abcam

ab109376

Anti-Hsp27 antibody [EPR5477]

Recombinant | RabMAb | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR5477
Purification technique	Affinity purification Protein A
Concentration	0.102 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

Species	African green monkey

Dilution info	1/1000 - 1/10000
Notes	-

Predicted

Species	Rat
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/500
Notes	-

Expected

Species	African green monkey
Dilution info	1/500
Notes	-

Predicted

Species	Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/10 - 1/100

Notes	ab172730 -Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

Species	African green monkey
Dilution info	1/10 - 1/100
Notes	ab172730 -Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Predicted

Species	Rat
Dilution info	-
Notes	-

Target data

See full target information HSPB1

Function	Small heat shock protein which functions as a molecular chaperone probably maintaining denatured proteins in a folding-competent state (PubMed:10383393, PubMed:20178975). Plays a role in stress resistance and actin organization (PubMed:19166925). Through its molecular chaperone activity may regulate numerous biological processes including the phosphorylation and the axonal transport of neurofilament proteins (PubMed:23728742).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Stable for 12 months at -20°C

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Hsp27 also known as HSPB1 is a small heat shock protein with a molecular weight of approximately 27 kilodaltons. This protein is expressed in various tissues including muscle heart and brain. It functions as a molecular chaperone that stabilizes unfolded proteins preventing their aggregation. Hsp27 undergoes phosphorylation at specific residues which modulates its chaperone activity and interaction with other proteins.
Biological function summary	Hsp27 plays a critical role in cellular stress response by regulating actin cytoskeleton dynamics and inhibiting apoptosis. It forms part of a complex that includes other proteins such as alphaB-crystallin. This complex facilitates the reorganization of proteins under stress conditions enhancing cell survival during oxidative stress or thermal shock. Hsp27 also modulates inflammatory responses and has been shown to affect cell migration.
Pathways	Hsp27 integrates into the apoptosis and inflammation pathways. It interacts with apoptotic machinery such as caspase proteins to protect cells by hindering apoptosome formation. Additionally Hsp27 can engage with pathways involving the nuclear factor-kappa B (NF-kB) impacting inflammatory signaling. CPTC (carboxyl-pyrene-trioctylamine) can modulate these pathways by altering Hsp27 function and interactions.
Associated diseases and disorders	Hsp27 has connections to neurodegenerative diseases and cancer. In neurodegenerative conditions such as Alzheimer's disease its chaperone activity is thought to protect neurons from misfolded protein aggregates. In cancer Hsp27 supports tumor cell survival and resistance to chemotherapy by interacting with proteins like Akt and p53. These interactions highlight the complex role of Hsp27 in modulating cellular responses in various pathological states.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

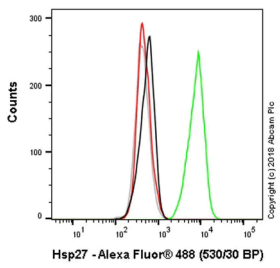
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

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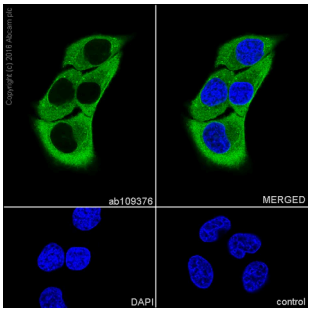
5 product images



Flow Cytometry (Intracellular) - Anti-Hsp27 antibody [EPR5477] (ab109376)

Hsp27 Flow Cytometry (Intracellular) staining using rabbit Anti-Hsp27 antibody

Overlay histogram showing wild-type HAP1 (green line) and HSPB1 knockout HAP1 cells (red line) stained with ab109376. The cells were fixed with 4% formaldehyde (10 min) and then permeabilized with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS / 10% normal goat serum to block non-specific protein-protein interactions followed by the antibody (ab109376, 1µg/ml) for 30 min at 22°C. The secondary antibody used was Alexa Fluorr® 488 goat anti-rabbit IgG (H&L) presorbed (ab150081) at 1/2000 dilution for 30 min at 22°C. A rabbit IgG isotype control antibody (ab172730) was used at the same concentration and conditions as the primary antibody (HAP1 wildtype - black line, knockout HSPB1 HAP1- grey line). Unlabelled sample was also used as a control (this line is not shown for the purpose of simplicity). Acquisition of >5,000 events were collected using a 50 mW Blue laser (488nm) and 530/30 bandpass filter.

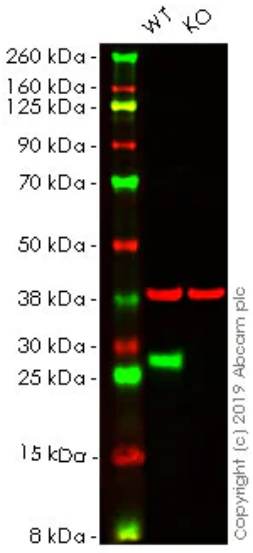


Immunocytochemistry/ Immunofluorescence - Anti-Hsp27 antibody [EPR5477] (ab109376)

Hsp27 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-Hsp27 antibody

Immunocytochemistry/Immunofluorescence analysis of HeLa (human cervix adenocarcinoma) cells labelling Hsp27 with purified ab109376 at 1/500. Cells were fixed with 100% methanol. ab150077, Alexa Fluor® 488-conjugated goat anti-rabbit IgG (1/1000) was used as the secondary antibody. Nuclei were counterstained with DAPI (blue).

Secondary Only Control: PBS was used instead of the primary antibody as the negative control.



Western blot - Anti-Hsp27 antibody [EPR5477] (ab109376)

Hsp27 Western blot staining using rabbit Anti-Hsp27 antibody

Lanes 1- 2: Merged signal (red and green). Green - ab109376 observed at 23 kDa. Red - Anti-GAPDH antibody [6C5] - Loading Control (ab8245) observed at 37 kDa.
ab109376 was shown to react with Hsp27 in wild-type HeLa cells in western blot. Loss of signal was observed when knockout cell line ab261738 (knockout cell lysate ab256945) was used. Wild-type HeLa and Hsp27 knockout HeLa cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab109376 and Anti-GAPDH antibody [6C5] - Loading Control (ab8245) overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye®800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-Hsp27 antibody [EPR5477] (ab109376) at 1/1000 dilution

Lane 1:
Wild-type HeLa cell lysate at 20 µg

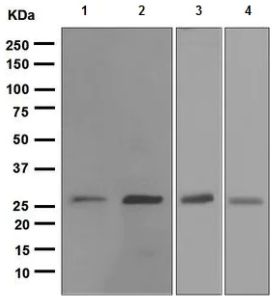
Lane 2:
HSPB1 knockout HeLa cell lysate at 20 µg

Lane 2:
Western blot - Human HSPB1 (Hsp27) knockout HeLa cell line (ab261738)

Performed under reducing conditions.

Predicted band size: 23 kDa

Observed band size: 23 kDa



Western blot - Anti-Hsp27 antibody [EPR5477] (ab109376)

All lanes:
Western blot - Anti-Hsp27 antibody [EPR5477] (ab109376) at 1/1000 dilution

Lane 1:
HeLa cell lysate at 10 µg

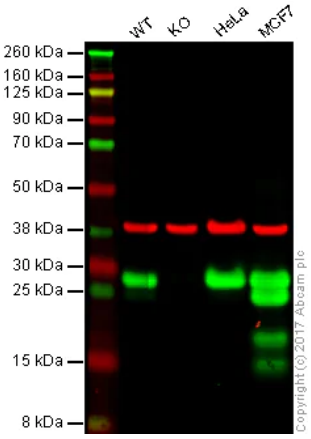
Lane 2:
COS-1 cell lysate at 10 µg

Lane 3:
BxPC-3 cell lysate at 10 µg

Lane 4:
HT-1376 cell lysate at 10 µg

Predicted band size: 23 kDa

Observed band size: 27 kDa



Western blot - Anti-Hsp27 antibody [EPR5477] (ab109376)

Lanes 1 - 4: Merged signal (red and green). Green - ab109376 observed at 27 kDa. Red - loading control, ab8245, observed at 37 kDa.
ab109376 was shown to specifically react with Hsp27 in wild-type HAP1 cells as signal was lost in Hsp27 knockout HAP1 cells. Wild-type and Hsp27 knockout samples were subjected to SDS-PAGE. ab109376 and ab8245 (Mouse anti GAPDH loading control) were incubated overnight at 4°C at 1/1000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed ab216773 and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed ab216776 secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-Hsp27 antibody [EPR5477] (ab109376) at 1/1000 dilution

Lane 1:
Wild-type HAP1 whole cell lysate at 20 µg

Lane 2:
Hsp27 knockout HAP1 whole cell lysate at 20 µg

Lane 3:
HeLa whole cell lysate at 20 µg

Lane 4:
MCF7 whole cell lysate at 20 µg

Predicted band size: 23 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.