SANTA CRUZ BIOTECHNOLOGY, INC.

NANS (B-1): sc-514091

BACKGROUND

Sialic acids are a family of 9-carbon 2-keto-3-deoxy sugars that are found on the ends of glycoproteins and glycolipids and play important roles in recognition events within the cell. NANS (N-acetylneuraminic acid synthase), also known as SAS, is a 359 amino acid protein that contains one AFP (antifreeze protein)-like domain and functions in the biosynthesis of sialic acids. Expressed ubiquitously, NANS enzymatically catalyzes the H_2O-dependent formation of N-acetylneuraminic acid (Neu5Ac) and 2-keto-3-deoxy-D-glycero-D-galacto-nononic acid (KDN), both of which are sialic acids. NANS uses N-acetylmannosamine 6-phosphate as a substrate for Neu5Ac synthesis and mannose 6-phosphate as a substrate for KDN synthesis. Human NANS shares 36% identity with the *E. coli* protein neuB, suggesting a conserved function between species.

REFERENCES

1. Nakata, D., et al. 2000. Molecular cloning and expression of the mouse N-acetylneuraminic acid 9-phosphate synthase which does not have deaminoneuraminic acid (KDN) 9-phosphate synthase activity. Biochem. Biophys. Res. Commun. 273: 642-648.
2. Lawrence, S.M., et al. 2000. Cloning and expression of the human N-acetylneuraminic acid phosphate synthase gene with 2-keto-3-deoxy-D-glycero-D-galacto-nononic acid biosynthetic ability. J. Biol. Chem. 275: 17869-17877.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605202. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Hao, J., et al. 2005. Cloning, expression, and characterization of sialic acid synthases. Biochem. Biophys. Res. Commun. 338: 1507-1514.
5. Hamada, T., et al. 2006. Solution structure of the antifreeze-like domain of human sialic acid synthase. Protein Sci. 15: 1010-1016.

CHROMOSOMAL LOCATION

Genetic locus: NANS (human) mapping to 9q22.33; Nans (mouse) mapping to 4 B1.

SOURCE

NANS (B-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 84-102 within an internal region of NANS of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-514091 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

NANS (B-1) is recommended for detection of NANS 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for NANS siRNA (h): sc-92845, NANS siRNA (m): sc-149822, NANS shRNA Plasmid (h): sc-92845-SH, NANS shRNA Plasmid (m): sc-149822-SH, NANS shRNA (h) Lentiviral Particles: sc-92845-V and NANS shRNA (m) Lentiviral Particles: sc-149822-V.

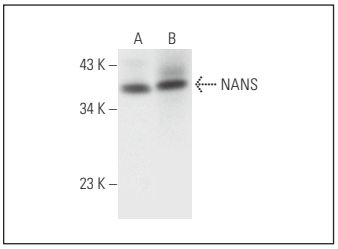
Molecular Weight of NANS: 40 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227 or JAR cell lysate: sc-2276.

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 L-Agarose: sc-2336 (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.

DATA



NANS (B-1): sc-514091. Western blot analysis of NANS expression in Hep G2 (**A**) and JAR (**B**) whole cell lysates.

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.