SANTA CRUZ BIOTECHNOLOGY, INC.

HSF1 (E-4): sc-17757

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.

REFERENCES

1. Tanguay, R.M. 1988. Transcriptional activation of heat shock genes in eukaryotes. Biochem. Cell Biol. 66: 584-593.
2. Yang, X., et al. 1995. Estrogen dependent expression of heat shock transcription factor: implications for uterine synthesis of heat shock proteins. J. Steroid Biochem. Mol. Biol. 52: 415-419.

CHROMOSOMAL LOCATION

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

SOURCE

HSF1 (E-4) is a mouse monoclonal antibody raised against amino acids 219-529 of heat shock transmission factor 1 (HSF1) of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 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-17757 X, 200 µg/0.1 ml.

HSF1 (E-4) is available conjugated to agarose (sc-17757 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-17757 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-17757 PE), fluorescein (sc-17757 FITC), Alexa Fluor® 488 (sc-17757 AF488), Alexa Fluor® 546 (sc-17757 AF546), Alexa Fluor® 594 (sc-17757 AF594) or Alexa Fluor® 647 (sc-17757 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-17757 AF680) or Alexa Fluor® 790 (sc-17757 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

PROTOCOLS

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

APPLICATIONS

HSF1 (E-4) 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).

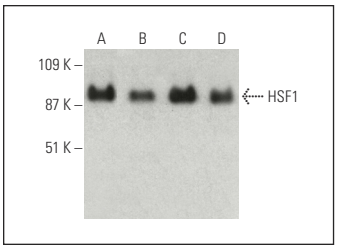
Suitable for use as control antibody for HSF1 siRNA (h): sc-35611, HSF1 siRNA (m): sc-35612, HSF1 siRNA (r): sc-270440, HSF1 shRNA Plasmid (h): sc-35611-SH, HSF1 shRNA Plasmid (m): sc-35612-SH, HSF1 shRNA Plasmid (r): sc-270440-SH, HSF1 shRNA (h) Lentiviral Particles: sc-35611-V, HSF1 shRNA (m) Lentiviral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

HSF1 (E-4) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

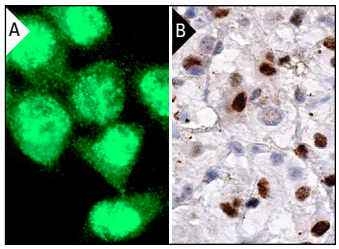
Molecular Weight of HSF1: 89-90 kDa.

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

DATA



HSF1 (E-4) HRP: sc-17757 HRP. Direct western blot analysis of HSF1 expression in HeLa (**A**), MCF7 (**B**), MDA-MB-231 (**C**) and K-562 (**D**) whole cell lysates.



HSF1 (E-4): sc-17757. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing nuclear staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Mohan, J., et al. 2006. Caspase-2 triggers Bax-Bak-dependent and -independent cell death in colon cancer cells treated with resveratrol. J. Biol. Chem. 281: 17599-17611.
2. Prince, T., et al. 2018. Dual targeting of HSP70 does not induce the heat shock response and synergistically reduces cell viability in muscle invasive bladder cancer. Oncotarget 9: 32702-32717.
3. Ferreira, J.V., et al. 2019. Exosomes and STUB1/CHIP cooperate to maintain intracellular proteostasis. PLoS ONE 14: e0223790.

RESEARCH USE

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