SANTA CRUZ BIOTECHNOLOGY, INC.

HSF4 (A-12): sc-398645

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. HSF4 exists as two splice variants and is expressed in heart, brain and skeletal muscle as a homotrimer. HSF4a does not contain a DNA-binding domain and inhibits the formation of HSF1 nuclear bodies, thus repressing HSF1 mediated transcription. HSF4b does contain a DNA-binding domain and colocalizes with HSF1 nuclear bodies after heat shock.

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 heat-shock transcription factor 2 stoichiometry at looped DNA complexes using scanning force microscopy. EMBO J. 14: 117-123.

CHROMOSOMAL LOCATION

Genetic locus: HSF4 (human) mapping to 16q22.1; Hsf4 (mouse) mapping to 8 D3.

SOURCE

HSF4 (A-12) is a mouse monoclonal antibody raised against amino acids 120-244 mapping within an internal region of HSF4 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.

HSF4 (A-12) is available conjugated to agarose (sc-398645 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398645 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398645 PE), fluorescein (sc-398645 FITC), Alexa Fluor® 488 (sc-398645 AF488), Alexa Fluor® 546 (sc-398645 AF546), Alexa Fluor® 594 (sc-398645 AF594) or Alexa Fluor® 647 (sc-398645 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398645 AF680) or Alexa Fluor® 790 (sc-398645 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

HSF4 (A-12) is recommended for detection of HSF4 isoforms a and b 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for HSF4 siRNA (h): sc-37924, HSF4 siRNA (m): sc-37925, HSF4 shRNA Plasmid (h): sc-37924-SH, HSF4 shRNA Plasmid (m): sc-37925-SH, HSF4 shRNA (h) Lentiviral Particles: sc-37924-V and HSF4 shRNA (m) Lentiviral Particles: sc-37925-V.

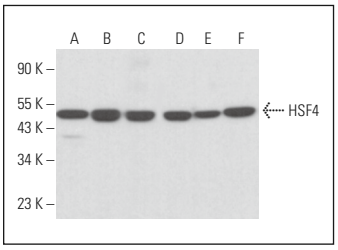
Molecular Weight of HSF4: 55 kDa.

Positive Controls: T98G cell lysate: sc-2294, EOC 20 whole cell lysate: sc-364187 or mouse brain extract: sc-2253.

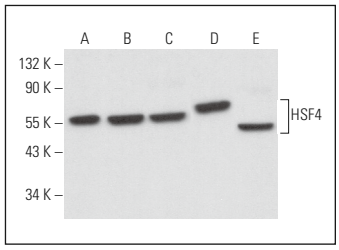
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



HSF4 (A-12): sc-398645. Western blot analysis of HSF4 expression in T98G (**A**) and SH-SY5Y (**B**) whole cell lysates and mouse postnatal brain (**C**), human cerebral cortex (**D**), rat brain (**E**) and human cerebellum (**F**) tissue extracts.



HSF4 (A-12): sc-398645. Western blot analysis of HSF4 expression in EOC 20 (**A**) and C6 (**B**) whole cell lysates and rat cerebellum (**C**), human brain (**D**) and mouse brain (**E**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Li, X., et al. 2023. Loss of SYNCRIP unleashes APOBEC-driven mutagenesis, tumor heterogeneity, and AR-targeted therapy resistance in prostate cancer. Cancer Cell 41: 1427-1449.e12.

STORAGE

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