SANTA CRUZ BIOTECHNOLOGY, INC.

FXR1 (B-2): sc-374148

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Fragile X syndrome is the most frequent form of inherited mental retardation and is the result of transcriptional silencing of the FMR1 gene on the X chromosome. The FMR1 gene contains a distinct CpG dinucleotide repeat located in the 5' untranslated region of the gene. In fragile X syndrome this tandem repeat is substantially amplified and subjected to extensive methylation and enhanced transcriptional silencing. The FMR1 protein (or FMRP) is an RNA-binding protein that associates with polyribosomes and is a likely component of a messenger ribonuclear protein (mRNP) particle. It contains several features that are characteristics of RNA-binding proteins, including two hnRNPK homology (KH) domains and an RGG amino acid motif (RGG box). FMR1 localizes to both the nucleus and the cytoplasm and can also interact with two fragile X syndrome related factors, FXR1 and FXR2, which form heterodimers through their N-terminal coiled-coil domains. Since FMR1 contains both a nuclear localization signal and a nuclear export signal it is also implicated in the nucleocytoplasmic transport of mRNAs.

CHROMOSOMAL LOCATION

Genetic locus: FXR1 (human) mapping to 3q26.33; Fxr1 (mouse) mapping to 3 A3.

SOURCE

FXR1 (B-2) is a mouse monoclonal antibody raised against amino acids 552-608 mapping at the C-terminus of FXR1 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.

FXR1 (B-2) is available conjugated to agarose (sc-374148 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-374148 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374148 PE), fluorescein (sc-374148 FITC), Alexa Fluor® 488 (sc-374148 AF488), Alexa Fluor® 546 (sc-374148 AF546), Alexa Fluor® 594 (sc-374148 AF594) or Alexa Fluor® 647 (sc-374148 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374148 AF680) or Alexa Fluor® 790 (sc-374148 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

FXR1 (B-2) is recommended for detection of FXR1 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 FXR1 siRNA (h): sc-35423, FXR1 siRNA (m): sc-35424, FXR1 shRNA Plasmid (h): sc-35423-SH, FXR1 shRNA Plasmid (m): sc-35424-SH, FXR1 shRNA (h) Lentiviral Particles: sc-35423-V and FXR1 shRNA (m) Lentiviral Particles: sc-35424-V.

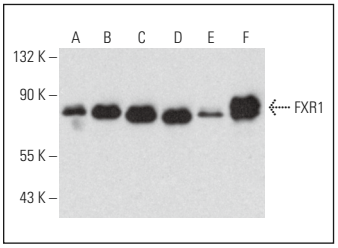
Molecular Weight of FXR1: 78 kDa.

Positive Controls: WI-38 whole cell lysate: sc-364260.

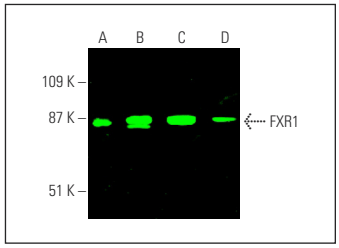
STORAGE

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

DATA



FXR1 (B-2): sc-374148. Western blot analysis of FXR1 expression in WI-38 (**A**), Jurkat (**B**), NIH/3T3 (**C**), c4 (**D**), NRK (**E**) and L8 (**F**) whole cell lysates.



FXR1 (B-2): sc-374148. Near-infrared western blot analysis of FXR1 expression in F9 (**A**), HeLa (**B**), MCF7 (**C**) and RT-4 (**D**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

SELECT PRODUCT CITATIONS

1. Tran, S.S., et al. 2019. Widespread RNA editing dysregulation in brains from autistic individuals. Nat. Neurosci. 22: 25-36.
2. Gonatopoulos-Pournatzis, T., et al. 2020. Autism-misregulated eIF4G microexons control synaptic translation and higher order cognitive functions. Mol. Cell 77: 1176-1192.e16.
3. Marmor-Kollet, H., et al. 2020. Spatiotemporal proteomic analysis of stress granule disassembly using APEX reveals regulation by SUMOylation and links to ALS pathogenesis. Mol. Cell 80: 876-891.e6.
4. George, J., et al. 2021. RNA-binding protein FXR1 drives cMYC translation by recruiting eIF4F complex to the translation start site. Cell Rep. 37: 109934.
5. Gordon, A., et al. 2021. Long-term maturation of human cortical organoids matches key early postnatal transitions. Nat. Neurosci. 24: 331-342.
6. Wolczyk, M., et al. 2023. TIAR and FMRP shape pro-survival nascent proteome of leukemia cells in the bone marrow microenvironment. iScience 26: 106543.
7. Zhou, G.F., et al. 2023. ARL6IP1 mediates small-molecule-induced alleviation of Alzheimer pathology through FXR1-dependent BACE1 translation initiation. Proc. Natl. Acad. Sci. USA 120: e2220148120.

RESEARCH USE

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

PROTOCOLS

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