

CYFIP1 (T-20): sc-49935

BACKGROUND

Fragile X syndrome is the most frequent form of inherited mental retardation and is a result of transcriptional silencing of the FMR1 gene on the X chromosome. The FMR1 protein (also designated FMRP) is an RNA-binding protein that associates with polyribosomes and is a likely component of a messenger ribonuclear protein (mRNP) particle. FMR1 can also interact with two fragile X syndrome related factors, FXR1 (also designated FXR1P) and FXR2 (also designated FXR2P). These proteins form heterodimers through their N-terminal coiled-coiled domains. CYFIP1 and CYFIP2 (also known as cytoplasmic FMRP interacting proteins 1 and 2, respectively, and as Sra-1 in mouse) both interact with FMR1 but CYFIP2 also reacts with FXR1 and FXR2. CYFIP1 and CYFIP2 bind GTP-bound Rac1 to release FMRP in its active state, which is thought to regulate mRNA translation of neural cytoskeletal proteins. A loss of CYFIP1 and CYFIP2 leads to mutant neurons with defective axonal growth and motor function.

REFERENCES

1. Schenck, A., Bardoni, B., Moro, A., Bagni, C. and Mandel, J.L. 2001. A highly conserved protein family interacting with the fragile X mental retardation protein (FMRP) and displaying selective interactions with FMRP-related proteins FXR1P and FXR2P. *Proc. Natl. Acad. Sci. USA* 98: 8844-8849.
2. Kunda, P., Craig, G., Dominguez, V. and Baum, B. 2003. Abi, Sra-1, and Kette control the stability and localization of SCAR/WAVE to regulate the formation of actin-based protrusions. *Curr. Biol.* 13: 1867-1875.
3. Billuart, P. and Chelly, J. 2003. From fragile X mental retardation protein to Rac1 GTPase: new insights from Fly CYFIP. *Neuron* 38: 843-845.
4. Schenck, A., Bardoni, B., Langmann, C., Harden, N., Mandel, J.L. and Giangrande, A. 2003. CYFIP/Sra-1 controls neuronal connectivity in *Drosophila* and links the Rac1 GTPase pathway to the fragile X protein. *Neuron* 38: 887-898.
5. Schenck, A., Qurashi, A., Carrera, P., Bardoni, B., Diebold, C., Schejter, E., Mandel, J.L. and Giangrande, A. 2004. WAVE/SCAR, a multifunctional complex coordinating different aspects of neuronal connectivity. *Dev. Biol.* 274: 260-270.
6. Brembu, T., Winge, P., Seem, M., Bones, A.M. 2004. NAPP and PIRP encode subunits of a putative wave regulatory protein complex involved in plant cell morphogenesis. *Plant Cell* 16: 2335-2349.
7. Bogdan, S., Grewe, O., Strunk, M., Mertens, A., Klambt, C. 2004. Sra-1 interacts with Kette and Wasp and is required for neuronal and bristle development in *Drosophila*. *Development* 131: 3981-3989.
8. Handa, V., Goldwater, D., Stiles, D., Cam. M., Poy, G., Kumari, D. and Usdin, K. 2005. Long CGG-repeat tracts are toxic to human cells: implications for carriers of fragile X premutation alleles. *FEBS Lett.* 579: 2702-2708.

CHROMOSOMAL LOCATION

Genetic locus: CYFIP1 (human) mapping to 15q11.2; Cyfip1 (mouse) mapping to 7 B5.

SOURCE

CYFIP1 (N-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of CYFIP1 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-49935 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CYFIP1 (T-20) is recommended for detection of CYFIP1 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).

CYFIP1 (T-20) is also recommended for detection of CYFIP1 in additional species, including equine, canine and bovine.

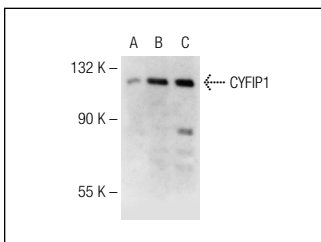
Suitable for use as control antibody for CYFIP1 siRNA (h): sc-60473, CYFIP1 siRNA (m): sc-60474, CYFIP1 shRNA Plasmid (h): sc-60473-SH, CYFIP1 shRNA Plasmid (m): sc-60474-SH, CYFIP1 shRNA (h) Lentiviral Particles: sc-60473-V and CYFIP1 shRNA (m) Lentiviral Particles: sc-60474-V.

Molecular Weight (predicted) of CYFIP1: 145 kDa.

Molecular Weight (observed) of CYFIP1: 122 kDa.

Positive Controls: CYFIP1 (h): 293T Lysate: sc-171687 or HeLa whole cell lysate: sc-2200.

DATA



CYFIP1 (T-20): sc-49935. Western blot analysis of CYFIP1 expression in non-transfected 293T: sc-117752 (A), human CYFIP1 transfected 293T: sc-171687 (B) and HeLa (C) whole cell lysates.

STORAGE

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

RESEARCH USE

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