

PLC ϵ 2 siRNA (m): sc-152296

BACKGROUND

Phosphoinositide-specific phospholipase C (PLC) plays a crucial role in the initiation of receptor mediated signal transduction through the generation of the two second messengers, inositol 1,4,5-triphosphate (Ins(1,4,5)P₃) and diacylglycerol from phosphatidylinositol 4,5-bisphosphate. There are many mammalian PLC isozymes, including PLC β 1, PLC β 2, PLC β 3, PLC β 4, PLC γ 1, PLC γ 2, PLC δ 1, PLC δ 2, PLC ϵ and PLC ϵ 2. PLC ϵ 2 (Phospholipase C ϵ 2), also known as Inactive phospholipase C-like protein 2 (PLCL2) and PRIP-2, is a 1,127 amino acid cytoplasmic protein that may play a role in the regulation of Ins(1,4,5)P₃ around the endoplasmic reticulum. PLC ϵ 2 contains a C2 domain, a PH domain, a PI-PLC X-box domain (X-box) and a PI-PLC Y-box domain (Y-box). The X-box and Y-box domains are usually important for catalytic activity, though PLC ϵ 2 seems to be catalytically inactive. PLC ϵ 2, along with PRIP-1, may play a role in trafficking certain GABA receptors. There are three isoforms of PLC ϵ 2 that are expressed as a result of alternative splicing events.

REFERENCES

1. Kanematsu, T., et al. 2002. Role of the PLC-related, catalytically inactive protein p130 in GABA_A receptor function. *EMBO J.* 21: 1004-1011.
2. Uji, A., et al. 2002. Molecules interacting with PRIP-2, a novel Ins(1,4,5)P₃ binding protein type 2: Comparison with PRIP-1. *Life Sci.* 72: 443-453.
3. Kanematsu, T., et al. 2005. PRIP, a novel Ins(1,4,5)P₃ binding protein, functional significance in Ca²⁺ signaling and extension to neuroscience and beyond. *Mol. Cells* 20: 305-314.
4. Yanagihori, S., et al. 2006. Protein phosphatase regulation by PRIP, a PLC-related catalytically inactive protein—implications in the phospho-modulation of the GABA_A receptor. *Adv. Enzyme Regul.* 46: 203-222.
5. Kanematsu, T., et al. 2006. Modulation of GABA_A receptor phosphorylation and membrane trafficking by phospholipase C-related inactive protein/protein phosphatase 1 and 2A signaling complex underlying brain-derived neurotrophic factor-dependent regulation of GABAergic inhibition. *J. Biol. Chem.* 281: 22180-22189.
6. Chen, Z.W. and Olsen, R.W. 2007. GABA_A receptor associated proteins: a key factor regulating GABA_A receptor function. *J. Neurochem.* 100: 279-294.

CHROMOSOMAL LOCATION

Genetic locus: Plcl2 (mouse) mapping to 17 C.

PRODUCT

PLC ϵ 2 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 PLC ϵ 2 shRNA Plasmid (m): sc-152296-SH and PLC ϵ 2 shRNA (m) Lentiviral Particles: sc-152296-V as alternate gene silencing products.

For independent verification of PLC ϵ 2 (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-152296A, sc-152296B and sc-152296C.

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

PLC ϵ 2 siRNA (m) is recommended for the inhibition of PLC ϵ 2 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 PLC ϵ 2 gene expression knockdown using RT-PCR Primer: PLC ϵ 2 (m)-PR: sc-152296-PR (20 μ l). 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.

PROTOCOLS

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