

# Anti-Hsc70 (Hsp73)

Catalog# SMC-151A/B

Size: 50/200µg

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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	Mouse anti-hsc70 antibody; monoclonal
Clone	1F2-H5/ IgG2a Kappa
Immunogen	Human Hsc70
Host and Subclass	Mouse monoclonal
Cited Applications	WB, ELISA, IP, IHC
Specificity	Detects 73kDa protein corresponding to the molecular mass of hsc70 on SDS PAGE immunoblots. Does not cross react with hsp70.
Species cross-reactivity	Human, Mouse, Rat. Other species not yet tested.
Format	PBS pH7.4, in 50% glycerol and 0.09% sodium azide.
Concentration and Working Dilution	1mg/mL; 1:1000 for WB
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 (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 ATP

binding domain displays multiple features of nucleotide binding proteins (5).

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 (6).

### Selected References

1. Brown C.L. *et al.* (1993) *J. Cell Biol.*, 120 (5): 1101-1112
2. Boorstein W.R., Ziegelhoffer T., and 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., and Valencia A. (1992) *Proc. Natl Acad. Sci. USA* 89: 7290-7294.
6. Brown C.L. *et al.* (1996) *J. Biol. Chem.* 271(2): 833-840

### Certificate of Analysis

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**1 µg/mL of SMC-151 was sufficient for detection of Hsc70 in 10µg of HeLa lysate by colorimetric immunoblot analysis using Goat anti-mouse IgG:HRP as the secondary antibody.**  
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# Material Safety Data Sheet

## Anti-Hsc70 (Monoclonal Antibody) SMC-151

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.

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### 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		

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### Physical Data

This product consists of mouse immunoglobulin shipped on gel packs. The physical properties of this product have not been investigated thoroughly.

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### Fire and Explosion Hazard and Reactivity Data

NOT APPLICABLE

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### 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.

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### Preventative Measures

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

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### 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.

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### 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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