

Anti-Hsp70 (Fish)

Catalog# SPC-313D

Size: 100µL

PO Box 30244, Suite 405,
3989 Quadra Street,
Victoria, BC V8X 5E1, Canada

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

StressMarq

Biosciences Inc.

Orders ● sales@stressmarq.com
Tel: ● +1 250 294 9065
Fax: ● +1 250 294 9025
Email ● info@stressmarq.com
Web ● www.stressmarq.com

Product	Rabbit anti-Hsp70 antibody; polyclonal
Clone	N/A
Immunogen	Synthetic peptide conjugated to KLH. Peptide sequence specific to C-terminal part of salmonid Hsp70. The target is not present in any other Hsp70 proteins.
Host and Subclass	Rabbit
Cited Applications	WB
Specificity	Detects ~70kDa
Species cross-reactivity	Rainbow trout. This antibody is specific for salmonid Hsp70 (tested on salmon and brooktrout). It does not cross-react with Hsc70. It does not detect Hsp70 in other species.
Format	Lyophilized Rabbit Serum. (For reconstitution add 100uL of sterile water).
Working dilution	Recommended dilution for WB 1:5000
Storage and stability	-20°C; 1 year+; shipped on cold packs or ambient

Scientific Background

Hsp70 genes encode abundant heat-inducible 70-kDa hsp70s (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 ATPbinding 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 implicates 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.

Certificate of Analysis

0.2ul/ml of SPC-313 was sufficient for detection of Hsp70 in 20ug of heat shocked (25°C) rainbow trout cytoplasmic fraction lysate by colorimetric immunoblot analysis using Goat anti-rabbit IgG:HRP as the secondary antibody.

Material Safety Data Sheet

Anti-HSP70 (Polyclonal Antibody) SPC-313

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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.
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