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SANTA CRUZ BIOTECHNOLOGY, INC.

SMEK2 siRNA (m): sc-153627

BACKGROUND

In eukaryotes, the phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions, including division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine protein phosphatases. In general, the protein phosphatase (PP) holoenzyme is a trimeric complex composed of a regulatory subunit, a variable subunit and a catalytic subunit. Protein phosphatase 4 (PP4) is comprised of different regulatory subunits that exhibit mutually exclusive interactions with the PP4 catalytic subunit, designated PPX. SMEK2, also known as PP4R3B or KIAA1387, is an 849 amino acid protein that contains one WH1 domain and localizes to the nucleus and the cytoplasm, as well as to the centrosome. Functioning as a regulatory subunit of PP4, SMEK2 may regulate the activity of PPP4C at centrosomal microtubule organizing centers. SMEK2 exists as multiple isoforms produced by alternative splicing events.

REFERENCES

1. Gingras, A.C., et al. 2005. A novel, evolutionarily conserved protein phosphatase complex involved in cisplatin sensitivity. Mol. Cell Proteomics 4: 1725-1740.
2. Mendoza, M.C., et al. 2005. Loss of SMEK, a novel, conserved protein, suppresses MEK1 null cell polarity, chemotaxis, and gene expression defects. Mol. Cell. Biol. 25: 7839-7853.
3. Mendoza, M.C., et al. 2007. MEK1 and protein phosphatase 4 coordinate Dictyostelium development and chemotaxis. Mol. Cell. Biol. 27: 3817-3827.
4. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 610351: World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Martin-Granados, C., et al. 2008. Depletion of protein phosphatase 4 in human cells reveals essential roles in centrosome maturation, cell migration and the regulation of Rho GTPases. Int. J. Biochem. Cell Biol. 40: 2315-2332

CHROMOSOMAL LOCATION

Genetic locus: Smek2 (mouse) mapping to 11 A3.3.

PRODUCT

SMEK2 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 SMEK2 shRNA Plasmid (m): sc-153627-SH and SMEK2 shRNA (m) Lentiviral Particles: sc-153627-V as alternate gene silencing products.

For independent verification of SMEK2 (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-153627A, sc-153627B and sc-153627C.

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

SMEK2 siRNA (m) is recommended for the inhibition of SMEK2 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 SMEK2 gene expression knockdown using RT-PCR Primer: SMEK2 (m)-PR: sc-153627-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.