SANTA CRUZ BIOTECHNOLOGY, INC.

PHACTR4 siRNA (m): sc-106405

BACKGROUND

Phosphatase and Actin regulator (PHACTR) family of proteins play a key role in inhibiting the activity of a multifunctional enzyme, protein phosphatase 1 (PP1). PP1 promotes synaptic activity and dendritic morphology in the nervous system. It is suggested that members of the PHACTR family members may be involved in regulation of cytoskeletal dynamics due to their interaction with cytoplasmic β-Actin and globular actin (G-Actin). PHACTR4 (phosphatase and Actin regulator 4), also known as PRO2963, is a 702 amino acid protein that regulates neural tube and optic fissure closure. PHACTR4 contains three RPEL motifs and multiple phosphorylation sites. Six isoforms exist due to alternative splicing events.

REFERENCES

1. Strack, S., et al. 1999. Differential cellular and subcellular localization of protein phosphatase 1 isoforms in brain. J. Comp. Neurol. 413: 373-384.
2. Oliver, C.J., et al. 2002. Targeting protein phosphatase 1 (PP1) to the Actin cytoskeleton: the neurabin I/PP1 complex regulates cell morphology. Mol. Cell. Biol. 22: 4690-4701.
3. Allen, P.B., et al. 2004. Phactrs 1-4: a family of protein phosphatase 1 and actin regulatory proteins. Proc. Natl. Acad. Sci. USA 101: 7187-7192.
4. Hu, X.D., et al. 2006. Actin-associated neurabin-protein phosphatase-1 complex regulates hippocampal plasticity. J. Neurochem. 98: 1841-1851.
5. Kim, T.H., et al. 2007. PHACTR4 regulates neural tube and optic fissure closure by controlling PP1-, Rb-, and E2F1-regulated cell-cycle progression. Dev. Cell 13: 87-102.
6. Larson, J.R., et al. 2008. Protein phosphatase type 1 directs chitin synthesis at the bud neck in *Saccharomyces cerevisiae*. Mol. Biol. Cell 19: 3040-3051.

CHROMOSOMAL LOCATION

Genetic locus: Phactr4 (mouse) mapping to 4 D2.3.

PRODUCT

PHACTR4 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 PHACTR4 shRNA Plasmid (m): sc-106405-SH and PHACTR4 shRNA (m) Lentiviral Particles: sc-106405-V as alternate gene silencing products.

For independent verification of PHACTR4 (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-106405A, sc-106405B and sc-106405C.

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.

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

PHACTR4 siRNA (m) is recommended for the inhibition of PHACTR4 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 PHACTR4 gene expression knockdown using RT-PCR Primer: PHACTR4 (m)-PR: sc-106405-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.