10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

NNMT Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1024C

Product Information

Application	WB, IHC-P, E
Primary Accession	P40261
Reactivity	Human, Rat, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB12625
Calculated MW	29574
Antigen Region	77-106

Additional Information

Gene ID	4837
Other Names	Nicotinamide N-methyltransferase, NNMT
Target/Specificity	This NNMT antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 77-106 amino acids from the Central region of human NNMT.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	NNMT Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	NNMT {ECO:0000303|PubMed:23455543}
Function	Catalyzes the N-methylation of nicotinamide using the universal methyl donor S-adenosyl-L-methionine to form N1- methylnicotinamide and S-adenosyl-L-homocysteine, a predominant nicotinamide/vitamin B3 clearance pathway (PubMed:21823666, PubMed:23455543, PubMed:8182091). Plays a central role in regulating cellular methylation

potential, by consuming S-adenosyl-L-methionine and limiting its availability for other methyltransferases. Actively mediates genome-wide epigenetic and transcriptional changes through hypomethylation of repressive chromatin marks, such as H3K27me3 (PubMed:23455543, PubMed:26571212, PubMed:31043742). In a developmental context, contributes to low levels of the repressive histone marks that characterize pluripotent embryonic stem cell pre-implantation state (PubMed:26571212). Acts as a metabolic regulator primarily on white adipose tissue energy expenditure as well as hepatic gluconeogenesis and cholesterol biosynthesis. In white adipocytes, regulates polyamine flux by consuming S-adenosyl-L-methionine which provides for propylamine group in polyamine biosynthesis, whereas by consuming nicotinamide controls NAD(+) levels through the salvage pathway (By similarity). Via its product N1-methylnicotinamide regulates protein acetylation in hepatocytes, by repressing the ubiquitination and increasing the stability of SIRT1 deacetylase (By similarity). Can also N-methylate other pyridines structurally related to nicotinamide and play a role in xenobiotic detoxification (PubMed:30044909).

Cellular Location Cytoplasm.

Tissue Location Predominantly expressed in the liver. A lower expression is seen in the kidney, lung, skeletal muscle, placenta and heart. Not detected in the brain or pancreas

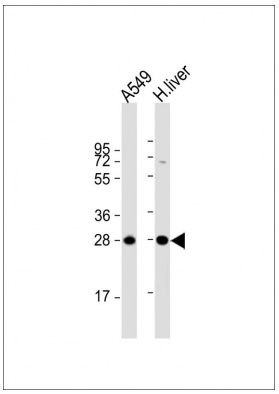
Background

N-methylation is one method by which drug and other xenobiotic compounds are metabolized by the liver. NNMT is the protein responsible for this enzymatic activity, which uses S-adenosyl methionine as the methyl donor.

References

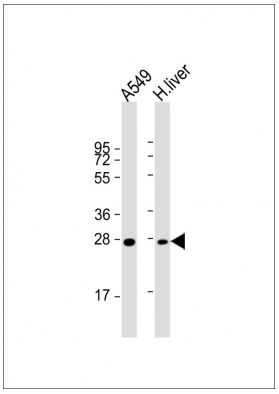
Xu,J., Thyroid 16 (2), 151-160 (2006)
Roessler,M., Clin. Cancer Res. 11 (18), 6550-6557 (2005)
Souto,J.C., Am. J. Hum. Genet. 76 (6), 925-933 (2005)

Images

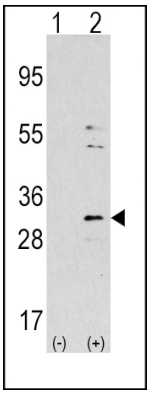


All lanes : Anti-NNMT Antibody (Center) at 1:2000 dilution Lane 1: A549 whole cell lysate Lane 2: human liver lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 30 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

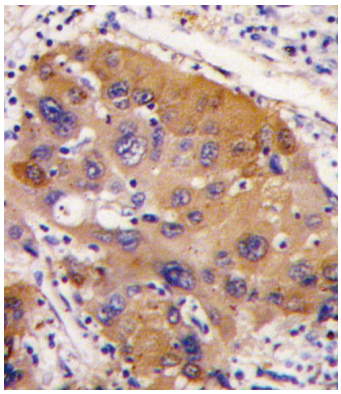
All lanes : Anti-NNMT Antibody (Center) at 1:2000 dilution Lane 1: A549 whole cell lysate Lane 2: human liver lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 30 kDa Blocking/Dilution



buffer: 5% NFDM/TBST.



Western blot analysis of NNMT (arrow) using rabbit polyclonal NNMT Antibody (Center)(Cat# AP1024c). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the NNMT gene (Lane 2) (Origene Technologies).



Formalin-fixed and paraffin-embedded human hepatocarcinoma tissue reacted with NNMT antibody (Center) (Cat# AP1024c), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.