Anti-Hsp25/Hsp27

Catalog# SMC-114 C/D

Size: 25/100µg

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This product is for *in vitro* research use only and is not intended for use in humans or animals

Product	**Mouse anti-Hsp25/Hsp27 antibody; monoclonal**
Clone	**8A7**
Immunogen	**Human Hsp27 peptide**
Host and Subclass	**Mouse, IgG1**
Applications	**WB (6), IF (6), ICC (6), IP (9), IHC**
Specificity	**Detects a 25kDa or 27kDa protein corresponding to the molecular mass of hsp25/27 on SDS PAGE immunoblots.**
Species cross-reactivity	**Mouse, Rat, Bovine, Canine, Guinea pig, Hamster, Human. Recognizes hsp25 and hsp27, and cross-reacts with alpha B crystallin.**
Format	**PBS in 0.09% sodium azide and 50% glycerol. Protein G Purified.**
Concentration and working dilution	**1.0mg/mL, WB 1:5000 (ECL) IF 1:200**
Storage and stability	**-20°C; 1 year+; shipped on cold packs or ambient**

Scientific Background

Hsp25 is the mouse homologue of the human Hsp27 protein, a member of the small heat shock protein family comprised of a diverse group of proteins from ~15 to >30kDa(1). 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 (2, 3). Hsp27-oligomers consist of stable dimers formed by as many as 8-40 Hsp27 protein monomers (4). The oligomerization status is connected with the chaperone activity: aggregates of large oligomers have high chaperone activity, whereas dimers have no chaperone activity (5).

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. It can be rapidly phosphorylated in response to physiological stimuli relevant to the cell type examined. Thus, hsp27 has been suggested to be an important intermediate in second messenger-mediated signaling pathways (6). 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 (7). 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 (8).

Selected References

1. Welch W.J. (1985) *J Biol. Chem*. 260: 3058-3062.
2. Kim K.K., Kim R., and Kim S. (1998) *Nature* 394(6693): 595-599.
3. Van Montfort R., Slingsby C., and Vierling E. (2001) *Addv Protein Chem*. 59: 105-56.
4. Ehrnsperger M., Graber S., Gaestel M. and Buchner J. (1997) *EMBO J*. 16: 221-229.
5. Ciocca D.R., Oesterreich S., Chamness G.C., McGuire W.L., and Fugua S.A. (1993) *J Natl Cancer Inst*. 85 (19): 1558-70.
6. Welsh M.J., Wu W., Parvinem M., and Gilmont R.R. (1996) *Biol. Of Reprod.* 55: 141-151.
7. Sarto C. Binnz P.A. and Mocarelli P. (2000) *Electrophoresis*. 21(6): 1218-26.
8. Arrigo A.P. (2005) *J Cell Biochem*. 94(2): 241-6.
9. Jia, Y. et al. (2001) *J. Biol. Chem.* 276(43):39911-39918

Certificate of Analysis

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A 1:5000 dilution of SPC-114 was sufficient for detection of hsp27 in 20µg of HeLa cell lysate by ECL immunoblot analysis.

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Material Safety Data Sheet

Anti-Hsp25/27 (Monoclonal Antibody) SMC-114

This product is for *in vitro* research use only and is not intended for use in humans or animals

The below information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. StressMarq shall not be held liable for any damage resulting from handling or from contact with the above product. See the Technical Specification, Packing Slip, Invoice, and Product Catalogue for additional terms and conditions of sale.

Hazardous Ingredients

The physical, chemical and toxicological properties of these components have not been fully investigated. It is recommended that all laboratory personnel follow standard laboratory safety procedures when handling this product. Safety procedures should include wearing OSHA approved safety glasses, gloves and protective clothing. Direct physical contact with this product should be avoided.

Known Hazardous Components	CAS Number	Percent
Sodium Azide	26628-22-8	0.09

Physical Data

This product consists of mouse immunoglobulin in PBS containing 0.09% azide in 50% glycerol shipped on gel packs. The physical properties of this product have not been investigated thoroughly.

Fire and Explosion Hazard and Reactivity Data

NOT APPLICABLE

Toxicological Properties

May be harmful by inhalation, ingestion, or skin absorption. The toxicological properties of this product have not been investigated thoroughly. Exercise due caution.

Preventative Measures

Wear chemical safety goggles and compatible chemical-resistant gloves. Avoid inhalation, contact with eyes, skin or clothing.

Spill and Leak Procedures

Observe all federal, state and local environmental regulations.

- Wear protective equipment.
- Absorb on sand or vermiculite and place in closed containers for disposal.
- Dispose or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

First Aid Measures

- If swallowed, wash out mouth with water, provided person is conscious. Call a physician.
- In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. If a rash or other irritation develops, call a physician.
- If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.
- In case of eye contact, flush with copious amounts of water for at least 15 minutes while separating the eyelids with fingers. Call a physician.

Authorized: StressMarq Biosciences Inc.
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