SANTA CRUZ BIOTECHNOLOGY, INC.

Neu1 siRNA (m): sc-149919

BACKGROUND

NEU1 encodes the lysosomal enzyme neuraminidase, Neu1, which cleaves terminal sialic acid residues from substrates such as glycoproteins and glycolipids. In the lysosome Neu1 belongs to a heterotrimeric complex containing β-galactosidase and cathepsin A (also referred to as "protective protein"). In humans, primary or secondary deficiency of this enzyme leads to two clinically similar neurodegenerative lysosomal storage disorders: sialidosis and galactosialidosis (GS). Sialidosis symptoms range from eye abnormalities and neurological disturbances to skeletal malformations, mental retardation and early death. Neu1 is expressed in the pancreas, muscle, kidney, placenta, heart, lung and liver. The human Neu1 gene maps to chromosome 6p21.33 and encodes a lysosomal protein localized on the inner side of the plasma membrane and in intracellular vesicles. Neu1 is also known as α-N-acetyl-neuraminidase and Acetylneuraminyl hydrolase.

REFERENCES

1. Penzel, R., et al. 2001. Splice donor site mutation in the lysosomal neuraminidase gene causing exon skipping and complete loss of enzyme activity in a sialidosis patient. FEBS Lett. 501: 135-138.
2. Sergi, C., et al. 2001. Prenatal diagnosis and fetal pathology in a Turkish family harboring a novel nonsense mutation in the lysosomal α-N-acetyl-neuraminidase (sialidase) gene. Hum. Genet. 109: 421-428.
3. de Geest, N., et al. 2002. Systemic and neurologic abnormalities distinguish the lysosomal disorders sialidosis and galactosialidosis in mice. Hum. Mol. Genet. 11: 1455-1464.
4. Uhl, J., et al. 2002. Identification of a CTL4/Neu1 fusion transcript in a sialidosis patient. FEBS Lett. 521: 19-23.

CHROMOSOMAL LOCATION

Genetic locus: Neu1 (mouse) mapping to 17 B1.

PRODUCT

Neu1 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 Neu1 shRNA Plasmid (m): sc-149919-SH and Neu1 shRNA (m) Lentiviral Particles: sc-149919-V as alternate gene silencing products.

For independent verification of Neu1 (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-149919A, sc-149919B and sc-149919C.

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

Neu1 siRNA (m) is recommended for the inhibition of Neu1 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 Neu1 gene expression knockdown using RT-PCR Primer: Neu1 (m)-PR: sc-149919-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. Sumida, M., et al. 2015. Rapid trimming of cell surface polysialic acid (polySia) by exovesicular sialidase triggers release of preexisting surface neurotrophin. J. Biol. Chem. 290: 13202-13214.

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.