

PRODUCT INFORMATION



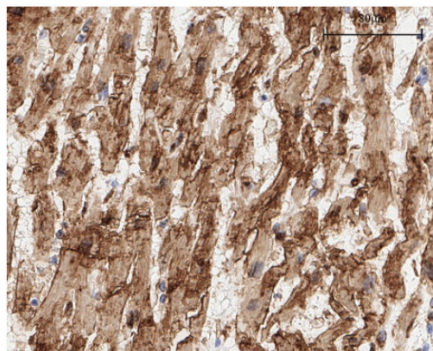
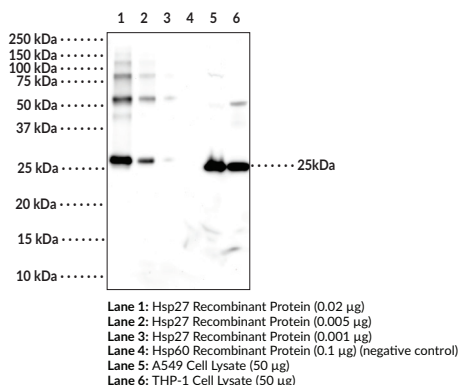
Hsp27 (HspB1) Monoclonal Antibody (Clone 6A5)

Item No. 25692

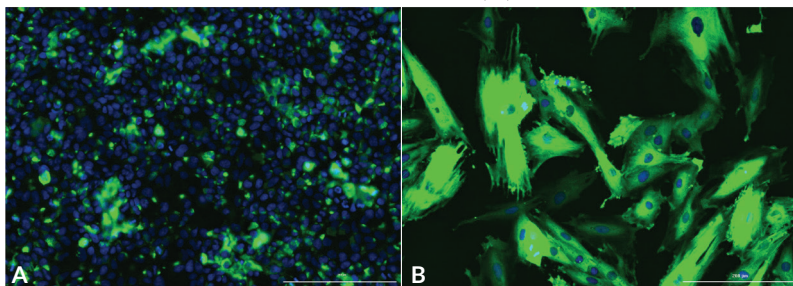
Overview and Properties

Contents:	This vial contains 100 µg of protein G-purified monoclonal antibody.
Synonyms:	Estrogen-Regulated 24 kDa Protein, Heat Shock Protein 27, Heat Shock Protein Beta-1, Stress-Responsive Protein 27
Immunogen:	Full-length human recombinant Hsp27 protein
Cross Reactivity:	(-) Hsp60
Species Reactivity:	(+) Human
Uniprot No.:	P04792
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥3 years
Storage Buffer:	PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
Clone:	6A5
Host:	Mouse
Isotype:	IgG1
Applications:	ELISA, Immunofluorescence (IF), Immunohistochemistry (IHC), and Western blot (WB); the recommended starting dilution for ELISA, IF, WB is 1:1,000 and 1:200 for IHC. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Immunohistochemistry analysis of formalin-fixed, paraffin-embedded (FFPE) human heart tissue after heat induced antigen retrieval in pH 6.0 citrate buffer. After incubation with Hsp27 (HspB1) Monoclonal Antibody (Clone 6A5) (Item No. 25692) at a 1:200 dilution, slides were incubated with biotinylated secondary antibody, followed by alkaline phosphatase-streptavidin and chromogen (DAB).



Panel A: Immunofluorescent staining of Huh-7 (human liver) cells. Hsp27 (HspB1) Monoclonal Antibody (Clone 6A5) at dilution of 1:200 followed by Goat Anti-Mouse (IgG+IgM) FITC (Item No. 10006617) (green) and Hoechst nuclear stain (blue). Panel B: Immunofluorescent staining of H9C2 (rat myoblast) cells. Hsp27 (HspB1) Monoclonal Antibody (Clone 6A5) at dilution of 1:1,000 followed by Goat Anti-Mouse (IgG+IgM) FITC (Item No. 10006617) (green) and Hoechst nuclear stain (blue).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 12/05/2023

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

PRODUCT INFORMATION



Description

Heat shock protein 27 (Hsp27), also known as heat shock protein beta-1 (HspB1), is a member of the small heat shock protein (sHSP) family that is upregulated during conditions of cellular stress including heat shock, radiation, hypoxia, and exposure to reactive oxygen species (ROS).^{1,2} It is composed of an N-terminal domain, a highly conserved alpha-crystallin domain, and a C-terminal domain. Hsp27 functions as a molecular chaperone to prevent protein aggregation in an ATPase-independent manner. This chaperone activity is altered by changes in oligomerization state or by post-translational modifications including phosphorylation at serine residues 15 and 82, which increases affinity for damaged polypeptides in response to heat shock.³ Hsp27 also works in complex with other chaperone proteins, such as Hsp70 (Item Nos. 22739 | 23002), to correct misfolded proteins. This protein also plays a role in apoptosis, proteasome activation, cell differentiation, and has been shown to interact with actin and intermediate filaments.⁴⁻⁶ Mutations in *HSPB1* have been linked to hereditary neuromuscular diseases and cause Charcot-Marie-Tooth Disease Type 2 (CMT-2).⁷ Cayman's Hsp27 (HspB1) Monoclonal Antibody can be used for Western blot and ELISA applications. The antibody recognizes Hsp27 (HspB1) at 25 kDa from human samples.

References

1. Hendrick, J.P. and Hartl, F.-U. Molecular chaperone functions of heat-shock proteins. *Annu. Rev. Biochem.* **62**, 349-384 (1993).
2. Schlesinger, M.J. Heat shock proteins. *J. Biol. Chem.* **265(21)**, 12111-12114 (1990).
3. Carra, S., Alberti, S., Arrigo, P.A., *et al.* The growing world of small heat shock proteins: From structure to functions. *Cell Stress and Chaperones* **22(4)**, 601-611 (2017).
4. Goloudina, A.R., Demidov, O.N., and Garrido, C. Inhibition of HSP70: A challenging anti-cancer strategy. *Cancer Lett.* **325(2)**, 117-124 (2012).
5. Kindås-Mügge, I. and Trautinger, F. Increased expression of the Mr 27,000 heat shock protein (hsp27) in *in vitro* differentiated normal human keratinocytes. *Cell Growth Differ.* **5(7)**, 777-781 (1994).
6. Rousseau, S., Houle, F., Kotanides, H., *et al.* Vascular endothelial growth factor (VEGF)-driven actin-based motility is mediated by VEGFR2 and requires concerted activation of stress-activated protein kinase 2 (SAPK2/p38) and geldanamycin-sensitive phosphorylation of focal adhesion kinase. *J. Biol. Chem.* **275(14)**, 10661-10672 (2000).
7. Evgrafov, O.V., Mersyanova, I., Irobi, J., *et al.* Mutant small heat-shock protein 27 causes axonal Charcot-Marie-Tooth disease and distal hereditary motor neuropathy. *Nat. Genet.* **36(6)**, 602-606 (2004).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM