

HSF4 (45): sc-135941

BACKGROUND

Prokaryotic and eukaryotic cells respond to thermal and chemical stress by inducing a group of genes collectively designated heat shock genes. In eukaryotes, this gene expression is regulated primarily at the transcription level. Heat shock transcription factors (HSF, also designated HSTF) 1 and 2 are involved in this regulation. HSF1 and HSF2 are upregulated by estrogen, at both the mRNA and protein level. HSF1 is normally found as a monomer, whose transcriptional activity is repressed by constitutive phosphorylation. Upon activation, HSF1 forms trimers, gains DNA binding activity and is translocated to the nucleus. HSF2 activity is associated with differentiation and development, and, like HSF1, binds DNA as a trimer. HSF4 exists as two splice variants and is expressed in heart, brain and skeletal muscle as a homotrimer. HSF4a does not contain a DNA-binding domain and inhibits the formation of HSF1 nuclear bodies, thus repressing HSF1 mediated transcription. HSF4b does contain a DNA-binding domain and colocalizes with HSF1 nuclear bodies after heat shock.

REFERENCES

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3. Wyman, C., Grotkopp, E., Bustamante, C. and Nelson, H.C. 1995. Determination of heat-shock transcription factor 2 stoichiometry at looped DNA complexes using scanning force microscopy. *EMBO J.* 14: 117-123.
4. Nakai, A., Tanabe, M., Kawazoe, Y., Inazawa, J., Morimoto, R.I. and Nagata, K. 1997. HSF4, a new member of the human heat shock factor family which lacks properties of a transcriptional activator. *Mol. Cell Biol.* 17: 469-481.
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6. Zhang, Y., Frejtag, W., Dai, R. and Mivechi, N.F. 2001. Heat shock factor 4 (HSF4a) is a repressor of HSF1 mediated transcription. *J. Cell. Biochem.* 82: 692-703.

CHROMOSOMAL LOCATION

Genetic locus: HSF4 (human) mapping to 16q22.1; Hsf4 (mouse) mapping to 8 D3.

SOURCE

HSF4 (45) is a mouse monoclonal antibody raised against amino acids 269-409 of HSF4 of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

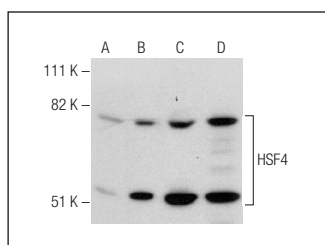
HSF4 (45) is recommended for detection of HSF4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); not recommended for immunoprecipitation.

Suitable for use as control antibody for HSF4 siRNA (h): sc-37924, HSF4 siRNA (m): sc-37925, HSF4 shRNA Plasmid (h): sc-37924-SH, HSF4 shRNA Plasmid (m): sc-37925-SH, HSF4 shRNA (h) Lentiviral Particles: sc-37924-V and HSF4 shRNA (m) Lentiviral Particles: sc-37925-V.

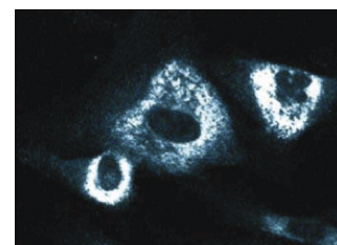
Molecular Weight of HSF4: 55 kDa.

Positive Controls: HSF4 (h2): 293 Lysate: sc-173583, HeLa whole cell lysate: sc-2200 or rat heart extract: sc-2393.

DATA



HSF4 (45): sc-135941. Western blot analysis of HSF4 expression in non-transfected 293: sc-110760 (A), human HSF4 transfected 293: sc-173583 (B) and HeLa (C) whole cell lysates and rat heart tissue extract (D).



HSF4 (45): sc-135941. Immunofluorescence staining of human endothelial cells showing cytoplasmic localization.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures. Not for resale.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.