



Fnk siRNA (h): sc-39150

BACKGROUND

Plks (polo-like kinases) encode serine/threonine kinases that are closely related to polo and Cdc5, genes that are required for passage through mitosis in *Drosophila* and *Saccharomyces*, respectively. Polo-like kinases, which include Plk, Snk (for serum-inducible kinase, also designated Plk2) and Fnk (for FGF-inducible kinase, also designated Plk3 or PRK), play a role in cell proliferation. Plk protein accumulates in the cell during S and G₂ phases of the cell cycle, and both protein content and catalytic activity peak at the onset of mitosis, followed by a rapid reduction after mitosis. Snk and Fnk are immediate-early response genes that are first expressed during G₁ phase. Fnk expression peaks in late S and G₂ phases, and it may play a role in regulating the onset of M phase.

REFERENCES

1. Sunkel, C.E., et al. 1988. Polo, a mitotic mutant of *Drosophila* displaying abnormal spindle poles. *J. Cell Sci.* 89: 25-38.
2. Kitada, K., et al. 1993. A multicopy suppressor gene of the *Saccharomyces cerevisiae* G₁ cell cycle mutant gene Dbf4 encodes a protein kinase and is identified as Cdc5. *Mol. Cell. Biol.* 13: 4445-4457.
3. Lake, R.J., et al. 1993. Cell cycle- and terminal differentiation-associated regulation of the mouse mRNA encoding a conserved mitotic protein kinase. *Mol. Cell. Biol.* 73: 7793-7801.
4. Hamanaka, R., et al. 1994. Cloning and characterization of human and murine homologues of the *Drosophila* polo serine/threonine kinase. *Cell Growth Differ.* 5: 249-257.
5. Li, B., et al. 1996. Prk, a cytokine-inducible human protein serine/threonine kinase whose expression appears to be down-regulated in lung carcinomas. *J. Biol. Chem.* 271: 19402-19408.
6. Glover, D.M., et al. 1998. Polo-like kinases: a team that plays throughout mitosis. *Genes Dev.* 12: 3777-3787.
7. Chase, D., et al. 1998. Expression and phosphorylation of fibroblast-growth-factor-inducible kinase (Fnk) during cell-cycle progression. *Biochem. J.* 333: 655-660.

CHROMOSOMAL LOCATION

Genetic locus: PLK3 (human) mapping to 1p34.1.

PRODUCT

Fnk siRNA (h) 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 Fnk shRNA Plasmid (h): sc-39150-SH and Fnk shRNA (h) Lentiviral Particles: sc-39150-V as alternate gene silencing products.

For independent verification of Fnk (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-39150A, sc-39150B and sc-39150C.

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

Fnk siRNA (h) is recommended for the inhibition of Fnk expression in human 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 Fnk gene expression knockdown using RT-PCR Primer: Fnk (h)-PR: sc-39150-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhu, F., et al. 2010. Prostaglandin (PG)D(2) and 15-deoxy- δ -PGJ, but not PGE, mediate shear-induced chondrocyte apoptosis via protein kinase A-dependent regulation of polo-like kinases. *Cell Death Differ.* 17: 1325-1334.

RESEARCH USE

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

PROTOCOLS

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