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RAPGEF5 siRNA (m): sc-152703

BACKGROUND

The Ras superfamily of GTPases can be subdivided into the Ras, Rho/Rac, Sar, Rab, Arf, Rap and Ran subfamilies, all of which control multiple aspects of cell function, including cytoskeletal rearrangement, nuclear signaling and cell growth. The Ras superfamily of 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). RAPGEF5 (Rap guanine nucleotide exchange factor (GEF) 5), also known as GFR, Mrgef, C86120, mmr-gef, mKIAA0277, 4932413M22 or D030051B22Rik, is a 814 amino acid protein that consists of a DEP domain and an N-terminal Ras-GEF. Existing as three alternatively spliced isoforms, RAPGEF5 interacts with M-Ras and inhibits Rap 1 activation. RAPGEF5 is encoded by a gene located in mouse chromosome 12 F2.

REFERENCES

1. Kawasaki, H., Springett, G.M., Toki, S., Canales, J.J., Harlan, P., Blumenstiel, J.P., Chen, E.J., Bany, I.A., Mochizuki, N., Ashbacher, A., Matsuda, M., Housman, D.E. and Graybiel, A.M. 1998. A Rap guanine nucleotide exchange factor enriched highly in the basal ganglia. *Proc. Natl. Acad. Sci. USA* 95: 13278-13283.
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5. Gielen, S.C., Santegoets, L.A., Kühne, L.C., Van Ijcken, W.F., Boers-Sijmons, B., Hanifi-Moghaddam, P., Helmerhorst, T.J., Blok, L.J. and Burger, C.W. 2007. Genomic and nongenomic effects of estrogen signaling in human endometrial cells: involvement of the growth factor receptor signaling downstream AKT pathway. *Reprod. Sci.* 14: 646-654.

CHROMOSOMAL LOCATION

Genetic locus: Rapgef5 (mouse) mapping to 12 F2.

PRODUCT

RAPGEF5 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RAPGEF5 shRNA Plasmid (m): sc-152703-SH and RAPGEF5 shRNA (m) Lentiviral Particles: sc-152703-V as alternate gene silencing products.

For independent verification of RAPGEF5 (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-152703A, sc-152703B and sc-152703C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

RAPGEF5 siRNA (m) is recommended for the inhibition of RAPGEF5 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 μ M in 66 μ l. 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RAPGEF5 gene expression knockdown using RT-PCR Primer: RAPGEF5 (m)-PR: sc-152703-PR (20 μ l, 586 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Griffin, J.N., Del Viso, F., Duncan, A.R., Robson, A., Hwang, W., Kulkarni, S., Liu, K.J. and Khokha, M.K. 2018. RAPGEF5 regulates nuclear translocation of β -catenin. *Dev. Cell* 44: 248-260.

RESEARCH USE

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

PROTOCOLS

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