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PAK6 siRNA (m): sc-44879

BACKGROUND

The p21^{CDKN1A}-activated kinases (PAKs) are serine/threonine protein kinases that bind to activated small GTPases, including Cdc42 and Rac, and influence transcription, cell morphology (cytoskeleton rearrangement), motility, and apoptosis. PAK family members contain an amino-terminal Cdc42/Rac interactive binding (CRIB) domain and a carboxyl-terminal kinase domain. PAK6 protein cotranslocates into the nucleus with androgen receptor, which is a steroid hormone-dependent transcription factor that is important for male sexual differentiation and development, in response to androgen. PAK6 transcripts are present at high levels in brain and testis, with lower levels in multiple tissues including prostate and breast. The human PAK6 gene maps to chromosome 15q15.1.

REFERENCES

1. Yang, F., et al. 2001. Androgen receptor specifically interacts with a novel p21-activated kinase, PAK6. *J. Biol. Chem.* 276: 15345-15353.
2. Lee, S.H., et al. 2001. β PIX-enhanced p38 activation by Cdc42/Rac/PAK/Mkk3/6-mediated pathway. Implication in the regulation of membrane ruffling. *J. Biol. Chem.* 276: 25066-25072.
3. Jaffer, Z.M. and Chernoff, J. 2002. p21-activated kinases: three more join the PAK. *Int. J. Biochem. Cell Biol.* 34: 713-717.
4. Schrantz, N., et al. 2004. Mechanism of p21-activated kinase 6-mediated inhibition of androgen receptor signaling. *J. Biol. Chem.* 279: 1922-1931.
5. Kaur, R., et al. 2005. Activation of p21-activated kinase 6 by MAP kinase kinase 6 and p38 MAP kinase. *J. Biol. Chem.* 280: 3323-3330.
6. LocusLink Report (LocusID: 56924). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: Pak6 (mouse) mapping to 2 E5.

PRODUCT

PAK6 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 PAK6 shRNA Plasmid (m): sc-44879-SH and PAK6 shRNA (m) Lentiviral Particles: sc-44879-V as alternate gene silencing products.

For independent verification of PAK6 (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-44879A, sc-44879B and sc-44879C.

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

PAK6 siRNA (m) is recommended for the inhibition of PAK6 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 PAK6 gene expression knockdown using RT-PCR Primer: PAK6 (m)-PR: sc-44879-PR (20 μ l, 452 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Pensold, D., et al. 2017. The DNA methyltransferase 1 (DNMT1) controls the shape and dynamics of migrating POA-derived interneurons fated for the murine cerebral cortex. *Cereb. Cortex* 27: 5696-5714.
2. Symmank, J., et al. 2018. DNMT1 modulates interneuron morphology by regulating PAK6 expression through crosstalk with histone modifications. *Epigenetics* 13: 536-556.

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.