SANTA CRUZ BIOTECHNOLOGY, INC.

Pim-3 siRNA (m): sc-61354

BACKGROUND

The Pim (provirus integration site for Moloney murine leukemia virus) family serine/threonine protein kinases were first identified in studies examining genes targeted for proviral insertion in murine leukemia virus-induced T lymphomas. Increased levels of Pim kinases predispose cells to lymphomagenesis and enhance the activity of mitogenic proteins such as p100, c-Myb and Cdc25A. In addition, Pim kinases are also involved in modulation of synaptic strength in neurons and anti-apoptotic signaling in hematopoietic progenitor cells. Pim-3, a member of the proto-oncogene Pim family that expresses serine/threonine kinase activity, shares significant homology with Pim-1 serine/threonine protein kinases. Pim-3 may function as a mediator of synaptic plasticity in the brain and is presumably involved in the anti-apoptosis process and cell cycle progression as well as the proliferation of human hepatoma cell lines. The Pim-3 protein is widely expressed, however no expression is observed in the colon, thymus or small intestine.

REFERENCES

1. Feldman, J.D., et al. 1998. KID-1, a protein kinase induced by depolarization in brain. J. Biol. Chem. 273: 16535-16543.
2. Konietzko, U., et al. 1999. Pim kinase expression is induced by LTP stimulation and required for the consolidation of enduring LTP. EMBO J. 18: 3359-3369.
3. Eichmann, A., et al. 2000. Developmental expression of Pim kinases suggests functions also outside of the hematopoietic system. Oncogene 19: 1215-1224.
4. Deneen, B., et al. 2003. Pim-3 proto-oncogene kinase is a common transcriptional target of divergent EWS/ETS oncoproteins. Mol. Cell. Biol. 23: 3897-3908.
5. Yan, B., et al. 2003. The Pim-2 kinase phosphorylates Bad on Serine 112 and reverses Bad-induced cell death. J. Biol. Chem. 278: 45358-45367.
6. Qian, K.C., et al. 2005. Structural basis of constitutive activity and a unique nucleotide binding mode of human Pim-1 kinase. J. Biol. Chem. 280: 6130-6137.
7. Bachmann, M., et al. 2005. The serine/threonine kinase Pim-1. Int. J. Biochem. Cell Biol 37: 726-730.

CHROMOSOMAL LOCATION

Genetic locus: Pim3 (mouse) mapping to 15 E3.

PRODUCT

Pim-3 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 Pim-3 shRNA Plasmid (m): sc-61354-SH and Pim-3 shRNA (m) Lentiviral Particles: sc-61354-V as alternate gene silencing products.

For independent verification of Pim-3 (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-61354A, sc-61354B and sc-61354C.

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

Pim-3 siRNA (m) is recommended for the inhibition of Pim-3 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 Pim-3 gene expression knockdown using RT-PCR Primer: Pim-3 (m)-PR: sc-61354-PR (20 µl, 590 bp). 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.

PROTOCOLS

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