Anti-Hsp70
Catalog# SPC-103C/D
Size: 25/100µl

Product	**Rabbit anti-hsp70 antibody; polyclonal**
Clone	**N/A**
Immunogen	**Full length human protein Hsp70 (NM_005345)**
Host and Subclass	**Rabbit**
Cited Applications	**WB (7-9), IP(9, 10), ELISA, IHC, ICC, IF**
Specificity	**Detects a 70kDa protein corresponding to the molecular mass of inducible hsp70 on SDS PAGE immunoblots. May cross-react with Hsc70 at lower dilutions.**
Species cross-reactivity	**Human, Mouse, Rat, Beluga, Cow, Dog, Fish (carp), Guinea pig, Hamster, Monkey, Pig, Sheep, Coral, Tomato, Tobacco, Spiny Dogfish Shark (*Squalus acanthias*), Atlantic hagfish (*Myxine glutinosa*), Rainbow Trout**
Format	**Whole Rabbit Serum**
Working Dilution	**WB 1:25,000 (ECL) IP 1:100**
Storage and stability	**-20˚C; 1 year+; shipped on cold packs or ambient**

Scientific Background

Hsp70 genes encode abundant heat-inducible 70-kDa hsps (hsp70s). In most eukaryotes hsp70 genes exist as part of a multigene family. They are found in most cellular compartments of eukaryotes including nuclei, mitochondria, chloroplasts, the endoplasmic reticulum and the cytosol, as well as in bacteria. The genes show a high degree of conservation, having at least 50% identity (1, 2). The N-terminal two thirds of hsp70s are more conserved than the C-terminal third. Hsp70 binds ATP with high affinity and possesses a weak ATPase activity which can be stimulated by binding to unfolded proteins and synthetic peptides (3). When hsc70 (constitutively expressed) present in mammalian cells was truncated, ATP binding activity was found to reside in an N-terminal fragment of 44 kDa which lacked peptide binding capacity. Polypeptide binding ability therefore resided within the C-terminal half (4). The structure of this ATPbinding domain displays multiple features of nucleotide binding proteins (5).

All hsp70s, regardless of location, bind proteins, particularly unfolded ones. The molecular chaperones of the hsp70 family recognize and bind to nascent polypeptide chains as well as partially folded intermediates of proteins preventing their aggregation and misfolding. The binding of ATP triggers a critical conformational change leading to the release of the bound substrate protein (6). The universal ability of hsp70s to undergo cycles of binding to and release from hydrophobic stretches of partially unfolded proteins determines their role in a great variety of vital intracellular functions such as protein synthesis, protein folding and oligomerization and protein transport.

Selected References

1. Welch W.J. and Suhan J.P. (1986) *J.Cell Biol.* 103: 2035-2050.
2. Boorstein W. R., Ziegelhoffer T. & Craig E. A. (1993) *J. Mol. Evol.* 38(1): 1-17.
3. Rothman J. **(**1989) *Cell 59:* 591 -601.
4. DeLuca-Flaherty *et al.* (1990) *Cell 62:* 875-887.
5. Bork P., Sander C. & Valencia A. (1992) *Proc. Nut1 Acad. Sci. USA* 89: 7290-7294.
6. Fink A.L. (1999) *Physiol. Rev.* 79**:** 425-449.
7. Hung T.H., *et al.* (2001) *Am J Pathol.* 159: 1031-1043.
8. Locke M. (2000) *Cell Stress & Chaperones* 5: 45-51.
9. Ianaro A., *et al.* (2001) *FEBS Lett.* 508: 61-66.
10. Trentin G.A. *et al.* (2001) *J Biol Chem.* 276: 13087-13095.

Certificate of Analysis

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A 1:10,000 dilution of SPC-103 was sufficient for detection of hsp70 in 20µg of HeLa cell lysate by ECL immunoblot analysis.

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Material Safety Data Sheet

Anti-Hsp70 (Polyclonal Antibody) SPC-103

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
None		

Physical Data

This product consists of whole rabbit serum 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.