

HSF1 Monoclonal Antibody (10H8)

Product Specifications

Catalog Number:	SPA-950
Source:	Rat
Isotype:	IgG ₁
Species Reactivity:	Human, monkey, rabbit, rat and mouse Other species not tested.
Applications:	WB ¹ : 1:1000 (Colorimetric) Other applications not tested. <small>The optimal dilution for a specific application must be determined by the investigator</small>
Predicted M.W.:	~69 kDa
Concentration:	See product label
Purification:	Protein G Affinity
Format:	PBS, pH 7.2, 0.09% azide, 50% glycerol
Storage:	Store at -20°C <small>Shipping conditions may differ from the recommended storage temperature</small>
Immunogen:	Purified recombinant mouse HSF1 protein ¹
Related Products:	
LYC-HL101	HeLa Cell Lysate (heat shocked)
LYC-HL102	HeLa Cell Lysate (heat shocked, no recovery time)
LYC-3T100	3T3 Cell Lysate
LYC-PC100	PC-12 Cell Lysate
SPP-900	HSF1 Recombinant Protein
SPA-901	HSF1 Polyclonal Antibody
SPA-960	HSF2 Monoclonal Antibody (3E2)

Background:

HSF1 belongs to a family of Heat Shock transcription Factors (HSFs) that bind to highly conserved heat shock elements (HSEs) in the promoter regions of heat shock genes and regulate the expression of heat shock proteins (Hsps). Multiple HSFs exist in higher eukaryotes whereas yeast and Drosophila have only a single HSF. HSF1, HSF2, HSF3 have been reported in chicken, HSF1 and HSF2 in mouse and HSF1, HSF2, and HSF4 in human. Most HSFs have several common functional motifs whose amino acid sequences are highly conserved. At the N-terminus of all HSFs there is a DNA binding domain essential for binding to the HSE. Hydrophobic repeats located adjacent to the DNA binding domain are essential for the formation of active trimers which enable all HSFs to specifically bind to DNA. Another short hydrophobic repeat located towards the C-terminal region of most HSFs is thought to be necessary for suppression of trimerization except in the case of yeast HSF and human HSF4. The mouse HSF1 exists as two isoforms which arise from alternative splicing of the HSF1 pre-mRNA. In higher eukaryotes, HSF1 is predominantly found in a diffuse cytoplasmic and nuclear distribution in unstressed cells. On exposure to heat shock and other stresses, HSF1 localizes within seconds to discrete nuclear granules and on recovery from stress, HSF1 rapidly dissipates from the stress granules to a diffuse nucleoplasmic distribution². Similar to HSF1, murine HSF2 also exist as two isoforms, the smaller HSF2-β isoform and the longer HSF2-α which has been shown to be more transcriptionally active^{3,4}. Constitutive binding of HSF2 to HSE has been found with spermatogenic cells post-implantation embryos and embryonal carcinoma cells in mouse and these observations suggest that HSF2 may have roles in differentiation and development⁵⁻⁷.

References:

1. Cotto, J.J., Fox, S.G. and Morimoto, R.I. (1997) J Cell Science **110**, 2925-2934.
2. Jolly, C., Usson, Y and Morimoto, R.I. (1999) Proc Natl Acad Sci USA **96**, 6769-6774.
3. Fiorenza, M.T., et al. (1995) Nucleic Acids Res. **23**, 467-474.
4. Goodson, M.L., Park-Sarge, O.K. and Sarge, K.D. (1995) Mol Cell Biol. **15**, 5288-5293.
5. Rallu, M., et al. (1997) Proc Natl Acad Sci USA **94**, 2392-2397.
6. Sarge, K.D., et al. (1994) Biol Reprod. **50**, 1334-1343.
7. Murphy, S.P., et al. (1994) Mol Cell Biol. **14**, 5309-5317.

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