NMNAT3
(Nicotinamide Mononucleotide Adenylyltransferase 3)
Human, recombinant protein expressed in *E. coli.*, Active

Cat# CY-E1252-3

Amount: 100µg (0.5 µg/µl)
Lot:
Specific Activity: >0.5 units/µg

Introduction:

Nicotinamide mononucleotide adenylyltransferase (NMNAT) (EC 2.7.7.1) 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. NMNAT3 are mostly localized to the mitochondria, whereas NMNAT1 and NMNAT2 are localized to the nucleus and the Golgi complex, respectively. In human red blood cells, NMNAT3 is predominantly expressed rather than NMNAT1 and NMNAT2. The activity of NMNAT3 was low compared with that of NMNAT1. Analysis of the crystal structures revealed that NMNAT3 forms a tetramer, while NMNAT1 forms a hexamer and NMNAT2 has been suggested to forms a homodimer.

Product Description:

Human NMNAT3 (nicotinamide mononucleotide adenylyltransferase 3) containing an N-terminal GST-tag, expressed in *E. coil.* and purified by GSH-Sepharose chromatography.

Gene Information:

The gene accession number is NM_178177.

Gene Aliases:

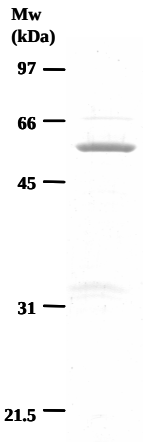
Pyridine nucleotide adenylyltransferase1 (PNAT3), NMN adenylyltransferase3

Formulation:

Recombinant NMNAT3 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.

Molecular Weight: 53 kDa

Recombinant NMNAT3 demonstrates approximately 53 kDa band by SDS-PAGE analysis.



Coomassie blue 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 among production lots.

Assay condition:

Assay activity of NMNAT3 in a 100 µL reaction containing 50 mM Hepes KOH (pH 7.5), 0.65 mM NMN, 2 mM ATP, 12 mM $MgCl_2$, 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 NMNAT3 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.

References:

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Related Products:

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*** 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 2) : Cat# CY-E1252-2**
*** NMNAT3 (Nicotinamide Mononucleotide Adenylyltransferase 3) : Cat# CY-E1252-3**
*** CycLex SIRT1/Sir2 Deacetylase Fluorometric Assay Kit : Cat# CY-1151**
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*** CycLex SIRT3 Deacetylase Fluorometric Assay Kit : Cat# CY-1153**
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*** NAD(+)-Dependent Deacetylase SIRT3 : Cat# CY-E1153**
*** NAD(+)-Dependent Deacetylase SIRT6 : Cat# CY-E1156**

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