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SANTA CRUZ BIOTECHNOLOGY, INC.

Frabin siRNA (m): sc-41718

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The Rho subfamily of Ras-related GTPases controls multiple aspects of cell function, including cytoskeletal rearrangement, nuclear signaling, and cell growth. The Rho family GTPases function as regulated switches that toggle between a biologically active GTP-bound and an inactive GDP-bound form. This activation is catalyzed by guanine nucleotide exchange factors (GEFs). The Dbl-related proteins are a large family of structurally related molecules that have a common ability to catalyze GEF activity for specific members of the Rho family. FGD1, a Dbl-related protein also known as fasciogenital dysplasia gene product, functions as a GEF for the Rho family member Cdc42. Frabin, also known as FGD1-related F-Actin binding protein, catalyzes Cdc42 GEF activity and binds Actin filaments, implicating it as a potential link between Cdc42 and the cytoskeleton.

REFERENCES

1. Bourne, H.R., et al. 1990. The GTPase superfamily: a conserved switch for diverse cell functions. Nature 348: 125-132.
2. Boguski, M.S., et al. 1993. Proteins regulating Ras and its relatives. Nature 366: 643-654.
3. Cerione, R.A., et al. 1996. The Dbl family of oncogenes. Curr. Opin. Cell Biol. 8: 216-222.
4. Whitehead, I.P., et al. 1997. Dbl family proteins. Biochim. Biophys. Acta 1332: F1-F23.
5. Zohn, I.M., et al. 1998. Rho family proteins and Ras transformation: the RHOad less traveled gets congested. Oncogene 17: 1415-1438.
6. Whitehead, I.P., et al. 1998. Cdc42 and FGD1 cause distinct signaling and transforming activities. Mol. Cell. Biol. 18: 4689-4697.
7. Obaishi, H., et al. 1998. Frabin, a novel FGD1-related Actin filament-binding protein capable of changing cell shape and activating c-Jun N-terminal kinase. J. Biol. Chem. 273: 18697-18700.

CHROMOSOMAL LOCATION

Genetic locus: Fgd4 (mouse) mapping to 16 A3.

PRODUCT

Frabin 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 Frabin shRNA Plasmid (m): sc-41718-SH and Frabin shRNA (m) Lentiviral Particles: sc-41718-V as alternate gene silencing products.

For independent verification of Frabin (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-41718A, sc-41718B and sc-41718C.

PROTOCOLS

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

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

Frabin siRNA (m) is recommended for the inhibition of Frabin 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

Frabin (43): sc-136333 is recommended as a control antibody for monitoring of Frabin 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 Frabin gene expression knockdown using RT-PCR Primer: Frabin (m)-PR: sc-41718-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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