SANTA CRUZ BIOTECHNOLOGY, INC.

NDST (E-9): sc-374529

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 Ndeacetylase/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 5q33.1, 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 4q26 and 4q26, 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.

SOURCE

NDST (E-9) is a mouse monoclonal antibody raised against amino acids 583-882 mapping at the C-terminus of NDST1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NDST (E-9) is available conjugated to agarose (sc-374529 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374529 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374529 PE), fluorescein (sc-374529 FITC), Alexa Fluor® 488 (sc-374529 AF488), Alexa Fluor® 546 (sc-374529 AF546), Alexa Fluor® 594 (sc-374529 AF594) or Alexa Fluor® 647 (sc-374529 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374529 AF680) or Alexa Fluor® 790 (sc-374529 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

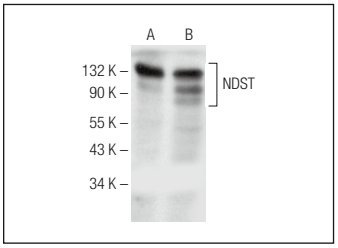
NDST (E-9) is recommended for detection of NDST1, NDST2, NDST3 and NDST4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 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).

Positive Controls: ES-2 cell lysate: sc-24674 or A549 cell lysate: sc-2413.

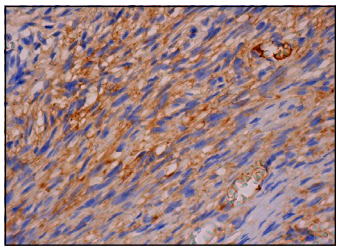
RECOMMENDED SUPPORT REAGENTS

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



NDST (E-9): sc-374529. Western blot analysis of NDST expression in A549 (**A**) and ES-2 (**B**) whole cell lysates.



NDST (E-9): sc-374529. Immunoperoxidase staining of formalin fixed, paraffin-embedded human ovary tissue showing cytoplasmic staining of ovarian stroma cells.

SELECT PRODUCT CITATIONS

1. Tkachyova, I., et al. 2016. NDST1 preferred promoter confirmation and identification of corresponding transcriptional inhibitors as substrate reduction agents for multiple mucopolysaccharidosis disorders. PLoS ONE 11: e0162145.
2. Poli, M., et al. 2019. Hepatic heparan sulfate is a master regulator of hepcidin expression and iron homeostasis in human hepatocytes and mice. J. Biol. Chem. 294: 13292-13303.
3. Flores, E.B., et al. 2020. Reduced cellular binding affinity has profoundly different impacts on the spread of distinct poxviruses. PLoS ONE 15: e0231977.
4. Poli, M., et al. 2020. Correction: hepatic heparan sulfate is a master regulator of hepcidin expression and iron homeostasis in human hepatocytes and mice. J. Biol. Chem. 295: 10508.
5. Zhang, C., et al. 2022. Monocytes deposit migrasomes to promote embryonic angiogenesis. Nat. Cell Biol. 24: 1726-1738.

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.