

## NMNAT1, 1-279aa

Human, His-tagged, Recombinant, *E.coli*

Cat. No. IBATGP3194

**Full name:** Nicotinamide nucleotide adenylyltransferase 1

**NCBI Accession No.:** NP\_073624

**Synonyms:** NMNAT, PNAT1

**Description:** NMNAT1, also known as NMNAT or PNAT1, is a central enzyme in NAD biosynthesis, catalyzing the condensation of nicotinamide mononucleotide (NMN) or nicotinic acid mononucleotide (NaMN) with the AMP moiety of ATP to form NAD or NaAD. It is widely expressed with high levels in skeletal muscle, heart, liver and kidney. This protein appears to have the ability to protect against axonal degeneration following mechanical or toxic insults. Recombinant human NMNAT1 protein, fused to His-tag at N-terminus, was expressed in *E.coli* and purified by using conventional chromatography techniques.

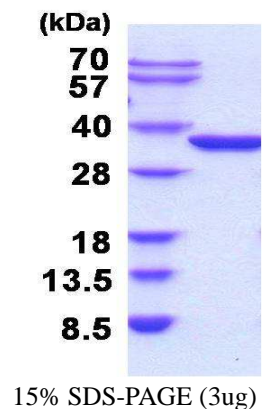
**Form:** Liquid. 20mM Tris-HCl buffer (pH8.0) containing 20% glycerol, 0.1M NaCl, 1mM DTT. 1mM EDTA

**Molecular Weight:** 36.0 kDa (315aa) confirmed by MALDI-TOF

**Purity:** > 95% by SDS - PAGE

**Concentration:** 1 mg/ml (determined by Bradford assay)

**Biological activity:** Specific activity is > 7,000 pmol/min/ug, and was obtained by measuring the beta-NAD from nicotinamide mononucleotide and ATP per minute at pH 8.0 at 37C.



### Sequences of aminoacids:

MRGSHHHHHH GMASMTGGQQ MGRDLYDDDD KDRWGSMENS EKTEVLLAC GSFNPITNMH LRLFELAKDY MNGTGRTYTVV KGIISPVGDA  
YKKKGLIPAY HRVIMAEELAT KNSKWVEVDI WESLQKEWKE TLKVLRRHQE KLEASDCDHQ QNSPTLERPG RKRKWTETQD SSQKKSLEPK  
TKAVPKVKLL CGADLLESFA VPNLWKSEDI TQIVANYGLI CVTRAGNDAQ KFIYESDVLW KHRSNIHVVN EWIANDISSI KIRRALRRGQ  
SIRYLVPDLV QEYIEKHNLY SSESEDRNAG VILAPLQRNT AEAK

### Activity Assay

1. Prepare a 180ul assay buffer into a suitable container. The concentrations are 50mM Tris-HCl (pH8.0), 50mM semicarbazide, 22mM magnesium chloride (MgCl<sub>2</sub>), 2.2mM beta-NMN, 2.2mM ATP, 5.5unit ADH, 2.2% (v/v) ethanol.
2. Equilibrate to 37C and monitor at A340nm until the value is constant using a spectrophotometer.
3. Add 20ul of recombinant NMNAT1 protein 20ug/ml in assay buffer.
4. Mix by inversion and record the decrease at A340nm for approximately 5 minutes.

**For research use only. This product is not intended or approved for human, diagnostics or veterinary use.**



Manufactured for:

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# Product information

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## General references:

Emanuelli M. et al. (2001) *J Biol Chem.* 276(1):406-12.

Zhou T., et al. (2002) *J Biol Chem.* 277(15):13148-54.

**Storage:** Can be stored at +4°C short term (1-2 weeks). For long term storage, aliquot and store at -20°C or -70°C. Avoid repeated freezing and thawing cycles.

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