

PRODUCT INFORMATION



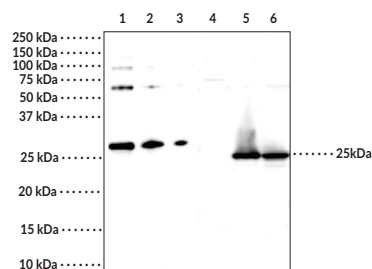
Hsp27 (HspB1) Polyclonal Antibody

Item No. 24530

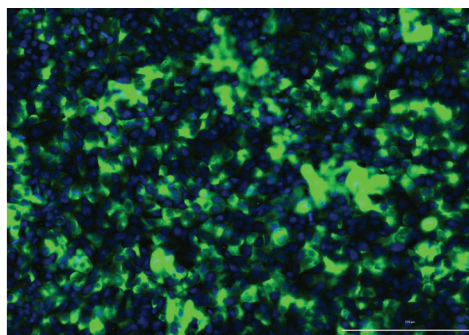
Overview and Properties

| | |
|----------------------------|--|
| Contents: | This vial contains 300 µg of Protein A purified Hsp27 (HspB1) Polyclonal Antibody. |
| Synonyms: | Estrogen-regulated 24 kDa protein, Heat Shock 27 kDa Protein, Heat Shock Protein 27, Heat Shock Protein beta-1, SRP27, Stress-responsive Protein 27 |
| Immunogen: | Human recombinant Hsp27 (HspB1) |
| Species Reactivity: | (+) Human; others species not tested |
| Uniprot No.: | P04792 |
| Form: | Liquid |
| Storage: | -20°C (as supplied) |
| Stability: | ≥1 year |
| Storage Buffer: | PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide |
| Host: | Rabbit |
| Applications: | ELISA, Immunofluorescence (IF), Immunohistochemistry (IHC), and Western blot (WB); the recommended starting dilution for IF and IHC is 1:1,000 and 1:200, respectively. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically. |

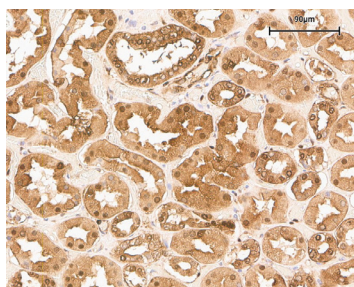
Images



Lane 1: 22736 Hsp27 (HspB1) Recombinant Protein (0.02µg)
Lane 2: 22736 Hsp27 (HspB1) Recombinant Protein (0.005µg)
Lane 3: 22736 Hsp27 (HspB1) Recombinant Protein (0.001µg)
Lane 4: 22738 Hsp60 (HspD1) Recombinant Protein (0.1µg) [negative control]
Lane 5: A549 Cell Lysate (50µg)
Lane 6: HeLa Heat Shock Cell Lysate (50 µg)



Immunofluorescent staining of Huh-7 (human liver) cells. Hsp27 (HspB1) Polyclonal Antibody at dilution of 1:1,000 followed by Goat Anti-Rabbit IgG FITC (Item No. 10006588) (green) and Hoechst nuclear stain (blue).



Immunohistochemistry analysis of formalin-fixed, paraffin-embedded (FFPE) human liver tissue after heat induced antigen retrieval in pH 6.0 citrate buffer. After incubation with HSP27 (HspB1) Polyclonal Antibody (Item No. 24530) at a 1:200 dilution, slides were incubated with biotinylated secondary antibody, followed by alkaline phosphatase-streptavidin and chromogen (DAB).

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.

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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

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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) Polyclonal 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. Kindâs-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