SANTA CRUZ BIOTECHNOLOGY, INC.

NPL siRNA (m): sc-150051

BACKGROUND

NPL [N-acetylneuraminate pyruvate lyase (dihydrodipicolinate synthase)], also known as N-acetylneuraminic acid aldolase, N-acetylneuraminate lyase (NALase), sialic acid lyase, c112, NPL1 or DHDPS1, is a 320 amino acid cytoplasmic protein that belongs to the DHDPS family and NanA subfamily. Involved in the degradation of N-acetylneuraminate and the metabolism of amino-sugars, NPL catalyzes N-acetylneuraminic acid cleavage via a Schiff base intermediate, forming N-acetylmannosamine and pyruvate. Able to form five alternatively spliced isoforms, NPL isoform 2 has been observed in pancreas, spleen, thymus, small intestine, peripheral blood leukocytes, placenta, liver and kidney. NPL also forms a homotetramer and is encoded by a gene located on human chromosome 1.

REFERENCES

1. Traving, C., et al. 2001. The sialate-pyruvate lyase from pig kidney. Elucidation of the primary structure and expression of recombinant enzyme activity. Eur. J. Biochem. 268: 6473-6486.
2. Sood, R., et al. 2001. Cloning and characterization of 13 novel transcripts and the human RGS8 gene from the 1q25 region encompassing the hereditary prostate cancer (HPC1) locus. Genomics 73: 211-222.
3. Tanner, M.E. 2005. The enzymes of sialic acid biosynthesis. Bioorg. Chem. 33: 216-228.
4. Wu, M., et al. 2005. A novel splice variant of human gene NPL, mainly expressed in human liver, kidney and peripheral blood leukocyte. DNA Seq. 16: 137-142.
5. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611412. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Chu, H.Y., et al. 2009. Homology modeling and molecular dynamics study on N-acetylneuraminate lyase. J. Mol. Model. 15: 323-328.

CHROMOSOMAL LOCATION

Genetic locus: Npl (mouse) mapping to 1 G3.

PRODUCT

NPL 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 NPL shRNA Plasmid (m): sc-150051-SH and NPL shRNA (m) Lentiviral Particles: sc-150051-V as alternate gene silencing products.

For independent verification of NPL (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-150051A, sc-150051B and sc-150051C.

PROTOCOLS

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

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

NPL siRNA (m) is recommended for the inhibition of NPL 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 NPL gene expression knockdown using RT-PCR Primer: NPL (m)-PR: sc-150051-PR (20 µl, 479 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.