SANTA CRUZ BIOTECHNOLOGY, INC.

Neu2 siRNA (m): sc-149920

BACKGROUND

Neu2 (N-acetyl-α-neuraminidase 2), also known as SIAL2 (sialidase 2), is a 380 amino acid cytosolic sialidase that contains two BNR repeats and belongs to the glycosyl hydrolase 33 family. Expressed in fetal liver, skeletal muscle and an embryonic carcinoma cell line, Neu2 functions to catalytically hydrolyze sialyated compounds. More specifically, Neu2 catalyzes the hydrolysis of α-(2,3), α-(2,6) and α-(2,8) glycosidic linkages of terminal sialic acid residues on glycoproteins, glycolipids, oligosaccharides, colominic acid and various synthetic substrates. Neu2 contains an N-linked glycosylation site, an N-terminal F/YRIP sequence motif (common to many sialidase enzymes) and two aspartic acid block consensus sequences. Human Neu2 shares over 72% sequence similarity with its rat and hamster counterparts, suggesting a conserved function between species. Expression of Neu2 in embryonic carcinomas implies a possible role in tumor formation and metastasis.

REFERENCES

1. Miyagi, T., et al. 1993. Molecular cloning and expression of cDNA encoding rat skeletal muscle cytosolic sialidase. J. Biol. Chem. 268: 26435-26440.
2. Monti, E., et al. 1999. Cloning and characterization of Neu2, a human gene homologous to rodent soluble sialidases. Genomics 57: 137-143.
3. Monti, E., et al. 1999. Expression of a novel human sialidase encoded by the Neu2 gene. Glycobiology 9: 1313-1321.
4. Tringali, C., Pet al. 2004. Properties of recombinant human cytosolic sialidase HsNeu2. The enzyme hydrolyzes monomerically dispersed GM1 ganglioside molecules. J. Biol. Chem. 279: 3169-3179.
5. Chavas, L.M., et al. 2005. Crystal structure of the human cytosolic sialidase Neu2. Evidence for the dynamic nature of substrate recognition. J. Biol. Chem. 280: 469-475.
6. Fanzani, A., et al. 2006. Insulin-like growth factor 1 signaling regulates cytosolic sialidase Neu2 expression during myoblast differentiation and hypertrophy. FEBS J. 273: 3709-3721.
7. Li, C.Y., et al. 2007. A nonsynonymous SNP in human cytosolic sialidase in a small Asian population results in reduced enzyme activity: potential link with severe adverse reactions to oseltamivir. Cell Res. 17: 357-362.

CHROMOSOMAL LOCATION

Genetic locus: Neu2 (mouse) mapping to 1 D.

PRODUCT

Neu2 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 Neu2 shRNA Plasmid (m): sc-149920-SH and Neu2 shRNA (m) Lentiviral Particles: sc-149920-V as alternate gene silencing products.

For independent verification of Neu2 (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-149920A, sc-149920B and sc-149920C.

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

Neu2 siRNA (m) is recommended for the inhibition of Neu2 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 Neu2 gene expression knockdown using RT-PCR Primer: Neu2 (m)-PR: sc-149920-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. McMorran, B.J., et al. 2016. Differentiation-related glycan epitopes identify discrete domains of the muscle glycocalyx. Glycobiology 26: 1120-1132.

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.