SANTA CRUZ BIOTECHNOLOGY, INC.

α-protein kinase 2 siRNA (m): sc-140598

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 2, also known as ALPK2 or HAK (heart α-protein kinase), is a 2,170 amino acid member of the protein kinase superfamily and contains one α-type protein kinase domain and one Ig-like domain. Expressed at higher levels in heart tissue, α-protein kinase 2 recognizes and phosphorylates specific phosphorylation sites that are surrounded by peptides which have an α-helical conformation, possibly playing a role in vesicle trafficking.

REFERENCES

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2. 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/
3. Drennan, D. and Ryazanov, A.G. 2004. α-kinases: analysis of the family and comparison with conventional protein kinases. Prog. Biophys. Mol. Biol. 85: 1-32.
4. Heine, M., Cramm-Behrens, C.I., Ansari, A., Chu, H.P., Ryazanov, A.G., Naim, H.Y. and Jacob, R. 2005. α-kinase 1, a new component in apical protein transport. J. Biol. Chem. 280: 25637-25643.
5. Thébault, S., Cao, G., Venselaar, H., Xi, Q., Bindels, R.J. and Hoenderop, J.G. 2008. Role of the α-kinase domain in transient receptor potential melastatin 6 channel and regulation by intracellular ATP. J. Biol. Chem. 283: 19999-20007.

CHROMOSOMAL LOCATION

Genetic locus: Alpk2 (mouse) mapping to 18 E1.

PRODUCT

α-protein kinase 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see α-protein kinase 2 shRNA Plasmid (m): sc-140598-SH and α-protein kinase 2 shRNA (m) Lentiviral Particles: sc-140598-V as alternate gene silencing products.

For independent verification of α-protein kinase 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-140598A, sc-140598B and sc-140598C.

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 2 siRNA (m) is recommended for the inhibition of α-protein kinase 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 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 2 gene expression knockdown using RT-PCR Primer: α-protein kinase 2 (m)-PR: sc-140598-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.