



NMNAT2 (Nicotinamide mononucleotide adenylyltransferase 2)

Product Data Sheet

For Research Use Only, Not for use in diagnostic procedures

NMNAT2

(Nicotinamide mononucleotide adenylyltransferase 2)

Human, recombinant protein expressed in *E. coli.*, Active

Cat# CY-E1252-2

Amount: 50µg (1.0 µg/µl)

Lot:

Specific Activity: >50 units/µg

Introduction:

Nicotinamide mononucleotide adenylyltransferase (NMNAT) (EC2.7.7.1) is a central enzyme in NAD⁺ biosynthesis, transferring the adenylyl moiety of ATP to nicotinamide mononucleotide (NMN) or nicotinic acid mononucleotide (NaMN) resulting in the formation of NAD⁺ or NaAD⁺ and the release of pyrophosphate. As this reaction is reversible, the enzyme may in principle be used to form ATP and NMN from NAD⁺ and pyrophosphate.

NMNAT2 is predominantly expressed in human pancreas, insulinoma as well as in the brain, especially in the cerebrum, cerebellum, occipital lobe, frontal lobe, temporal lobe and putamen. Immunofluorescence microscopy localized endogenous NMNAT2 to the Golgi apparatus in human cell line. Endogenous NMNAT2 seem to be a labile axon survival factor, because specific depletion of NMNAT2 is sufficient to induce Wallerian-like degeneration of uninjured axons which endogenous NMNAT1 and NMNAT3 cannot prevent. Thus endogenous NMNAT2 represents an exciting new therapeutic target for axonal disorders.

Product Description:

human NMNAT2 (nicotinamide mononucleotide adenylyltransferase 2) containing an N-terminal GST-tag, expressed in *E. coli.* and purified by GSH-Sepharose chromatography.

Gene Information:

The gene accession number is NM_015039. The OMIM number is 608701.

Gene Aliases:

Pyridine nucleotide adenylyltransferase1 (PNAT2), NMN adenylyltransferase2

Formulation:

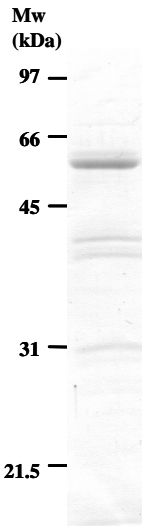
Recombinant NMNAT2 is supplied frozen in a buffer containing 20 mM Hepes KOH, pH 7.5, 1 mM DTT, 50 mM NaCl and 50% glycerol. Use a same buffer for dilution when needed.



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Molecular Weight: 59 kDa

Recombinant NMNAT2 demonstrates approximately 59 kDa band by SDS-PAGE analysis.



CBB stain

Storage:

Store product at -70°C. For optimal storage, aliquot target into smaller quantities after centrifugation and store at recommended temperature. For most favorable performance, AVOID REPEATED HANDLING AND MULTIPLE FREEZE/THAW CYCLES.

Stability:

Unopened vial at -70 °C, for 1 year after delivery.

Unit Definitions:

One unit is defined as the amount of nicotinamide mononucleotide adenylyl transferase required producing 1 μmol of NAD⁺ from nicotinamide mononucleotide (NMN) and ATP per minute at 30°C. Specific Activity will vary between production lots.

Assay condition:

Assay activity of NMNAT2 in a 100 μL reaction containing 50 mM Hepes KOH (pH 7.5), 0.65 mM NMN, 2 mM ATP, 1.2 mM MgCl₂, 1 mM DTT, 200 g/mL BSA, 1.5 % ethanol and 2 μg of alcohol dehydrogenase. Start the reaction by adding 10 μL of the NMNAT2 enzyme (2-5 ng/μL) Incubate at 30°C. Read fluorescence intensity for 60 to 90 minutes at 2.5 to 5 minute intervals using microtiter plate fluorometer with excitation at 340 nm and emission at 460 nm. Measure and calculate the rate of reaction while the reaction velocity remains constant.



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References:

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Related Products:

- *CycLex NAMPT Colorimetric Assay Kit: Cat# CY-1251
- *CycLex NMNAT Colorimetric Assay kit: Cat# CY-1252
- *CycLex NAD⁺/NADH Colorimetric Assay Kit: Cat# CY-1253
- *NAMPT (Nicotinamide Phosphoribosyltransferase): Cat# CY-E1251
- *NMNAT1 (Nicotinamide Mononucleotide Adenylyltransferase 1): Cat# CY-E1252-1
- *NMNAT2 (Nicotinamide Mononucleotide Adenylyltransferase 1): Cat# CY-E1252-2
- *CycLex SIRT1/Sir2 Deacetylase Fluorometric Assay Kit: Cat# CY-1151
- *CycLex SIRT2 Deacetylase Fluorometric Assay Kit: Cat# CY-1152
- *CycLex SIRT3 Deacetylase Fluorometric Assay Kit: Cat# CY-1153
- *CycLex SIRT6 Deacetylase Fluorometric Assay Kit: Cat# CY-1156
- *NAD(+)-Dependent Deacetylase SIRT1: Cat# CY-E1151
- *NAD(+)-Dependent Deacetylase SIRT2: Cat# CY-E1152
- *NAD(+)-Dependent Deacetylase SIRT3: Cat# CY-E1153
- *NAD(+)-Dependent Deacetylase SIRT6: Cat# CY-E1156

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