SANTA CRUZ BIOTECHNOLOGY, INC.

HSF1 (H-311): sc-9144

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

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. 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 (H-311) is a rabbit polyclonal antibody raised against amino acids 219-529 of HSF1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-9144 X, 200 µg/0.1 ml.

APPLICATIONS

HSF1 (H-311) is recommended for detection of HSF1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

HSF1 (H-311) is also recommended for detection of HSF1 in additional species, including canine and bovine.

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

HSF1 (H-311) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of HSF1: 89-90 kDa.

Positive Controls: PC-12 cell lysate: sc-2250, F9 cell lysate: sc-2245 or HeLa whole cell lysate: sc-2200.

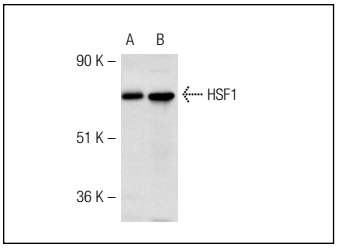
STORAGE

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

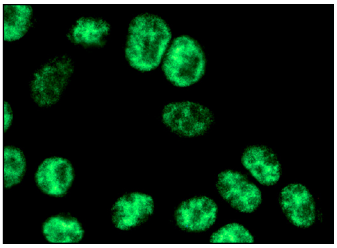
RESEARCH USE

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

DATA



HSF1 (H-311): sc-9144. Western blot analysis of HSF1 expression in PC-12 (**A**) and F9 (**B**) whole cell lysates.



HSF1 (H-311): sc-9144. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Trinklein, N.D., et al. 2004. Transcriptional regulation and binding of heat shock factor 1 and heat shock factor 2 to 32 human heat shock genes during thermal stress and differentiation. Cell Stress Chaperones 9: 21-28.
2. Morrison, A.L., et al. 2006. Glutamine's protection against cellular injury is dependent on heat shock factor-1. Am. J. Physiol., Cell Physiol. 290: C1625-C1632.
3. Loison, F., et al. 2006. Up-regulation of the clusterin gene after proteotoxic stress: implication of HSF1-HSF2 heterocomplexes. Biochem. J. 395: 223-231.
4. Qiao, J.Y., et al. 2008. Novel high-throughput profiling of human transcription factors and its use for systematic pathway mapping. J. Proteome Res. 7: 2769-2779.
5. Shimizu, N., et al. 2008. Tissue- and context-dependent modulation of hormonal sensitivity of glucocorticoid-responsive genes by hexamethylene bisacetamide-inducible protein 1. Mol. Endocrinol. 22: 2609-2623.
6. Sharma, R., et al. 2010. Role of lipid peroxidation in cellular responses to D,L-sulforaphane, a promising cancer chemopreventive agent. Biochemistry 49: 3191-3202.
7. Rossi, A., et al. 2010. AIRAP, a new human heat shock gene regulated by heat shock factor 1. J. Biol. Chem. 285: 13607-13615.
8. Wicks, K., et al. 2011. Transcriptional repression and DNA looping associated with a novel regulatory element in the final exon of the lymphotoxin-β gene. Genes Immun. 12: 126-135.