

Hsp27 (phospho-Ser78) Polyclonal Antibody

Product Specifications

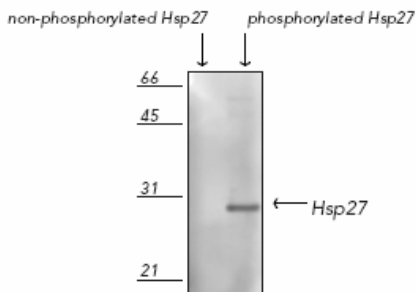
Catalog Number:	SPA-523
Host:	Rabbit
Species Reactivity:	Human, monkey (weak), bovine, and guinea pig Other species not tested
Applications: <i>The optimal dilution for a specific application must be determined by the investigator</i>	WB: 1:1,000 (ECL) Other applications not tested
Predicted m.w.:	~27 kDa
Concentration:	See product label
Purification:	Protein A Affinity
Format:	PBS, pH 7.2, 0.09% azide, 50% glycerol
Storage: <i>Shipping conditions may differ from the recommended storage temperature</i>	Store at -20°C
Immunogen:	Synthetic phospho-peptide derived from the sequence of human Hsp27, coupled to KLH
Related Products:	
SPP-716	Hsp27 (phospho) Recombinant Protein
SAB-300 SPA-524	Goat anti-Rabbit IgG Polyclonal Antibody, HRP Conjugate Hsp27 (phospho-Ser82) Polyclonal Antibody
905-642	Hsp27 (phospho-Ser82) Monoclonal Antibody
SPA-803	Hsp27 Polyclonal Antibody
SPA-525	Hsp27 (phospho-Ser15) Polyclonal Antibody
EKS-500	Hsp27 ELISA

Background:

Human Hsp27 belongs to the conserved small heat shock protein (smHsp) family, which includes mouse Hsp25, α A-crystallins and α B-crystallins. Members of this protein superfamily from the animal, plant and microbionic kingdoms share the so-called α -crystallin domain of approximately 90 amino acid residues bound by variable N- and C-terminal extensions¹. Hsp27 expression occurs constitutively in many tissues, with high levels of expression resulting from various types of stress, including elevated temperatures, toxic metals, drugs and oxidants. Hsp27 appears to function mainly as oligomers of as many as 8-40 Hsp27 protein monomers, and data suggests that these large oligomers play a chaperone-like role in providing a site where unfolding proteins may bind until ATP and Hsp70-dependent refolding can occur². Hsp27 is phosphorylated on three phosphorylation sites (Ser15, Ser78 and Ser82) by protein kinases including MAPKAP kinase 2/3 and the stress-activated protein kinase SAPK2 (p38)³⁻⁴. Studies on cells stimulated by a variety of mitogenic and stress factors suggest that phosphorylation of Hsp27 occurs as an early prominent event, and that phosphorylation induced changes in the ultrastructure of Hsp27 may regulate its biochemical activities. The state of phosphorylation and oligomerization of Hsp27 may regulate microfilament organization as demonstrated by studies in which only the nonphosphorylated lower molecular weight forms of Hsp27 bind actin barbed ends and inhibit polymerization⁵. Hsp27 appears to protect cells by enhancing cellular glutathione levels, as indicated by elevated glutathione levels in cells overexpressing Hsp27. Studies using wild-type Hsp27 and mutants, in which the serine phosphorylation sites were mutated to alanines, glycines or aspartates, indicate that cellular glutathione levels depend on the oligomerization of Hsp27, with only the large oligomeric forms of Hsp27 capable of protecting cells by enhancing glutathione levels⁶.

References:

1. MacRae, T.H. (2000) Cell Mol Life Sci. **57**, 899-913.
2. Ehrnsperger, M., et al. (1997) EMBO J. **16**, 221-229.
3. Maizels, E.T., et al. (1998) Biochem J. **332**, 703-712.
4. Butt, E., et al. (2001) J Biol Chem. **276**, 7108-7113.
5. Benndorf, R., et al. (1994) J Biol Chem. **269**, 20780-20784.
6. Mehlen, P., et al. (1997) Biochem Biophys Res Commun. **241**, 187-192.



Western blot analysis of non-phosphorylated Hsp27 and phosphorylated Hsp27 proteins, probed with Hsp27 (phospho-Ser78) polyclonal antibody

Assay Designs makes every effort to provide a consistent source of high quality polyclonal antibodies. However, due to variations inherent in this technology, investigators are urged to purchase sufficient quantities of a specific lot number if an identical antibody is required throughout a study.

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