

Anti-HSF1

Catalog# SMC-118C/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

StressMarq

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Product	Rat HSF1 antibody; monoclonal
Clone	10H8
Immunogen	Purified recombinant HSF1 protein
Host and Subclass	Rat immunoglobulin, IgG ₁
Applications	WB(1), IP, ICC(1), ELISA(1), Gel Mobility Shift Assay (1)
Specificity	Detects an ~85kDa protein in unstressed cell lysates, and an ~95kDa protein in heat shocked cell lysates, corresponding to the molecular mass of inactive and active forms of HSF1 on SDS-PAGE immunoblots
Species cross-reactivity	Human, Mouse, Rat, Bovine, Guinea Pig, Hamster, Monkey, Rabbit
Format	Rat Immunoglobulin in PBS, pH 7.4, 0.09% sodium azide in 50% glycerol.
Concentration and working dilution	1mg/ml; 1µg/ml was sufficient for detection of HSF1 by ECL immunoblot in 20µg of HeLa lysate.
Storage and stability	-20°C; 1 year+; shipped on cold packs or ambient

Scientific Background

HSF1, or heat shock factor 1, belongs to a family of Heat Shock transcription factors that activate the transcription of genes encoding products required for protein folding, processing, targeting, degradation, and function (2). The up-regulation of HSP (heat shock proteins) expression by stressors is achieved at the level of transcription through a heat shock element (HSE) and a transcription factor (HSF) (3, 4, 5).

Most HSFs have highly conserved amino acid sequences. On all HSFs there is a DNA binding domain at the N-terminus. Hydrophobic repeats located adjacent to this binding domain are essential for the formation of active trimers. Towards the C-terminal region another short hydrophobic repeat exists, and is thought to be necessary for suppression of trimerization (6).

There are two main heat shock factors, 1 and 2. Mouse HSF1 exists as two isoforms, however in higher eukaryotes HSF1 is found in a diffuse cytoplasmic and nuclear distribution in un-stressed cells. Once exposed to a multitude of stressors, it localizes to discrete nuclear granules within seconds. As it recovers from stress, HSF1 dissipates from these granules to a diffuse nucleoplasmic distribution. HSF2 on the other hand is similar to mouse HSF1, as it exists as two isoforms, the alpha form being more transcriptionally active than the smaller beta form (7, 8). Various experiments have suggested that HSF2 may have roles in differentiation and development (9, 10, 11).

Selected References

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2. Morano K.A. and Thiele D.J. (1999). *Gene Expression* 7 (6): 271-82.
3. Tanaka KI et al. (2007). JBC Papers Online Manuscript M704081200.
4. Morimoto R. I. (1998) *Genes Dev* 12: 3788-3796.
5. McMillan D. R., Xiao X., Shao L., Graves K., and Benjamin I. J. (1998) *J Bio Chem* 273: 7523-7528.
6. Jolly C., Usson Y. and Morimoto R.I. (1999) *Proc. Natl. Acad. Sci. USA* 96 (12): 6769- 6774.
7. Fiorenza M.T., Farkas T., Dissing M., Kolding D. and Zimarino V. (1995) *Nucleic Acids Res.* 23 (3):467-474.
8. Goodson M.L., Park-Sarge O.K. and Sarge K.D. (1995) *Mol. Cell. Biol.* 15(10): 5288-5293.
9. Rallu M., et al. (1997) *Proc. Natl. Acad. Sci. USA* 94(6): 2392-2397.
10. Sarge K.D., et al. (1994) *Biol. Reprod.* 50(6): 1334-1343.
11. Murphy S.P., Gorzowski J.J., Sarge K.D. and Phillips B. (1994) *Mol. Cell. Biol.* 14(8):5309-5317.

Certificate of Analysis

1 µg/mL of SMC-118 was sufficient for detection of HSF1 in 20µg of heat shocked HeLa cell lysate by ECL immunoblot analysis using Goat anti-rat IgG: HRP as the secondary antibody.

Material Safety Data Sheet

Anti-HSF1 (Monoclonal Antibody) SMC-118

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.

<u>Known Hazardous Components</u>	<u>CAS Number</u>	<u>Percent</u>
Sodium Azide	26628-22-8	0.09

Physical Data

This product consists of rat 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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