

Datasheet for ABIN361649

anti-HSP27 antibody

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Overview

Quantity:	50 µg
Target:	HSP27 (HSPB1)
Reactivity:	Human
Host:	Mouse
Clonality:	Monoclonal
Conjugate:	This HSP27 antibody is un-conjugated
Application:	Western Blotting (WB), Immunohistochemistry (IHC), ELISA, Immunofluorescence (IF), Immunoprecipitation (IP), Immunocytochemistry (ICC)

Product Details

Immunogen:	Full length human HSP27
Clone:	5D12-A12
Isotype:	IgG2b kappa
Specificity:	Detects ~27 kDa. Has no cross-reactivity to Alpha B crystallin. Very limited cross-reactivity to other species.
Cross-Reactivity:	Human
Purification:	Protein G Purified

Target Details

Target:	HSP27 (HSPB1)
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Target Details

Alternative Name: HSP27 ([HSPB1 Products](#))

Background: HSP27s belong to an abundant and ubiquitous family of small heat shock proteins (sHSP). It is an important HSP found in both normal human cells and cancer cells. The basic structure of most sHSPs is a homologous and highly conserved amino acid sequence, with an α -crystallin domain at the C-terminus and the WD/EPF domain at the less conserved N-terminus. This N-terminus is essential for the development of high molecular oligomers (1, 2). HSP27-oligomers consist of stable dimers formed by as many as 8-40 HSP27 protein monomers (3). The oligomerization status is connected with the chaperone activity: aggregates of large oligomers have high chaperone activity, whereas dimers have no chaperone activity (4). HSP27 is localized to the cytoplasm of unstressed cells but can redistribute to the nucleus in response to stress, where it may function to stabilize DNA and/or the nuclear membrane. Other functions include chaperone activity (as mentioned above), thermo tolerance in vivo, inhibition of apoptosis, and signal transduction. Specifically, in vitro, it acts as an ATP-independent chaperone by inhibiting protein aggregation and by stabilizing partially denatured proteins, which ensures refolding of the HSP70 complex. HSP27 is also involved in the apoptotic signaling pathway because it interferes with the activation of cytochrome c/Apaf-1/dATP complex, thereby inhibiting the activation of procaspase-9. It is also hypothesized that HSP27 may serve some role in cross-bridge formation between actin and myosin (5). And finally, HSP27 is also thought to be involved in the process of cell differentiation. The up-regulation of HSP27 correlates with the rate of phosphorylation and with an increase of large oligomers. It is possible that HSP27 may play a crucial role in termination of growth (6). For more information visit our HSP27 Scientific Resource Guide at <http://www.HSP27.com>.

Gene ID: 3315

NCBI Accession: [NP_001531](#)

UniProt: [P04792](#)

Pathways: [MAPK Signaling](#), [Regulation of Actin Filament Polymerization](#), [Signaling Events mediated by VEGFR1 and VEGFR2](#), [Negative Regulation of intrinsic apoptotic Signaling](#), [VEGF Signaling](#)

Application Details

Application Notes:

- WB (1:2000)
- ICC/IF (1:100)
- optimal dilutions for assays should be determined by the user.

Comment: 0.5 μ g/ml of ABIN361649 was sufficient for detection of HSP27 in 10 μ g of HeLa lysate by

Application Details

colorimetric immunoblot analysis using Goat anti-mouse IgG:HRP as the secondary antibody.

Restrictions: For Research Use only

Handling

Format: Liquid

Concentration: 1 mg/mL

Buffer: PBS pH 7.4, 50 % glycerol, 0.09 % sodium azide, Storage buffer may change when conjugated

Preservative: Sodium azide

Precaution of Use: This product contains Sodium azide: a POISONOUS AND HAZARDOUS SUBSTANCE which should be handled by trained staff only.

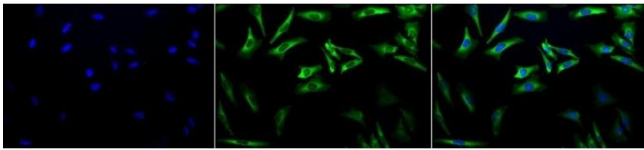
Storage: -20 °C

Storage Comment: -20°C

Publications

Product cited in: Lee, Dempsey-Hibbert, Vimalachandran, Wardle, Sutton, Williams: "Re-examining HSPC1 inhibitors." in: **Cell stress & chaperones**, Vol. 22, Issue 2, pp. 293-306, (2018) ([PubMed](#)).

Kötter, Unger, Hamdani, Lang, Vorgerd, Nagel-Steger, Linke: "Human myocytes are protected from titin aggregation-induced stiffening by small heat shock proteins." in: **The Journal of cell biology**, Vol. 204, Issue 2, pp. 187-202, (2014) ([PubMed](#)).



Immunocytochemistry

Image 1. Immunocytochemistry/Immunofluorescence analysis using Mouse Anti-Hsp27 Monoclonal Antibody, Clone 5D12-A3 (ABIN361649 and ABIN361650). Tissue: Heat Shocked cervical cancer cells (HeLa). Species: Human. Fixation: 2 % Formaldehyde for 20 min at RT. Primary Antibody: Mouse Anti-Hsp27 Monoclonal Antibody (ABIN361649 and ABIN361650) at 1:100 for 12 hours at 4 °C. Secondary Antibody: FITC Goat Anti-Mouse (green) at 1:200 for 2 hours at RT. Counterstain: DAPI (blue) nuclear stain at 1:40000 for 2 hours at RT. Localization: Cytoplasm. Nucleus. Magnification: 20x. (A) DAPI (blue) nuclear stain. (B) Anti-Hsp27 Antibody. (C) Composite. Heat Shocked at 42 °C for 1h.

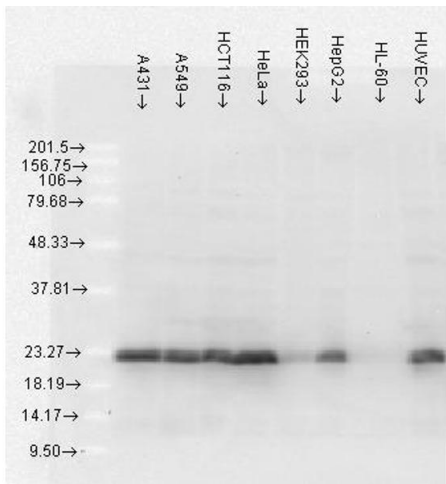
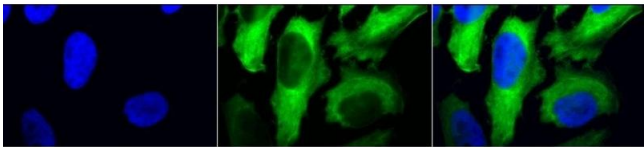


Image 2. Hsp27(5D12-A3), cell lines



Immunocytochemistry

Image 3. Immunocytochemistry/Immunofluorescence analysis using Mouse Anti-Hsp27 Monoclonal Antibody, Clone 5D12-A3 (ABIN361649 and ABIN361650). Tissue: Heat Shocked cervical cancer cells (HeLa). Species: Human. Fixation: 2 % Formaldehyde for 20 min at RT. Primary Antibody: Mouse Anti-Hsp27 Monoclonal Antibody (ABIN361649 and ABIN361650) at 1:100 for 12 hours at 4 °C. Secondary Antibody: FITC Goat Anti-Mouse (green) at 1:200 for 2 hours at RT. Counterstain: DAPI (blue) nuclear

stain at 1:40000 for 2 hours at RT. Localization: Cytoplasm. Nucleus. Magnification: 100x. (A) DAPI (blue) nuclear stain. (B) Anti-Hsp27 Antibody. (C) Composite. Heat Shocked at 42 °C for 1h.

Please check the [product details page](#) for more images. Overall 4 images are available for ABIN361649.