SANTA CRUZ BIOTECHNOLOGY, INC.

Neu2 siRNA (h): sc-94978

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Neu2 (N-acetyl-α-neuraminidase 2), also known as SIAL2 (sialidase 2), is a 380 amino acid cytosolic sialidase that contains 2 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., Konno, K., Emori, Y., Kawasaki, H., Suzuki, K., Yasui, A. and Tsuik, S. 1993. Molecular cloning and expression of cDNA encoding rat skeletal muscle cytosolic sialidase. J. Biol. Chem. 268: 26435-26440.
2. Monti, E., Preti, A., Rossi, E., Ballabio, A. and Borsani, G. 1999. Cloning and characterization of NEU2, a human gene homologous to rodent soluble sialidases. Genomics 57: 137-143.
3. Monti, E., Preti, A., Nesti, C., Ballabio, A. and Borsani, G. 1999. Expression of a novel human sialidase encoded by the NEU2 gene. Glycobiology 9: 1313-1321.
4. Tringali, C., Papini, N., Fusi, P., Croci, G., Borsani, G., Preti, A., Tortora, P., Tettamanti, G., Venerando, B. and Monti, E. 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., Tringali, C., Fusi, P., Venerando, B., Tettamanti, G., Kato, R., Monti, E. and Wakatsuki, S. 2005. Crystal structure of the human cytosolic sialidase Neu2. Evidence for the dynamic nature of substrate recognition. J. Biol. Chem. 280: 469-475.

CHROMOSOMAL LOCATION

Genetic locus: NEU2 (human) mapping to 2q37.1.

PRODUCT

Neu2 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 Neu2 shRNA Plasmid (h): sc-94978-SH and Neu2 shRNA (h) Lentiviral Particles: sc-94978-V as alternate gene silencing products.

For independent verification of Neu2 (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-94978A, sc-94978B and sc-94978C.

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

Neu2 siRNA (h) is recommended for the inhibition of Neu2 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.

GENE EXPRESSION MONITORING

Neu2 (37Y): sc-100570 is recommended as a control antibody for monitoring of Neu2 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 Neu2 gene expression knockdown using RT-PCR Primer: Neu2 (h)-PR: sc-94978-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.