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SANTA CRUZ BIOTECHNOLOGY, INC.

P-Rex1 siRNA (m): sc-151954

BACKGROUND

P-Rex1 (phosphatidylinositol 3,4,5-trisphosphate-dependent RAC exchanger 1), also known as PREX1, is a cytoplasmic protein sometimes associated with the plasma membrane that is predominantly expressed in brain and peripheral blood leukocytes. Belonging to the P-Rex family of Rac-GEFs, P-Rex1 contains a DEP domain, a DH (DBL-homology) domain, a PDZ domain and two PH domains, and is believed to function as a RAC guanine nucleotide exchange factor (GEF). Via its PH domains, P-Rex1 is activated by phosphatidylinositol (3,4,5)-trisphosphate (PIP3) and, via its DH domain, P-Rex1 is activated by $\beta\gamma$ subunits of heterotrimeric G proteins. The phenotypic outcome of P-Rex1 knockout mice suggests that P-Rex1 plays an important role in chemotaxis, neutrophil recruitment to inflammatory sites, production of reactive oxygen species and regulation of GPCR (G protein-coupled receptor)-dependent Rac 2 activation.

REFERENCES

1. Welch, H.C., et al. 2002. P-Rex1, a PtdIns(3,4,5)P3- and G$\beta\gamma$-regulated guanine-nucleotide exchange factor for Rac. Cell 108: 809-821.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606905. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Dong, X., et al. 2005. P-Rex1 is a primary Rac 2 guanine nucleotide exchange factor in mouse neutrophils. Curr. Biol. 15: 1874-1879.
4. Mayeenuddin, L.H., et al. 2006. Differential sensitivity of P-Rex1 to isoforms of G protein $\beta\gamma$ dimers. J. Biol. Chem. 281: 1913-1920.
5. Mayeenuddin, L.H., et al. 2006. Phosphorylation of P-Rex1 by the cyclic AMP-dependent protein kinase inhibits the phosphatidylinositiol (3,4,5)-trisphosphate and $G_{\beta\gamma}$-mediated regulation of its activity. J. Biol. Chem. 281: 1921-1928.
6. Hill, K., et al. 2006. Purification of P-Rex1 from neutrophils and nucleotide exchange assay. Meth. Enzymol. 406: 26-41.

CHROMOSOMAL LOCATION

Genetic locus: Prex1 (mouse) mapping to 2 H3.

PRODUCT

P-Rex1 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 P-Rex1 shRNA Plasmid (m): sc-151954-SH and P-Rex1 shRNA (m) Lentiviral Particles: sc-151954-V as alternate gene silencing products.

For independent verification of P-Rex1 (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-151954A, sc-151954B and sc-151954C.

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

P-Rex1 siRNA (m) is recommended for the inhibition of P-Rex1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor P-Rex1 gene expression knockdown using RT-PCR Primer: P-Rex1 (m)-PR: sc-151954-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.