SANTA CRUZ BIOTECHNOLOGY, INC.

α-protein kinase 3 siRNA (m): sc-140599

BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including cell division, homeostasis and apoptosis. α-protein kinase 3, also known as ALPK3, MAK or KIAA1330, is a 1,907 amino acid protein that contains one α-type protein kinase domain, one Ig-like (immunoglobulin-like) domain, and belongs to the protein kinase superfamily and ALPK subfamily. Members of the ALPK subfamily include ALPK1, ALPK2 and ALPK3, all of which recognize and phosphorylate specific sites that are surrounded by peptides that have an α-helical conformation. Specifically, α-protein kinase 1 targets Myosin I and is thought to play an important role in the apical trafficking of vesicles carrying raft-associated sucrase-isomaltase (SI).

REFERENCES

1. Ryazanov, A.G., et al. 1999. α-kinases: a new class of protein kinases with a novel catalytic domain. Curr. Biol. 9: R43-R45.
2. Nakajima, D., et al. 2002. Construction of expression-ready cDNA clones for KIAA genes: manual curation of 330 KIAA cDNA clones. DNA Res. 9: 99-106.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607347. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Yamada, S., et al. 2004. Expression profiling and differential screening between hepatoblastomas and the corresponding normal livers: identification of high expression of the PLK1 oncogene as a poor-prognostic indicator of hepatoblastomas. Oncogene 23: 5901-5911.
5. Drennan, D., et al. 2004. α-kinases: analysis of the family and comparison with conventional protein kinases. Prog. Biophys. Mol. Biol. 85: 1-32.

CHROMOSOMAL LOCATION

Genetic locus: Alpk3 (mouse) mapping to 7 D3.

PRODUCT

α-protein kinase 3 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 α-protein kinase 3 shRNA Plasmid (m): sc-140599-SH and α-protein kinase 3 shRNA (m) Lentiviral Particles: sc-140599-V as alternate gene silencing products.

For independent verification of α-protein kinase 3 (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-140599A, sc-140599B and sc-140599C.

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

α-protein kinase 3 siRNA (m) is recommended for the inhibition of α-protein kinase 3 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 α-protein kinase 3 gene expression knockdown using RT-PCR Primer: α-protein kinase 3 (m)-PR: sc-140599-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.