SANTA CRUZ BIOTECHNOLOGY, INC.

NNMT (G-4): sc-376048

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Nicotinamide N-methyltransferase (NNMT) catalyzes the N-methylation of nicotin-amide and other pyridines. NNMT activity in the human liver has a bimodal frequency distribution, indicating that its enzyme activity may be modulated through a genetic polymorphism, which could have functional implications for individual differences in drug and xenobiotic toxicity. The gene that encodes human NNMT is approximately 16.5 kb in length, consists of three exons and two introns and maps to 11q23.2. NNMT isolated from the human liver was determined to be 969 nucleotides in length, with a 792 nucleotide open reading frame that encodes a 264 amino acid protein. The NNMT gene is presumed to be a significant genetic determinant of plasma homocysteine levels in Spanish families, since it encodes an enzyme involved in homocysteine synthesis.

CHROMOSOMAL LOCATION

Genetic locus: NNMT (human) mapping to 11q23.2; Nnmt (mouse) mapping to 9 A5.3.

SOURCE

NNMT (G-4) is a mouse monoclonal antibody raised against amino acids 191-258 mapping near the C-terminus of NNMT of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-376048 X, 200 µg/0.1 ml.

NNMT (G-4) is available conjugated to agarose (sc-376048 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376048 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376048 PE), fluorescein (sc-376048 FITC), Alexa Fluor® 488 (sc-376048 AF488), Alexa Fluor® 546 (sc-376048 AF546), Alexa Fluor® 594 (sc-376048 AF594) or Alexa Fluor® 647 (sc-376048 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376048 AF680) or Alexa Fluor® 790 (sc-376048 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

NNMT (G-4) is recommended for detection of NNMT 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 NNMT siRNA (h): sc-61213, NNMT siRNA (m): sc-61214, NNMT shRNA Plasmid (h): sc-61213-SH, NNMT shRNA Plasmid (m): sc-61214-SH, NNMT shRNA (h) Lentiviral Particles: sc-61213-V and NNMT shRNA (m) Lentiviral Particles: sc-61214-V.

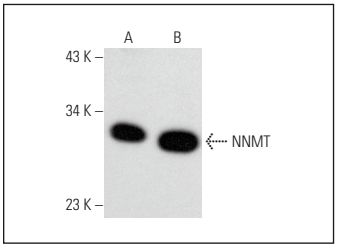
NNMT (G-4) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of NNMT: 30 kDa.

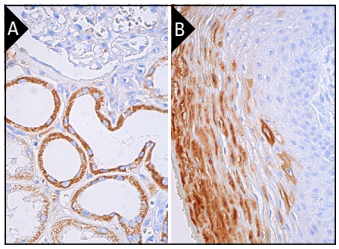
STORAGE

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

DATA



NNMT (G-4): sc-376048. Western blot analysis of NNMT expression in Caki-1 (**A**) and A549 (**B**) whole cell lysates.



NNMT (G-4): sc-376048. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human uterine cervix tissue showing cytoplasmic staining of squamous epithelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Win, K.T., et al. 2013. Nicotinamide N-methyltransferase overexpression is associated with Akt phosphorylation and indicates worse prognosis in patients with nasopharyngeal carcinoma. Tumour Biol. 34: 3923-3931.
2. Jung, J., et al. 2017. Nicotinamide metabolism regulates glioblastoma stem cell maintenance. JCI Insight 2: e90019.
3. Bach, D.H., et al. 2018. Targeting nicotinamide N-methyltransferase and miR-449a in EGFR-TKI-resistant non-small-cell lung cancer cells. Mol. Ther. Nucleic Acids 11: 455-467.
4. Eckert, M.A., et al. 2019. Proteomics reveals NNMT as a master metabolic regulator of cancer-associated fibroblasts. Nature 569: 723-728.
5. Tahara, S., et al. 2021. Nicotinamide N-methyltransferase is related to MELF pattern invasion in endometrioid carcinoma. Cancer Med. 10: 8630-8640.
6. Reustle, A., et al. 2022. Nicotinamide-N-methyltransferase is a promising metabolic drug target for primary and metastatic clear cell renal cell carcinoma. Clin. Transl. Med. 12: e883.
7. Stepinska, O., et al. 2022. Lipopolysaccharide affects energy metabolism and elevates nicotinamide N-methyltransferase level in human aortic endothelial cells (HAEC). Int. J. Biochem. Cell Biol. 151: 106292.
8. Guo, D., et al. 2023. Targeted reprogramming of vitamin B_3 metabolism as a nanotherapeutic strategy towards chemoresistant cancers. Adv. Mater. 35: e2301257.
9. Schweizer, L., et al. 2023. Spatial proteo-transcriptomic profiling reveals the molecular landscape of borderline ovarian tumors and their invasive progression. medRxiv. E-published.

RESEARCH USE

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