

Pim-2 siRNA (m): sc-36227

BACKGROUND

The Pim-2 gene product (provirus integration site for Moloney murine leukemia virus), is a serine/threonine kinase that is capable of autophosphorylation. Human transcripts for Pim-2 have been detected in hematopoietic lineages as well as leukemic and lymphoma cells (K-562, HL-60, RAJI, SW480, testis, small intestine and colon). Additionally, Pim-2 kinase is found at moderate levels and is distributed evenly throughout the brain. Pim-2 kinase is implicated in tumor phenotypes and may be involved in the formation and preservation of Long-Term Potentiation (LTP), a profuse, activity-dependent enhancement of synaptic efficacy that is implicated in long-term memory.

REFERENCES

1. Van der Lugt, N.M., et al. 1995. Proviral tagging in E μ -Myc transgenic mice lacking the Pim-1 proto-oncogene leads to compensatory activation of Pim-2. *EMBO J.* 11: 2536-2544.
2. Allen, J.D., et al. 1997. Pim-2 transgene induces lymphoid tumors, exhibiting potent synergy with c-Myc. *Oncogene* 10: 1133-1141.
3. Baytel, D., et al. 1998. The human Pim-2 proto-oncogene and its testicular expression. *Biochim. Biophys. Acta* 1442: 274-285.
4. 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.
5. Eichmann, A., et al. 2000. Developmental expression of Pim kinases suggests functions also outside of the hematopoietic system. *Oncogene* 19: 1215-1224.

CHROMOSOMAL LOCATION

Genetic locus: Pim2 (mouse) mapping to X A1.1.

PRODUCT

Pim-2 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 Pim-2 shRNA Plasmid (m): sc-36227-SH and Pim-2 shRNA (m) Lentiviral Particles: sc-36227-V as alternate gene silencing products.

For independent verification of Pim-2 (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-36227A, sc-36227B and sc-36227C.

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

Pim-2 siRNA (m) is recommended for the inhibition of Pim-2 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.

GENE EXPRESSION MONITORING

Pim-2 (1D12): sc-13514 is recommended as a control antibody for monitoring of Pim-2 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 Pim-2 gene expression knockdown using RT-PCR Primer: Pim-2 (m)-PR: sc-36227-PR (20 μ l, 419 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Adam, M., et al. 2006. Targeting PIM kinases impairs survival of hematopoietic cells transformed by kinase inhibitor-sensitive and kinase inhibitor-resistant forms of Fms-like tyrosine kinase 3 and Bcr/Abl. *Cancer Res.* 66: 3828-3835.
2. Whillock, A.L., et al. 2019. TRAF3 regulates the oncogenic proteins Pim2 and c-Myc to restrain survival in normal and malignant B cells. *Sci. Rep.* 9: 12884.
3. Heo, S.C., et al. 2022. Pim-2 regulates bone resorptive activity of osteoclasts via V-ATPase α 3 isoform expression in periodontal disease. *J. Cell. Physiol.* 237: 3381-3393.

RESEARCH USE

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