SANTA CRUZ BIOTECHNOLOGY, INC.

FIR (B-5): sc-398785

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Activation of FUSE, the far-upstream element, is required for the proper expression of the mammalian gene c-Myc. The binding of FBP (FUSE-binding protein) to FUSE is necessary for c-Myc expression. The FBP interacting repressor, FIR, binds to the central DNA-binding domain of FBP and can serve as an overriding negative regulator of c-Myc promoter activity. FIR interacts with the TFIIH complex, which is a multifunctional, multisubunit RNA polymerase II transcription factor that interacts with several DNA-binding transactivators. FIR blocks activator-dependent, but not basal transcription through TFIIH. FIR shares identity with seven in absentia (siah) binding protein 1. FIR is expressed in spleen, thymus, prostate, small intestine, colon, and peripheral blood leukocytes, and with relatively higher levels of expression in testis and ovary.

REFERENCES

1. Avigan, M.I., et al. 1990. A far upstream element stimulates c-Myc expression in undifferentiated leukemia cells. J. Biol. Chem. 265: 18538-18545.
2. Duncan, R.D., et al. 1994. A sequence-specific, single strang binding protein activates the far upstream of c-Myc and defines a new DNA binding motif. Genes Dev. 8: 465-480.
3. Bazar, L., et al. 1995. A transactivator of c-Myc is coordinately regulated with the proto-oncogene during cellular growth. Oncogene 10: 2229-2238.
4. Frit, P., et al. 1999. Transcription factor IIH: a key player in the cellular response to DNA damage. Biochimie 81: 27-38.
5. Haile, D.T. and Parvin, J.D. 1999. Activation of transcription *in vitro* by the BRCA1 carboxyl-terminal domain. J. Biol. Chem. 274: 2113-2117.
6. Liu, J., et al. 2000. The FBP interating repressor targets TFIIH to inhibit activated transcription. Mol. Cell 5: 331-341.

CHROMOSOMAL LOCATION

Genetic locus: PUF60 (human) mapping to 8q24.3; Puf60 (mouse) mapping to 15 D3.

SOURCE

FIR (B-5) is a mouse monoclonal antibody raised against amino acids 260-559 mapping at the C-terminus of FIR of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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

FIR (B-5) is recommended for detection of FIR 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 FIR siRNA (h): sc-105353, FIR siRNA (m): sc-145186, FIR shRNA Plasmid (h): sc-105353-SH, FIR shRNA Plasmid (m): sc-145186-SH, FIR shRNA (h) Lentiviral Particles: sc-105353-V and FIR shRNA (m) Lentiviral Particles: sc-145186-V.

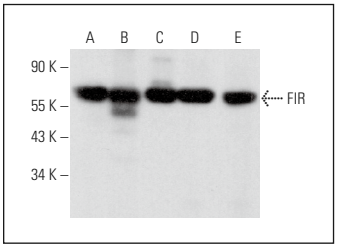
Molecular Weight of FIR: 60 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, RD whole cell lysate: sc-364791 or MCF7 whole cell lysate: sc-2206.

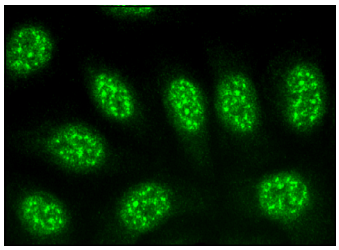
RECOMMENDED SUPPORT REAGENTS

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



FIR (B-5): sc-398785. Western blot analysis of FIR expression in HeLa (**A**), RD (**B**), MCF7 (**C**) and Neuro-2A (**D**) whole cell lysates and rat testis tissue extract (**E**).



FIR (B-5): sc-398785. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Tari, M., et al. 2019. $U2AF^{65}$ assemblies drive sequence-specific splice site recognition. EMBO Rep. 20: e47604.

RESEARCH USE

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