosomes derived from squamous head and neck cancer"

Authors: Mutschelknaus L,Peters C,Winkler K,Yentrapalli R,Heider T,Atkinson MJ,Moertl S

Species
Human
Not Applicable

Dilution
Not Cited
Not Cited

Year
2016

The Journal of experimental biology

Intermittent hypoxia leads to functional reorganization of mitochondria and affects cellular bioenergetics in marine molluscs.

"MA3-007 was used in western blot to determine the affect of cellular bioenergetics in marine molluscs and functional reorganization of mitochondria by intermittent hypoxia"

Authors: Ivanina AV,Nesmelova I,Leamy L,Sokolov EP,Sokolova IM

Species
Not Applicable

Dilution
Not Cited

Year
2016

View more WB references on thermofisher.com

ELISA (2)

Journal of evolutionary biology

Hsp70 protein levels and thermotolerance in Drosophila subobscura: a reassessment of the thermal co-adaptation hypothesis.

"MA3-007 was used in ELISA to test the thermal co-adaptation hypothesis using Drosophila subobscura"

Authors: Calabria G,Dolgova O,Rego C,Castañeda LE,Rezende EL,Balanyà J,Pascual M,Sørensen JG,Loeschcke V,Santos M

Species
Fruit fly

Dilution
1:1000

Year
2012

Oecologia

Assay conditions in laboratory experiments: is the use of constant rather than fluctuating temperatures justified when investigating temperature-induced plasticity?

"MA3007 was used in ELISA to evaluate if the use of constant temperatures is justified when studying Lycaena tityrus"

Authors: Fischer K,Kölzow N,Höltje H,Karl I

Species
Not Applicable

Dilution
1:700

Year
2011

More applications with references on thermofisher.com

ICC (2) IHC (4) IF (1) IP (1) GS (1) Neu (1)