SANTA CRUZ BIOTECHNOLOGY, INC.

CYFIP2 siRNA (m): sc-62176

BACKGROUND

CYFIP2 (cytoplasmic FMR1-interacting protein 2, p53-inducible protein 121) is a 1,278 amino acid protein encoded by the human gene CYFIP2. CYFIP2 belongs to the CYFIP family and is involved in T-cell adhesion and p53-dependent induction of apoptosis. It interacts with FMR1, FXR1 and FXR2 and is a component of the WAVE1 complex composed of Abi-2, CYFIP2, C3orf10/HSPC300, NAP125 and WASF1/WAVE1. Upon binding to activated Rac 1, CYFIP2 causes the complex to dissociate, releasing activated WASF1. The CYFIP2 promoter contains a p53-responsive element that confers p53 binding as well as transcriptional activation of a heterologous reporter. Induced expression of CYFIP2 is sufficient for caspase activation and cellular apoptosis, reminiscent of p53 activation.

REFERENCES

1. Schenck, A., et al. 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. Schenck, A., et al. 2003. CYFIP/Sra-1 controls neuronal connectivity in *Drosophila* and links the Rac 1 GTPase pathway to the fragile X protein. Neuron 38: 887-898.
3. Mayne, M., et al. 2004. CYFIP2 is highly abundant in $CD4^+$ cells from multiple sclerosis patients and is involved in T cell adhesion. Eur. J. Immunol. 34: 1217-1227.
4. Levanon, E.Y., et al. 2005. Evolutionarily conserved human targets of adenosine to inosine RNA editing. Nucleic Acids Res. 33: 1162-1168.
5. Morris, C.P., et al. 2007. Unravelling the molecular control of calvarial suture fusion in children with craniosynostosis. BMC Genomics 8: 458.
6. Cho, Y.J., et al. 2007. CYFIP2, a direct p53 target, is leptomycin-B sensitive. Cell Cycle 6: 95-103.
7. Wang, C., et al. 2007. Abelson interactor protein-1 positively regulates breast cancer cell proliferation, migration, and invasion. Mol. Cancer Res. 5: 1031-1039.

CHROMOSOMAL LOCATION

Genetic locus: Cyfip2 (mouse) mapping to 11 B1.1.

PRODUCT

CYFIP2 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CYFIP2 shRNA Plasmid (m): sc-62176-SH and CYFIP2 shRNA (m) Lentiviral Particles: sc-62176-V as alternate gene silencing products.

For independent verification of CYFIP2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-62176A, sc-62176B and sc-62176C.

RESEARCH USE

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

CYFIP2 siRNA (m) is recommended for the inhibition of CYFIP2 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

CYFIP2 (6-YD16): sc-134308 is recommended as a control antibody for monitoring of CYFIP2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CYFIP2 gene expression knockdown using RT-PCR Primer: CYFIP2 (m)-PR: sc-62176-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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