

PBK siRNA (h): sc-106892

BACKGROUND

Protein kinases comprise a large group of encoded factors that regulate cellular processes by catalyzing the transfer of a phosphate group to a hydroxyl acceptor in serine, threonine or tyrosine residues. Kinases are capable of influencing the oncogenic potential of cell systems at the level of oncoprotein or tumor suppressor protein phosphorylation states. Human PDZ-binding kinase, known as PBK, is a 322 amino acid, T/SXV motif-containing serine/threonine kinase that is abundant in placenta and absent from adult brain tissue. A PDZ domain in the tumor suppressor protein Dlg can coordinate with the T/SXV motif of PBK. The cell cycle checkpoint kinase Cdc2/cyclin B is an upstream effector of PBK that can phosphorylate and activate PBK. Active PBK may associate with PDZ-containing proteins and influence cell cycle control or cellular proliferation.

REFERENCES

1. Hunter, T. 1995. Protein kinases and phosphatases: the yin and yang of protein phosphorylation and signaling. *Cell* 80: 225-236.
2. Hunter, T. 2000. Signaling—2000 and beyond. *Cell* 100: 113-127.
3. Gaudet, S., et al. 2000. Characterization of PDZ-binding kinase, a mitotic kinase. *Proc. Natl. Acad. Sci. USA* 97: 5167-5172.
4. Abe, Y., et al. 2000. Cloning and expression of a novel MAPKK-like protein kinase, lymphokine-activated killer T cell-originated protein kinase, specifically expressed in the testis and activated lymphoid cells. *J. Biol. Chem.* 275: 21525-21531.
5. Zhao, S., et al. 2001. PDZ-binding kinase participates in spermatogenesis. *Int. J. Biochem. Cell Biol.* 33: 631-636.
6. Dougherty, J.D., et al. 2005. PBK/TPK, a proliferating neural progenitor-specific mitogen-activated protein kinase kinase. *J. Neurosci.* 25: 10773-10785.
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CHROMOSOMAL LOCATION

Genetic locus: PBK (human) mapping to 8p21.1.

PRODUCT

PBK 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 PBK shRNA Plasmid (h): sc-106892-SH and PBK shRNA (h) Lentiviral Particles: sc-106892-V as alternate gene silencing products.

For independent verification of PBK (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-106892A, sc-106892B and sc-106892C.

RESEARCH USE

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

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

PBK siRNA (h) is recommended for the inhibition of PBK 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.

GENE EXPRESSION MONITORING

PBK (B-10): sc-390399 is recommended as a control antibody for monitoring of PBK gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PBK gene expression knockdown using RT-PCR Primer: PBK (h)-PR: sc-106892-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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