SANTA CRUZ BIOTECHNOLOGY, INC.

HSF2 (3E2): sc-13517

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.
3. Wyman, C., et al. 1995. Determination of HSF2 stoichiometry at looped DNA complexes using scanning force microscopy. EMBO J. 14: 117-123.
4. Rallu, M., et al. 1997. Function and regulation of HSF2 during mouse embryogenesis. Proc. Natl. Acad. Sci. USA 94: 2392-2397.
5. He, B., et al. 1998. Glycogen synthase kinase 3β and extracellular signal-regulated kinase inactivate HSF1 by facilitating the disappearance of transcriptionally active granules after heat shock. Mol. Cell. Biol. 18: 6624-6633.
6. Kawazoe, Y., et al. 1998. Proteasome inhibition leads to the activation of all members of the heat shock factor family. Eur. J. Biochem. 255: 356-362.

CHROMOSOMAL LOCATION

Genetic locus: HSF2 (human) mapping to 6q22.31; Hsf2 (mouse) mapping to 10 B4.

SOURCE

HSF2 (3E2) is a rat monoclonal antibody raised against recombinant full length mouse HSF2.

PRODUCT

Each vial contains 200 µg IgG_{2a} 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-13517 X, 200 µg/0.1 ml.

STORAGE

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

APPLICATIONS

HSF2 (3E2) is recommended for detection of HSF2 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), 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).

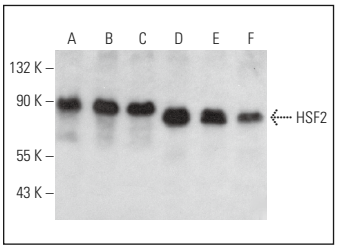
Suitable for use as control antibody for HSF2 siRNA (h): sc-35613, HSF2 siRNA (m): sc-35614, HSF2 shRNA Plasmid (h): sc-35613-SH, HSF2 shRNA Plasmid (m): sc-35614-SH, HSF2 shRNA (h) Lentiviral Particles: sc-35613-V and HSF2 shRNA (m) Lentiviral Particles: sc-35614-V.

HSF2 (3E2) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

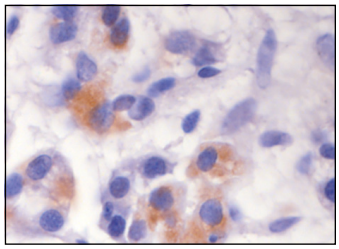
Molecular Weight of HSF2: 79 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211, Hep G2 cell lysate: sc-2227 or Caco-2 cell lysate: sc-2262.

DATA



HSF2 (3E2): sc-13517. Western blot analysis of HSF2 expression in Caco-2 (**A**), Hep G2 (**B**), FHs 74 Int (**C**), NIH/3T3 (**D**), c4 (**E**) and RAW 264.7 (**F**) whole cell lysates.



HSTF2 (3E2): sc-13517. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human pancreas tumor showing cytoplasmic staining.

SELECT PRODUCT CITATIONS

1. Lecomte, S., et al. 2013. Unraveling complex interplay between heat shock factor 1 and 2 splicing isoforms. PLoS ONE 8: e56085.
2. Wang, X., et al. 2020. Febrile temperature critically controls the differentiation and pathogenicity of T helper 17 cells. Immunity 52: 328-341.e5.
3. Villa, E., et al. 2021. mTORC1 stimulates cell growth through SAM synthesis and m^6A mRNA-dependent control of protein synthesis. Mol. Cell 81: 2076-2093.e9.
4. Smith, R.S., et al. 2022. HSF2 cooperates with HSF1 to drive a transcriptional program critical for the malignant state. Sci. Adv. 8: eabj6526.
5. Kim, S.A., et al. 2024. Soluble klotho induces the heat shock factor 1 through EGR1 expression. Biofactors 50: 1039-1053.

RESEARCH USE

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