SANTA CRUZ BIOTECHNOLOGY, INC.

FMR1 (K-16): sc-10547

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.

REFERENCES

1. Verkerk, A.J., et al. 1991. Identification of a gene (FMR-1) 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 FMR-1 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 ribo-nucleoprotein complex K protein. Mol. Cell. Biol. 12: 164-171.

CHROMOSOMAL LOCATION

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

SOURCE

FMR1 (K-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region 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.

Blocking peptide available for competition studies, sc-10547 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

FMR1 (K-16) is recommended for detection of all FMR splice variants of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

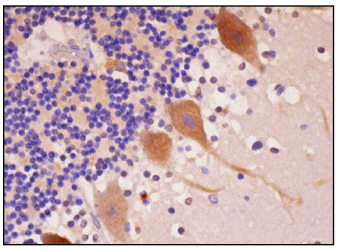
FMR1 (K-16) is also recommended for detection of all FMR splice variants in additional species, including canine, bovine, porcine and avian.

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.

DATA



FMR1 (K-16): sc-10547. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic staining of Purkinje cells, subset of cells in granular layer and subset of cells in molecular layer.

SELECT PRODUCT CITATIONS

1. Johnson, E.M., et al. 2006. Role of Purα in targeting mRNA to sites of translation in hippocampal neuronal dendrites. J. Neurosci. Res. 83: 929-943.

RESEARCH USE

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