

# Neu4 siRNA (h): sc-94619

## BACKGROUND

Neu4 (N-acetyl- $\alpha$ -neuraminidase 4), also known as LP5125, is a 484 amino acid peripheral membrane protein that contains three BNR repeats and belongs to the glycosyl hydrolase 33 family. Expressed ubiquitously with highest expression in liver, Neu4 functions as a sialidase that catalyzes the hydrolysis of  $\alpha$ -(2 $\rightarrow$ 3)-,  $\alpha$ -(2 $\rightarrow$ 6)- and  $\alpha$ -(2 $\rightarrow$ 8)- glycosidic linkages of terminal sialic acid residues in synthetic substrates, as well as glycolipids, oligosaccharides and colominic acid. The gene encoding Neu4 maps to human chromosome 2, which houses over 1,400 genes and comprises nearly 8% of the human genome. Harlequin ichthyosis, a rare and morbid skin deformity, is associated with mutations in the ABCA12 gene, while the lipid metabolic disorder sitosterolemia is associated with defects in the ABCG5 and ABCG8 genes. Additionally, an extremely rare recessive genetic disorder, Alström syndrome, is caused by mutations in the ALMS1 gene, which maps to chromosome 2.

## REFERENCES

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- Seyrantepe, V., et al. 2004. Neu4, a novel human lysosomal lumen sialidase, confers normal phenotype to sialidosis and galactosialidosis cells. *J. Biol. Chem.* 279: 37021-37029.
- Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2004. Johns Hopkins University, Baltimore, MD. MIM Number: 608527. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Stamatos, N.M., et al. 2005. Differential expression of endogenous sialidases of human monocytes during cellular differentiation into macrophages. *FEBS J.* 272: 2545-2556.
- Magesh, S., et al. 2006. Homology modeling of human sialidase enzymes Neu1, Neu3 and Neu4 based on the crystal structure of Neu2: hints for the design of selective Neu3 inhibitors. *J. Mol. Graph. Model.* 25: 196-207.
- Miyagi, T., et al. 2008. Human sialidase as a cancer marker. *Proteomics* 8: 3303-3311.

## CHROMOSOMAL LOCATION

Genetic locus: NEU4 (human) mapping to 2q37.3.

## PRODUCT

Neu4 siRNA (h) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Neu4 shRNA Plasmid (h): sc-94619-SH and Neu4 shRNA (h) Lentiviral Particles: sc-94619-V as alternate gene silencing products.

## PROTOCOLS

See our web site at [www.scbt.com](http://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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

Neu4 siRNA (h) is recommended for the inhibition of Neu4 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  $\mu$ M in 66  $\mu$ 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 Neu4 gene expression knockdown using RT-PCR Primer: Neu4 (h)-PR: sc-94619-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

- Cai, B.H., et al. 2019. Synergistic activation of the Neu4 promoter by p73 and AP2 in colon cancer cells. *Sci. Rep.* 9: 950.

## RESEARCH USE

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