SANTA CRUZ BIOTECHNOLOGY, INC.

PKC δ siRNA (m): sc-36246

BACKGROUND

Members of the protein kinase C (PKC) family play a key regulatory role in a variety of cellular functions including cell growth and differentiation, gene expression, hormone secretion and membrane function. PKCs were originally identified as serine/threonine protein kinases whose activity was dependent on calcium and phospholipids. Diacylglycerols (DAG) and tumor promoting phorbol esters bind to and activate PKC. PKCs can be subdivided into at least two major classes, including conventional (c) PKC isoforms (α, βI, βII and γ) and novel (n) PKC isoforms (δ, ε, ζ, η, θ, λ/ι, μ and ν). Patterns of expression for each PKC isoform differs among tissues and PKC family members exhibit clear differences in their cofactor dependencies. For instance, the kinase activities of PKC δ and ε are independent of Ca^{2+}. On the other hand, most of the other PKC members possess phorbol ester-binding activities and kinase activities.

CHROMOSOMAL LOCATION

Genetic locus: Prkcd (mouse) mapping to 14 B.

PRODUCT

PKC δ siRNA (m) is a target-specific 19-25 nt siRNA 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 PKC δ shRNA Plasmid (m): sc-36246-SH and PKC δ shRNA (m) Lentiviral Particles: sc-36246-V as alternate gene silencing 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

PKC δ siRNA (m) is recommended for the inhibition of PKC δ 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.

RESEARCH USE

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

GENE EXPRESSION MONITORING

PKC δ (G-9): sc-8402 is recommended as a control antibody for monitoring of PKC δ gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PKC δ gene expression knockdown using RT-PCR Primer: PKC δ (m)-PR: sc-36246-PR (20 µl, 428 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Sataranatarajan, K., et al. 2008. PKCδ regulates the stimulation of vascular endothelial factor mRNA translation by Angiotensin II through hnRNP K. Cell. Signal. 20: 969-977.
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3. Varecza, Z., et al. 2011. Multiple suppression pathways of canonical Wnt signalling control thymic epithelial senescence. Mech. Ageing Dev. 132: 249-256.
4. Noh, K.T., et al. 2012. Protein kinase C δ (PKCδ)-extracellular signal-regulated kinase 1/2 (ERK1/2) signaling cascade regulates glycogen synthase kinase-3 (GSK-3) inhibition-mediated interleukin-10 (IL-10) expression in lipopolysaccharide (LPS)-induced endotoxemia. J. Biol. Chem. 287: 14226-14233.
5. Lee, J.L., et al. 2014. Ultrasound enhanced PEI-mediated gene delivery through increasing the intracellular calcium level and PKC-δ protein expression. Pharm. Res. 31: 2354-2366.
6. Zaja, I., et al. 2014. Cdk1, PKCδ and calcineurin-mediated Drp1 pathway contributes to mitochondrial fission-induced cardiomyocyte death. Biochem. Biophys. Res. Commun. 453: 710-721.
7. Halder, K., et al. 2014. Overexpressed PKCδ downregulates the expression of PKCα in B16F10 melanoma: induction of apoptosis by PKCδ via ceramide generation. PLoS ONE 9: e91656.
8. Lee, K., et al. 2014. Protein kinase C regulates vascular calcification via cytoskeleton reorganization and osteogenic signaling. Biochem. Biophys. Res. Commun. 453: 793-797.
9. Lee, S.J., et al. 2019. PKCδ mediates NFκB inflammatory response and downregulates SIRT1 expression in liver fibrosis. Int. J. Mol. Sci. 20: 4607.
10. Jung, T.W., et al. 2019. Asprosin attenuates Insulin signaling pathway through PKCδ-activated ER stress and inflammation in skeletal muscle. J. Cell. Physiol. 234: 20888-20899.

PROTOCOLS

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