SANTA CRUZ BIOTECHNOLOGY, INC.

FMR1 (H-120): sc-28739

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 coiled-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.

CHROMOSOMAL LOCATION

Genetic locus: FMR1 (human) mapping to Xq27.3; Fmr1 (mouse) mapping to X A7.1.

SOURCE

FMR1 (H-120) is a rabbit polyclonal antibody raised against amino acids 513-632 mapping at the C-terminus of FMR1 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.

APPLICATIONS

FMR1 (H-120) is recommended for detection of all FMR1 splice variants 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), 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).

FMR1 (H-120) is also recommended for detection of all FMR1 splice variants in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for FMR1 siRNA (h): sc-36870, FMR1 siRNA (m): sc-36871, FMR1 shRNA Plasmid (h): sc-36870-SH, FMR1 shRNA Plasmid (m): sc-36871-SH, FMR1 shRNA (h) Lentiviral Particles: sc-36870-V and FMR1 shRNA (m) Lentiviral Particles: sc-36871-V.

Molecular Weight of FMR1: 85 kDa.

Positive Controls: T98G cell lysate: sc-2294 or Jurkat whole cell lysate: sc-2204.

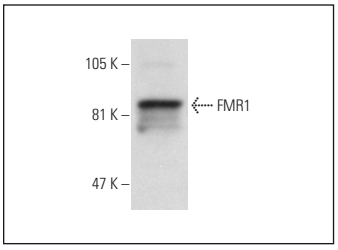
PROTOCOLS

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

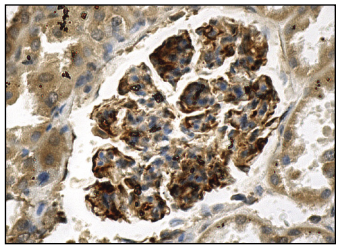
STORAGE

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

DATA



FMR1 (H-120): sc-28739. Western blot analysis of FMR1 expression in T98G whole cell lysate.



FMR1 (H-120): sc-28739. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in glomerulus and tubules.

SELECT PRODUCT CITATIONS

1. Dobson, T., et al. 2008. Identifying intrinsic and extrinsic determinants that regulate internal initiation of translation mediated by the FMR1 5' leader. BMC Mol. Biol. 9: 89.
2. Dictenberg, J.B., et al. 2008. A direct role for FMRP in activity-dependent dendritic mRNA transport links filopodial-spine morphogenesis to fragile X syndrome. Dev. Cell 14: 926-939.
3. Iacoangeli, A., et al. 2008. Reply to bagni: on BC1 RNA and the fragile X mental retardation protein. Proc. Natl. Acad. Sci. USA 105: E29.
4. Iacoangeli, A., et al. 2008. On BC1 RNA and the fragile X mental retardation protein. Proc. Natl. Acad. Sci. USA 105: 734-739.
5. Fähling, M., et al. 2009. Translational regulation of the human achaete-scute homologue-1 by fragile X mental retardation protein. J. Biol. Chem. 284: 4255-4266.
6. Perlewitz, A., et al. 2010. Aldosterone and vasopressin affect α- and γ-ENaC mRNA translation. Nucleic Acids Res. 38: 5746-5760.
7. Dziembowska, M., et al. 2012. Activity-dependent local translation of matrix metalloproteinase-9. J. Neurosci. 32: 14538-14547.
8. Janusz, A., et al. 2013. The fragile X mental retardation protein regulates matrix metalloproteinase 9 mRNA at synapses. J. Neurosci. 33: 18234-18241.

RESEARCH USE

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