SANTA CRUZ BIOTECHNOLOGY, INC.

IMPA3 siRNA (h): sc-77647

BACKGROUND

IMPA1, also known as Myo-inositol monophosphatase 1, is responsible for the procurement of inositol that is required for synthesis of phosphatidylinositol and polyphosphoinositides. IMPA1 exists as a homodimer and has been identified as the pharmacological target for lithium action in the brain. IMPA1 is the principal enzyme of the phosphatidyl inositol signaling pathway and is a member of the inositol monophosphatase family, which include related proteins IMPA2 and IMPA3. The gene encoding IMPA3, also designated IMPAD1, maps to chromosome 8, which encodes about 800 genes. Translocation of portions of chromosome 8 with amplifications of the c-Myc gene are found in some leukemias and lymphomas.

REFERENCES

1. McAllister, G., et al. 1992. cDNA cloning of human and rat brain myo-inositol monophosphatase. Expression and characterization of the human recombinant enzyme. Biochem. J. 284: 749-754.
2. Klein, P.S. and Melton, D.A. 1996. A molecular mechanism for the effect of lithium on development. Proc. Natl. Acad. Sci. USA 93: 8455-8459.
3. Steen, V.M., et al. 1996. Lack of genetic variation in the coding region of the myo-inositol monophosphatase gene in lithium-treated patients with manic depressive illness. Pharmacogenetics 6: 113-116.
4. Sjoholt, G., et al. 1997. Genomic structure and chromosomal localization of a human myo-inositol monophosphatase gene (IMPA). Genomics 45: 113-122.
5. Parthasarathy, L.K., et al. 2003. Regional changes in rat brain inositol monophosphatase 1 (IMPase 1) activity with chronic lithium treatment. Prog. Neuropsychopharmacol. Biol. Psychiatry 27: 55-60.
6. Morgan, A.J., et al. 2004. Chemistry and biology of deoxy-myo-inositol phosphates: stereospecificity of substrate interactions within an archaeal and a bacterial IMPase. J. Am. Chem. Soc. 126: 15370-15371.
7. Nusbaum, C., et al. 2006. DNA sequence and analysis of human chromosome 8. Nature 439: 331-335.

CHROMOSOMAL LOCATION

Genetic locus: IMPAD1 (human) mapping to 8q12.1.

PRODUCT

IMPA3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see IMPA3 shRNA Plasmid (h): sc-77647-SH and IMPA3 shRNA (h) Lentiviral Particles: sc-77647-V as alternate gene silencing products.

For independent verification of IMPA3 (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-77647A, sc-77647B and sc-77647C.

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 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

IMPA3 siRNA (h) is recommended for the inhibition of IMPA3 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 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 IMPA3 gene expression knockdown using RT-PCR Primer: IMPA3 (h)-PR: sc-77647-PR (20 µl). 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.