10320 Camino Santa Fe, Suite G
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Tel: 858.875.1900 Fax: 858.875.1999

HSF1 Antibody
HSF1 Antibody, Clone 10H8
Catalog # ASM10028

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**
Format	**APC**

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, with epitope mapping to amino acids 378-395

Purification
Protein G Purified

Storage	**-20ºC**

Storage Buffer
PBS pH7.4, 50% glycerol, 0.09% sodium azide

Shipping Temperature	**Blue Ice or 4ºC**

Certificate of Analysis
1 µg/ml of SMC-118 was sufficient for detection of HSF1 in 20 µg of heat shocked HeLa cell lysate by ECL immunoblot analysis using Goat anti-rat IgG: HRP 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

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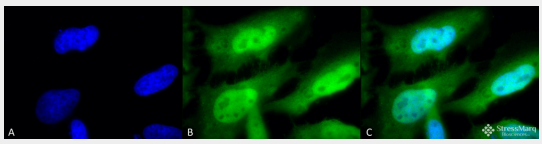
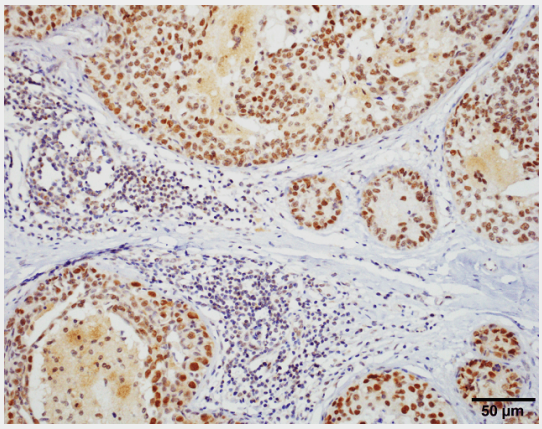
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

HSF1 Antibody - Images



Immunocytochemistry/Immunofluorescence analysis using Rat Anti-HSF1 Monoclonal Antibody, Clone 10H8 (ASM10028). Tissue: Heat Shocked cervical cancer cells (HeLa). Species: Human. Fixation: 2% Formaldehyde for 20 min at RT. Primary Antibody: Rat Anti-HSF1 Monoclonal Antibody (ASM10028) at 1:100 for 12 hours at 4°C. Secondary Antibody: FITC Goat Anti-Rat (green) at 1:200 for 2 hours at RT. Counterstain: DAPI (blue) nuclear stain at 1:40000 for 2 hours at RT. Localization: Diffuse nuclear and cytoplasmic staining. 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 10H8 (ASM10028). Tissue: Breast carcinoma. Species: Human. Fixation: 10% Formalin Solution for 20 hours at RT. Primary Antibody: Rat Anti-HSF1 Monoclonal Antibody (ASM10028) at 1:1000 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.

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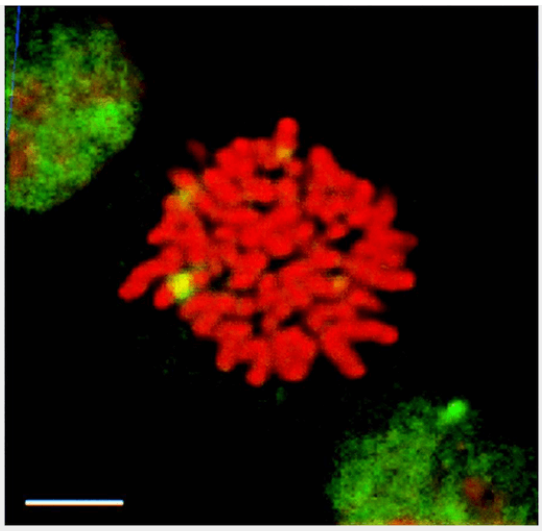
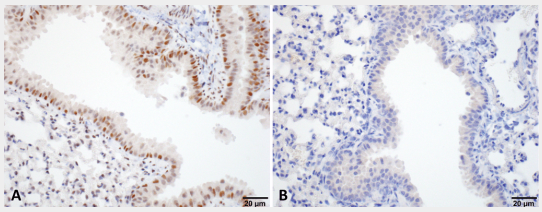
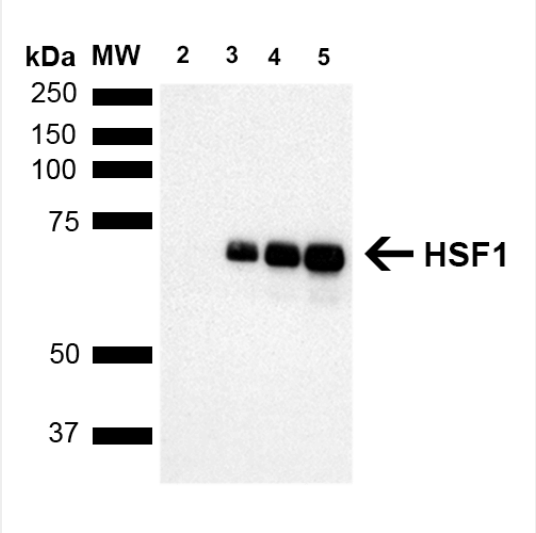


Immunocytochemistry/Immunofluorescence analysis using Rat Anti-HSF1 Monoclonal Antibody, Clone 10H8 (ASM10028). Tissue: Heat Shocked mitotic HeLa cells. Species: Human. Primary Antibody: Rat Anti-HSF1 Monoclonal Antibody (ASM10028) at 1:1000. HSF1 stained green. Courtesy of: Morimoto Lab, Northwestern University, USA.

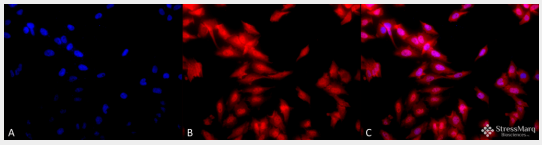


Immunohistochemistry analysis using Rat Anti-HSF1 Monoclonal Antibody, Clone 10H8 (ASM10028). Tissue: Lung. Species: Mouse. Fixation: 10% Formalin Solution for 20 hours at RT. Primary Antibody: Rat Anti-HSF1 Monoclonal Antibody (ASM10028) at 1:1000 for 40 min. Secondary Antibody: Dako labeled Polymer 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. (A) HSF Wildtype. (B) HSF null. Courtesy of: Dr. Sandro Santagata, Harvard Medical School.



Western Blot analysis of Human Breast adenocarcinoma cell line (MCF7) showing detection of ~65 kDa HSF1 protein using Rat Anti-HSF1 Monoclonal Antibody, Clone 10H8 (ASM10028). Lane 1: MW ladder. Lane 2: HSF1 null lysate prepared from mouse embryonic fibroblasts. Lane 3: MCF7

lysate (5 µg). Lane 4: MCF7 lysate (10 µg). Lane 5: MCF7 lysate (20 µg). Block: 1.5% BSA for 30 minutes at RT. Primary Antibody: Rat Anti-HSF1 Monoclonal Antibody (ASM10028) at 1:1000 for 2 hours at RT. Secondary Antibody: Goat Anti-Rat IgG: HRP for 1 hour at RT. Predicted/Observed Size: ~65 kDa. Courtesy of: Dr. Sandro Santagata, Harvard Medical School.



Immunocytochemistry/Immunofluorescence analysis using Rat Anti-HSF1 Monoclonal Antibody, Clone 10H8 (ASM10028). Tissue: Heat Shocked cervical cancer cells (HeLa). Species: Human. Fixation: 2% Formaldehyde for 20 min at RT. Primary Antibody: Rat Anti-HSF1 Monoclonal Antibody (ASM10028) 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: Diffuse nuclear and cytoplasmic staining. 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 nuceloplasmic 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 HFS2 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 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.