SANTA CRUZ BIOTECHNOLOGY, INC.

FXR1/2 (Y-19): sc-10552

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, and in the 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. FMR1 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 can also interact with two fragile X syndrome related factors, FXR1 and FXR2, and these proteins form heterodimers through their N-terminal coil-coiled domains. FMR1 localizes to both the nucleus and the cytoplasm, and since it contains both a nuclear localization signal and a nuclear export signal it is also implicated in the nucleo-cytoplasmic transport of mRNAs.

REFERENCES

1. Verkerk, A.J., et al. 1991. Identification of a gene (FMR1) containing a CGG repeat coincident with a breakpoint cluster region exhibiting length variation in fragile X syndrome. Cell 65: 905-914.
2. Pieretti, M., et al. 1991. Absence of expression of the FMR1 gene in fragile X syndrome. Cell 66: 817-822.
3. Matunis, M.J., et al. 1992. Characterization and primary structure of the poly(C)-binding heterogeneous nuclear ribonucleoprotein complex K protein. Mol. Cell. Biol. 12: 164-171.

CHROMOSOMAL LOCATION

Genetic locus: FXR1 (human) mapping to 3q26.33, FXR2 (human) mapping to 17p13.1; Fxr1 (mouse) mapping to 3 A3, Fxr2 (mouse) mapping to 11 B3.

SOURCE

FXR1/2 (Y-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of FXR1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-10552 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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 or our catalog for detailed protocols and support products.

APPLICATIONS

FXR1/2 (Y-19) is recommended for detection of FXR1 and FXR2 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

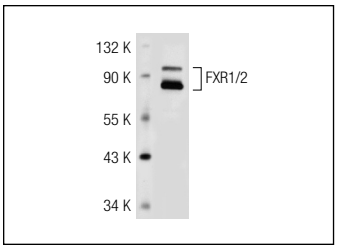
FXR1/2 (Y-19) is also recommended for detection of FXR1 and FXR2 in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of FXR1: 78 kDa.

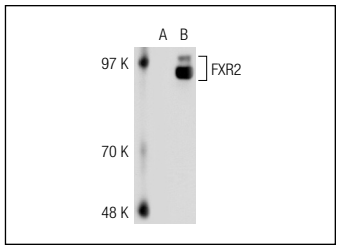
Molecular Weight of FXR2: 90 kDa.

Positive Controls: FXR2 (h2): 293T Lysate: sc-116393, F9 cell lysate: sc-2245 or Jurkat whole cell lysate: sc-2204.

DATA



FXR1/2 (Y-19): sc-10552. Western blot analysis of FXR1/2 expression in F9 whole cell lysate.



FXR1/2 (Y-19): sc-10552. Western blot analysis of FXR2 expression in non-transfected: sc-117752 (**A**) and human FXR2 transfected: sc-116393 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Sung, Y., et al. 2003. The fragile X mental retardation protein FMRP binds elongation factor 1A mRNA and negatively regulates its translation *in vivo*. J. Biol. Chem. 278: 15669-15678.
2. Dolzhanskaya, N., et al. 2006. Methylation regulates the intracellular protein-protein and protein-RNA interactions of FMRP. J. Cell Sci. 119: 1933-1946.

RESEARCH USE

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