

HSF1 Antibody
HSF1 Antibody, Clone 4B4
Catalog # ASM10309

Specification

HSF1 Antibody - Product Information

Application	IHC, WB
Primary Accession	P38532
Other Accession	NP_032322.1
Host	Rat
Isotype	IgG1
Reactivity	Human, Mouse, Rat, Rabbit, Hamster, Monkey, Bovine, Guinea Pig
Clonality	Monoclonal

Description

Rat Anti-Mouse HSF1 Monoclonal IgG1

Target/Specificity

Detects ~85kDa (unstressed cell lysates) and ~95kDa (heat shocked cell lysates).

Other Names

HSTF1 Antibody, Heat shock factor protein 1 Antibody, Heat shock transcription factor 1 Antibody, HSF 1 Antibody

Immunogen

Purified recombinant mouse HSF1 protein, epitope mapping to amino acids 425-439

Purification

Protein G Purified

Storage **-20°C**

Storage Buffer

PBS pH 7.4, 50% glycerol, 0.1% sodium azide

Shipping Temperature **Blue Ice or 4°C**

Certificate of Analysis

1 µg/ml of SMC-477 was sufficient for detection of HSF1 in 20 µg of heat shocked HeLa cell lysate by colorimetric immunoblot analysis using Rabbit anti-rat IgG: AP as the secondary antibody.

Cellular Localization

Cytoplasm | Nucleus

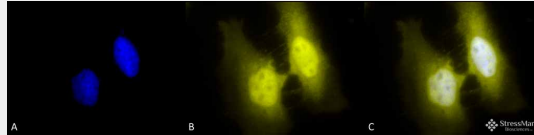
HSF1 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

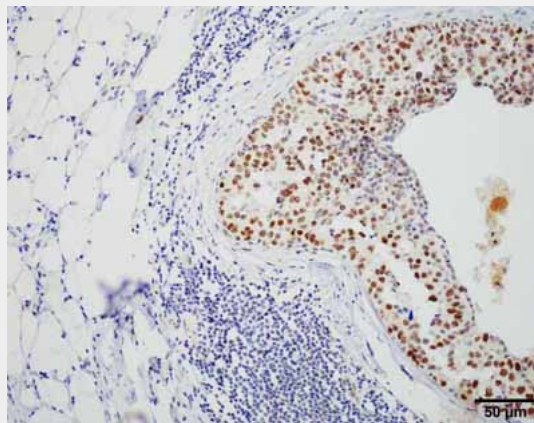
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)

- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

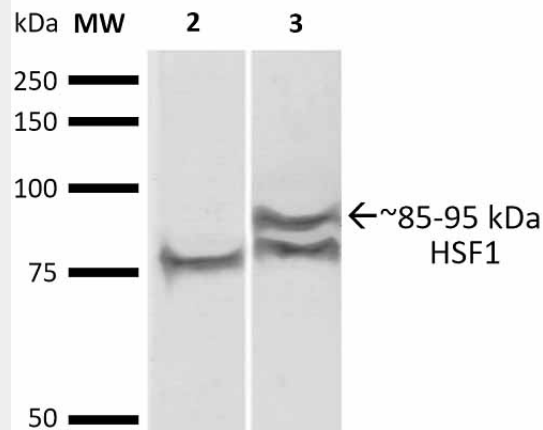
HSF1 Antibody - Images



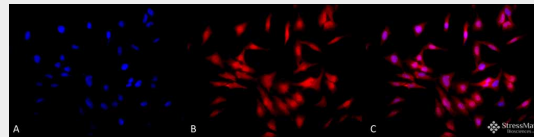
Immunocytochemistry/Immunofluorescence analysis using Rat Anti-HSF1 Monoclonal Antibody, Clone 4B4 (ASM10309). Tissue: Heat Shocked HeLa Cells. Species: Human. Fixation: 2% Formaldehyde for 20 min at RT. Primary Antibody: Rat Anti-HSF1 Monoclonal Antibody (ASM10309) at 1:100 for 12 hours at 4°C. Secondary Antibody: R-PE Goat Anti-Rat (yellow) at 1:200 for 2 hours at RT. Counterstain: DAPI (blue) nuclear stain at 1:40000 for 2 hours at RT. Localization: Cytoplasm. Localizes to the nucleus upon activation. Magnification: 100x. (A) DAPI (blue) nuclear stain. (B) Anti-HSF1 Antibody. (C) Composite. Heat Shocked at 42°C for 1h.



Immunohistochemistry analysis using Rat Anti-HSF1 Monoclonal Antibody, Clone 4B4 (ASM10309). Tissue: Breast carcinoma. Species: Human. Fixation: 10% Formalin Solution for 20 hours at RT. Primary Antibody: Rat Anti-HSF1 Monoclonal Antibody (ASM10309) at 1:2000 for 40 min. Secondary Antibody: Dako labeled Polymer HRP Anti-rat IgG, DAB Chromogen (brown) (Dako Envision+ System) for 30 min at RT. Counterstain: Mayer's Hematoxylin (purple/blue) nuclear stain for 1 minute at RT. Localization: Nuclear. Magnification: 100X. Courtesy of: Dr. Sandro Santagata, Harvard Medical School.



Western Blot analysis of Human A431 and HEK293 cell lysates showing detection of ~85 and 95 kDa HSF1 protein using Rat Anti-HSF1 Monoclonal Antibody, Clone 4B4 (ASM10309). Lane 1: Molecular Weight Ladder. Lane 2: A431 cell lysates. Lane 3: HEK293 cell lysates. Load: 20 μ g. Block: 5% milk + TBST 1hr at RT. Primary Antibody: Rat Anti-HSF1 Monoclonal Antibody (ASM10309) at 1:1000 for 60 min at RT. Secondary Antibody: Goat Anti-Rat: HRP at 1:1000 for 60 min at RT. Color Development: TMB solution for 5 min at RT. Predicted/Observed Size: ~85 and 95 kDa.



Immunocytochemistry/Immunofluorescence analysis using Rat Anti-HSF1 Monoclonal Antibody, Clone 4B4 (ASM10309). Tissue: Heat Shocked HeLa Cells. Species: Human. Fixation: 2% Formaldehyde for 20 min at RT. Primary Antibody: Rat Anti-HSF1 Monoclonal Antibody (ASM10309) at 1:100 for 12 hours at 4°C. Secondary Antibody: APC Goat Anti-Rat (red) at 1:200 for 2 hours at RT. Counterstain: DAPI (blue) nuclear stain at 1:40000 for 2 hours at RT. Localization: Cytoplasm. Localizes to the nucleus upon activation. Magnification: 20x. (A) DAPI (blue) nuclear stain. (B) Anti-HSF1 Antibody. (C) Composite. Heat Shocked at 42°C for 1h.

HSF1 Antibody - 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).

HSF1 Antibody - References

1. Cotto J.J., Fox S.G. and Morimoto R.I. (1997) J. Cell Science 110: 2925-2934.
2. Morano K.A. and Thiele D.J. (1999). Gene Expression 7 (6): 271-82.
3. Tanaka K.I., et al. (2007). JBC Papers Online Manuscript M704081200.
4. Morimoto R. I. (1998) Genes Dev 12: 3788-3796.
5. McMillan D. R., et al. (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., et al. (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.