

Plk5 siRNA (m): sc-152327

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. A group of proteins that are intimately involved in this process are the serine/threonine (Ser/Thr) protein kinases. Plk5 is a 595 amino acid mouse protein that contains one protein kinase domain and one POLO box domain and belongs to the Ser/Thr protein kinase superfamily. Using magnesium as a cofactor, Plk5 functions to catalyze the phosphorylation of target proteins, possibly playing a role in a variety of events throughout the cell. The gene encoding Plk5 maps to mouse chromosome 10.

REFERENCES

1. Hanks, S.K., Quinn, A.M. and Hunter, T. 1988. The protein kinase family: conserved features and deduced phylogeny of the catalytic domains. *Science*. 241: 42-52.
2. Hunter, T. 1991. Protein kinase classification. *Meth. Enzymol.* 200: 3-37.
3. Kueng, P., Nikolova, Z., Djonov, V., Hemphill, A., Rohrbach, V., Boehlen, D., Zuercher, G., Andres, A.C. and Ziemiecki, A. 1997. A novel family of serine/threonine kinases participating in spermiogenesis. *J. Cell Biol.* 139: 1851-1859.
4. Blackshaw, S., Harpavat, S., Trimarchi, J., Cai, L., Huang, H., Kuo, W.P., Weber, G., Lee, K., Fraioli, R.E., Cho, S.H., Yung, R., Asch, E., Ohno-Machado, L., Wong, W.H. and Cepko, C.L. 2004. Genomic analysis of mouse retinal development. *PLoS Biol.* 2: E247.
5. Wissing, J., Jansch, L., Nimtz, M., Dieterich, G., Hornberger, R., Keri, G., Wehland, J. and Daub, H. 2007. Proteomics analysis of protein kinases by target class-selective prefractionation and tandem mass spectrometry. *Mol. Cell. Proteomics* 6: 537-547.

CHROMOSOMAL LOCATION

Genetic locus: 6330514A18Rik (mouse) mapping to 10 C1.

PRODUCT

Plk5 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 Plk5 shRNA Plasmid (m): sc-152327-SH and Plk5 shRNA (m) Lentiviral Particles: sc-152327-V as alternate gene silencing products.

For independent verification of Plk5 (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-152327A, sc-152327B and sc-152327C.

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 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

Plk5 siRNA (m) is recommended for the inhibition of Plk5 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 Plk5 gene expression knockdown using RT-PCR Primer: Plk5 (m)-PR: sc-152327-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.