

HSF1 (C-5): sc-17756

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 1 and 2 (HSF1 and HSF2), also designated HSTF1 and HSTF2, are involved in this regulation. HSF1 and HSF2 are up-regulated 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. Both HSF1 and HSF2 are known to be induced by proteasome inhibitors of the ubiquitin pathway.

CHROMOSOMAL LOCATION

Genetic locus: HSF1 (human) mapping to 8q24.3; Hsf1 (mouse) mapping to 15 D3.

SOURCE

HSF1 (C-5) is a mouse monoclonal antibody raised against amino acids 219-529 of HSF1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-17756 X, 200 µg/0.1 ml.

APPLICATIONS

HSF1 (C-5) is recommended for detection of HSF1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:500), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for HSF1 siRNA (h): sc-35611, HSF1 siRNA (m): sc-35612, HSF1 siRNA (r): sc-270440, HSF1 shRNA Plasmid (h): sc-35611-SH, HSF1 shRNA Plasmid (m): sc-35612-SH, HSF1 shRNA Plasmid (r): sc-270440-SH, HSF1 shRNA (h) Lentiviral Particles: sc-35611-V, HSF1 shRNA (m) Lentiviral Particles: sc-35612-V and HSF1 shRNA (r) Lentiviral Particles: sc-270440-V.

HSF1 (C-5) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of HSF1: 89-90 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, MCF7 whole cell lysate: sc-2206 or HeLa whole cell lysate: sc-2200.

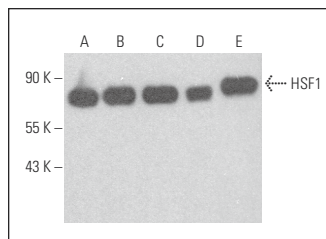
STORAGE

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

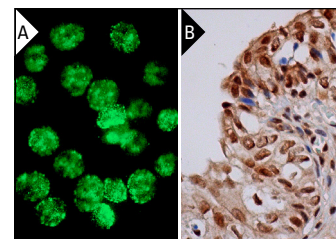
RESEARCH USE

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

DATA



HSF1 (C-5): sc-17756. Western blot analysis of HSF1 expression in HeLa (A), K-562 (B), MDA-MB-231 (C), A2058 (D) and MCF7 (E) whole cell lysates.



HSF1 (C-5): sc-17756. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear staining (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing nuclear and cytoplasmic staining of urothelial cells (B).

SELECT PRODUCT CITATIONS

- Loison, F., et al. 2006. Up-regulation of the clusterin gene after proteotoxic stress: implication of HSF1-HSF2 heterocomplexes. *Biochem. J.* 395: 223-231.
- Jung, M.K., et al. 2013. Expression of taurine transporter (TauT) is modulated by heat shock factor 1 (HSF1) in motor neurons of ALS. *Mol. Neurobiol.* 47: 699-710.
- Borowiec, A.S., et al. 2016. Cold/menthol TRPM8 receptors initiate the cold-shock response and protect germ cells from cold-shock-induced oxidation. *FASEB J.* 30: 3155-3170.
- Wang, H., et al. 2017. Glutamine promotes Hsp70 and inhibits α -synuclein accumulation in pheochromocytoma PC12 cells. *Exp. Ther. Med.* 14: 1253-1259.
- Pastorek, M., et al. 2018. Intrinsic proteotoxic stress levels vary and act as a predictive marker for sensitivity of cancer cells to Hsp90 inhibition. *PLoS ONE* 13: e0202758.
- Poque, E., et al. 2021. Effects of radiofrequency field exposure on proteotoxic-induced and heat-induced HSF1 response in live cells using the bioluminescence resonance energy transfer technique. *Cell Stress Chaperones* 26: 241-251.
- Lee, Y., et al. 2021. Time-of-day specificity of anticancer drugs may be mediated by circadian regulation of the cell cycle. *Sci. Adv.* 7: eabd2645.
- Gao, K., et al. 2022. p53N236S activates autophagy in response to hypoxic stress induced by DFO. *Genes* 13: 763.
- Simoncik, O., et al. 2024. Direct activation of HSF1 by macromolecular crowding and misfolded proteins. *PLoS ONE* 19: e0312524.



See **HSF1 (E-4): sc-17757** for HSF1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.