

NANS (B-6): sc-374133



The Power to Question

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 (anti-freeze protein)-like domain and functions in the biosynthesis of sialic acids. Expressed ubiquitously, NANS enzymatically catalyzes the H₂O-dependent formation of N-acetylneuraminic acid (Neu5Ac) and 2-keto-3-deoxy-D-glycero-D-galactononic 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 deaminneuraminic 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-nonic 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/>

CHROMOSOMAL LOCATION

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

SOURCE

NANS (B-6) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of NANS of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NANS (B-6) is available conjugated to agarose (sc-374133 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374133 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374133 PE), fluorescein (sc-374133 FITC), Alexa Fluor® 488 (sc-374133 AF488), Alexa Fluor® 546 (sc-374133 AF546), Alexa Fluor® 594 (sc-374133 AF594) or Alexa Fluor® 647 (sc-374133 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374133 AF680) or Alexa Fluor® 790 (sc-374133 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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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-6) 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), 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 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.

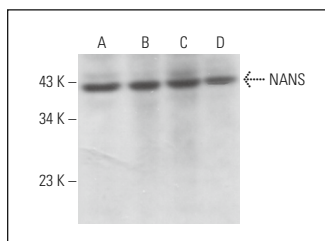
Molecular Weight of NANS: 40 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211, NIH/3T3 whole cell lysate: sc-2210 or KNRK whole cell lysate: sc-2214.

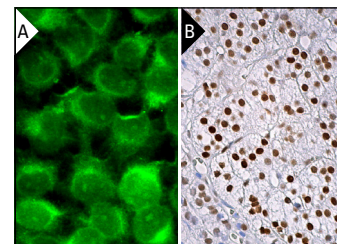
RECOMMENDED SUPPORT REAGENTS

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



NANS (B-6): sc-374133. Western blot analysis of NANS expression in AT3B-1 (A), KNRK (B), NIH/3T3 (C) and RAW 264.7 (D) whole cell lysates.



NANS (B-6): sc-374133. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing nuclear staining of glandular cells (B).

SELECT PRODUCT CITATIONS

1. Kim, E.K., et al. 2019. Proteomic analysis of primary colon cancer and synchronous solitary liver metastasis. *Cancer Genomics Proteomics* 16: 583-592.

RESEARCH USE

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