SANTA CRUZ BIOTECHNOLOGY, INC.

NDST2 (D-20): sc-16764

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The N-deacetylation and N-sulfation of N-acetylglucosamine residues in heparan sulfate and heparin initiate a set of biochemical reactions, which lead to the synthesis of oligosaccharide sequences that have specific ligand binding properties. These reactions are catalyzed by the monomeric enzymes GlcNAc N-deacetylase/N-sulfotransferases (NDSTs), which have two catalytic activities. Multiple NDST isozymes have been identified, each having unique tissue distribution and enzymatic properties. Phylogenetic data suggests that NDST1-4 evolved from a common ancestral gene, which diverged to give rise to two subtypes, NDST1/2 and NDST3/4. NDST1, which maps to human chromosome 5q32-q33.1, shares the most homology with NDST2, which maps to human chromosome 10q22.2. The least conserved amino acids between these two enzymes are found in the N-terminus/putative transmembrane regions. The human NDST3 and NDST4 genes are closely linked on chromosome 4, mapping to chromosome 4q25-26 and 4q26-27, respectively. RT-PCR analysis of various mouse tissues reveals a restricted pattern of NDST3 and NDST4 mRNA expression when compared with that of NDST1 and NDST2, which are abundantly and ubiquitously expressed.

REFERENCES

1. Dixon, J., Loftus, S.K., Gladwin, A.J., Scambler, P.J., Wasmuth, J.J. and Dixon, M.J. 1995. Cloning of the human heparan sulfate-N-deacetylase/N-sulfotransferase gene from the Treacher Collins syndrome candidate region at 5q32-q33.1. Genomics 26: 239-244.
2. Humphries, D.E., Lanciotti, J. and Karlinsky, J.B. 1998. cDNA cloning, genomic organization and chromosomal localization of human heparan glucosaminyl N-deacetylase/N-sulphotransferase-2. Biochem. J. 332: 303-307.
3. Aikawa, J. and Esko, J.D. 1999. Molecular cloning and expression of a third member of the heparan sulfate/heparin GlcNAc N-deacetylase/N-sulfotransferase family. J. Biol. Chem. 274: 2690-2695.
4. Aikawa, J., Grobe, K., Tsujimoto, M. and Esko, J.D. 2001. Multiple isozymes of heparan sulfate/heparin GlcNAc N-deacetylase/GlcN N-sulfotransferase. Structure and activity of the fourth member, NDST4. J. Biol. Chem. 276: 5876-5882.
5. Locus Link (LocusID: 9348) http://www.ncbi.nlm.nih.gov/LocusLink

CHROMOSOMAL LOCATION

Genetic locus: NDST2 (human) mapping to 10q22.2; Ndst2 (mouse) mapping to 14 A3.

SOURCE

NDST2 (D-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of NDST2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16764 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

NDST2 (D-20) is recommended for detection of NDST2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

NDST2 (D-20) is also recommended for detection of NDST2 in additional species, including equine, canine, bovine and porcine.

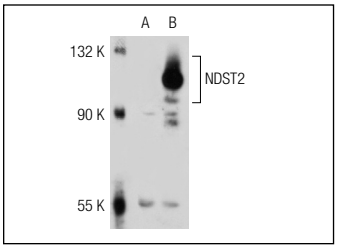
Suitable for use as control antibody for NDST2 siRNA (h): sc-40763, NDST2 siRNA (m): sc-40764, NDST2 shRNA Plasmid (h): sc-40763-SH, NDST2 shRNA Plasmid (m): sc-40764-SH, NDST2 shRNA (h) Lentiviral Particles: sc-40763-V and NDST2 shRNA (m) Lentiviral Particles: sc-40764-V.

Positive Controls: NDST2 (h): 293T Lysate: sc-115354.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



NDST2 (D-20): sc-16764. Western blot analysis of NDST2 expression in non-transfected: sc-117752 (**A**) and human NDST2 transfected: sc-115354 (**B**) 293T whole cell lysates.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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