

Anti-Hsc70 (Salmon)

Catalog# SPC-303D

Size: 100µL

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

StressMarq

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Product	Rabbit anti-Hsc70 antibody; polyclonal
Clone	N/A
Immunogen	Synthetic peptide conjugated to KLH. The peptide target is specific to the Hsc70 of salmonid fish.
Host and Subclass	Rabbit
Cited Applications	WB
Specificity	The antibody detects Hsc70, but not Hsp70. There is a one amino acid difference in the target between fish and other animals, but the antibody will detect Hsc70 from other animal species.
Species cross-reactivity	Salmon. There is predicted reactivity to Bovine, Human, Mouse, Rat and Zebrafish.
Format	Lyophilized Rabbit Serum (For reconstitution add 100uL of sterile water)
Working dilution	Recommended dilution is 1:50,000 for ECL Advance, and 1:5,000 for ECL
Storage and stability	-20°C; 1 year+; shipped on cold packs or ambient

Scientific Background

Hsp70 genes encode abundant heat-inducible 70-kDa hsp (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). 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 (2). 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 (3). The structure of this ATP binding domain displays multiple features of nucleotide binding proteins (4).

When cells are subjected to metabolic stress (e.g., heat shock) a member of the hsp 70 family, hsp 70 (hsp72), is expressed; hsp 70 is highly related to hsc70 (>90% sequence identity). Constitutively expressed hsc70 rapidly forms a stable complex with the highly inducible hsp70 in cells following heat shock. The interaction of hsc70 with hsp 70 is regulated by ATP. These two heat shock proteins move together in the cell experiencing stress. Furthermore, research on hsc70 has implicated it with a role in facilitating the recovery of centrosomal structure and function after heat shock (5).

Selected References

1. Boorstein W.R., Ziegelhoffer T., and Craig E.A. (1993) *J. Mol. Evol.* 38(1): 1-17.
2. Rothman J. (1989), *Cell* 59: 591-601.
3. DeLuca-Flaherty *et al.* (1990) *Cell* 62: 875-887.
4. Bork P., Sander C., and Valencia A. (1992) *Proc. Natl Acad. Sci. USA* 89: 7290-7294.
5. Brown C.L. *et al.* (1996) *J. Biol. Chem.* 271(2): 833-840.

Material Safety Data Sheet

Anti-HSC70 (Polyclonal Antibody) SPC-303

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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.

<u>Known Hazardous Components</u>	<u>CAS Number</u>	<u>Percent</u>
None		

Physical Data

This product consists of 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.

Authorized: StressMarq Biosciences Inc.
Creation Date: 12/12/2008