

NDST1 (FF-2): sc-100790

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 shares the most homology with NDST2. 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. 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., et al N-sulfotransferase gene from the Treacher Collins syndrome candidate region at 5q32-q33.1. *Genomics* 26: 239-244.
2. Humphries, D.E., et al. 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., et al. 2001. Multiple iso-zymes of heparan sulfate/heparin GlcNAc N-deacetylase/GlcN N-sulfotransferase. Structure and activity of the fourth member, NDST4. *J. Biol. Chem.* 276: 5876-5882.

CHROMOSOMAL LOCATION

Genetic locus: NDST1 (human) mapping to 5q33.1.

SOURCE

NDST1 (FF-2) is a mouse monoclonal antibody raised against recombinant NDST1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

NDST1 (FF-2) is recommended for detection of NDST1 of 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for NDST1 siRNA (h): sc-40761, NDST1 shRNA Plasmid (h): sc-40761-SH and NDST1 shRNA (h) Lentiviral Particles: sc-40761-V.

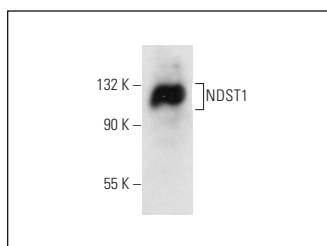
Molecular Weight of NDST1: 101 kDa.

Positive Controls: A549 cell lysate: sc-2413 or HeLa nuclear extract: sc-2120.

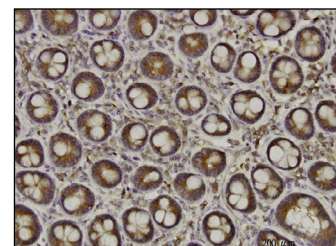
RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



NDST1 (FF-2): sc-100790. Western blot analysis of NDST1 expression in HeLa nuclear extract.



NDST1 (FF-2): sc-100790. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human small intestine tissue showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Fernández-Vega, I., et al. 2015. Heparan sulfate proteoglycans undergo differential expression alterations in right sided colorectal cancer, depending on their metastatic character. *BMC Cancer* 15: 742.

RESEARCH USE

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