SANTA CRUZ BIOTECHNOLOGY, INC.

HSF2 (G-11): sc-74529

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; like HSF1, it 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 heat shock transcription factor 1 by facilitating the disappearance of transcriptionally active granules after heat shock. Mol. Cell. Biol. 18: 6624-6633.

CHROMOSOMAL LOCATION

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

SOURCE

HSF2 (G-11) is a mouse monoclonal antibody raised against amino acids 237-536 of HSF2 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-74529 X, 200 µg/0.1 ml.

HSF2 (G-11) is available conjugated to agarose (sc-74529 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74529 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74529 PE), fluorescein (sc-74529 FITC), Alexa Fluor® 488 (sc-74529 AF488), Alexa Fluor® 546 (sc-74529 AF546), Alexa Fluor® 594 (sc-74529 AF594) or Alexa Fluor® 647 (sc-74529 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-74529 AF680) or Alexa Fluor® 790 (sc-74529 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

HSF2 (G-11) is recommended for detection of HSF2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

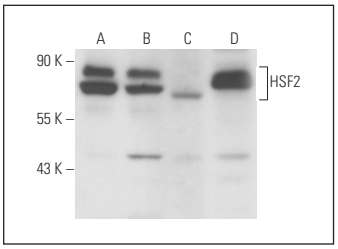
Suitable for use as control antibody for HSF2 siRNA (h): sc-35613, HSF2 siRNA (m): sc-35614, HSF2 shRNA Plasmid (h): sc-35613-SH, HSF2 shRNA Plasmid (m): sc-35614-SH, HSF2 shRNA (h) Lentiviral Particles: sc-35613-V and HSF2 shRNA (m) Lentiviral Particles: sc-35614-V.

HSF2 (G-11) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

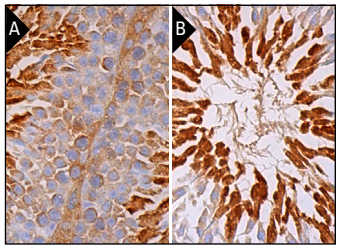
Molecular Weight of HSF2: 79 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, HeLa whole cell lysate: sc-2200 or K-562 whole cell lysate: sc-2203.

DATA



HSF2 (G-11): sc-74529. Western blot analysis of HSF2 expression in heat shock-treated HeLa (**A**), K-562 (**B**), heat shock-treated NIH/3T3 (**C**) and KNRK (**D**) whole cell lysates.



HSF2 (G-11): sc-74529. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse testis tissue showing nuclear and cytoplasmic staining of subset of cells in seminiferous ducts and cytoplasmic staining of Leydig cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded rat testis tissue showing nuclear and cytoplasmic staining of cells in seminiferous ducts and cytoplasmic staining of Leydig cells (**B**).

SELECT PRODUCT CITATIONS

1. 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.
2. Santopolo, S., et al. 2020. The proteostasis guardian HSF1 directs the transcription of its paralog and interactor HSF2 during proteasome dysfunction. Cell. Mol. Life Sci. E-published.

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.