SANTA CRUZ BIOTECHNOLOGY, INC.

PSD3 siRNA (h): sc-77475

BACKGROUND

The ADP-ribosylation factor (ARF) protein family are structurally and functionally conserved members of the Ras superfamily of regulatory GTP-binding proteins. ARFs influence vesicle trafficking and signal transduction in eukaryotic cells. ARF6 mediates a variety of neuronal functions through its regulation of Actin cytoskeleton reorganization and membrane traffic. Activation of ARF6 is strictly regulated by guanine nucleotide exchage factors (GEFs), specifically the PH and SEC7 domain-containing protein (PSD) family. This family comprises four members: PSD1, also designated exchange factor for ARF6 (EFA6), PSD2, PSD3 and PSD4. The PSD proteins coordinate membrane trafficking with Actin cytoskeleton remodeling. They are localized to the plasma membrane where they catalyze ARF6 activation and induce the formation of Actin-based membrane ruffles.

REFERENCES

1. Franco, M., et al. 1999. EFA6, a Sec7 domain-containing exchange factor for ARF6, coordinates membrane recycling and Actin cytoskeleton organization. EMBO J. 18: 1480-1491.
2. Luton, F., et al. 2004. EFA6, exchange factor for ARF6, regulates the Actin cytoskeleton and associated tight junction in response to E-cadherin engagement. Mol. Biol. Cell 15: 1134-1145.
3. Matsuya, S., et al. 2005. Cellular and subcellular localization of EFA6C, a third member of the EFA6 family, in adult mouse Purkinje cells. J. Neurochem. 93: 674-685.
4. Luton, F. 2005. The role of EFA6, exchange factor for ARF6, for tight junction assembly, functions, and interaction with the Actin cytoskeleton. Meth. Enzymol. 404: 332-345.
5. Sakagami, H., et al. 2006. Distinct spatiotemporal expression of EFA6D, a guanine nucleotide exchange factor for ARF6, among the EFA6 family in mouse brain. Brain Res. 1093: 1-11.

CHROMOSOMAL LOCATION

Genetic locus: PSD3 (human) mapping to 8p22.

PRODUCT

PSD3 siRNA (h) 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 PSD3 shRNA Plasmid (h): sc-77475-SH and PSD3 shRNA (h) Lentiviral Particles: sc-77475-V as alternate gene silencing products.

For independent verification of PSD3 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-77475A, sc-77475B and sc-77475C.

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

PSD3 siRNA (h) is recommended for the inhibition of PSD3 expression in human 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 PSD3 gene expression knockdown using RT-PCR Primer: PSD3 (h)-PR: sc-77475-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Viktorova, E.G., et al. 2023. The development of resistance to an inhibitor of a cellular protein reveals a critical interaction between the enterovirus protein 2C and a small GTPase Arf1. PLoS Pathog. 19: e1011673.

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.