Recombinant NMNA1 protein (His tag)

Catalog Number	545977
Synonyms	NMN/NaMN adenylyltransferase 1; Nicotinamide-nucleotide adenylyltransferase 1; NMN adenylyltransferase 1; Nicotinate-nucleotide adenylyltransferase 1; NaMN adenylyltransferase 1
Species	Human
Expression System	E. coli
Accession	Q9HAN9
Molecular Weight	Predictes a molecular mass of 16.86 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 17 kDa band.

Product Information

Sequence Region	146-279
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>88%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 146-279 aa (Q9HAN9) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	Recombinant Human NMNAT1 Fragment (aa 146-279) is a high-quality protein product designed for structural and biochemical studies. This 134-amino acid fragment of Nicotinamide/nicotinic acid mononucleotide adenylyltransferase 1 represents a stable, soluble unit that maintains key functional characteristics of the full-length enzyme, which plays crucial roles in NAD+ biosynthesis and nuclear energy metabolism. Nicotinamide/nicotinic acid mononucleotide adenylyltransferase 1 (NMNAT1) is a key enzyme in NAD+ biosynthesis, catalyzing the formation of NAD+ from nicotinamide mononucleotide (NMN) and ATP with equal efficiency for nicotinic acid mononucleotide (NaMN). The enzyme also demonstrates pyrophosphorolytic cleavage activity, preferentially acting on NAD+ and NaAD. NMNAT1 is localized to the nucleus where it participates in nuclear ATP generation required for energy-consuming chromatin remodeling events. Additionally, it serves as a cofactor for glutamate and aspartate ADP-ribosylation by directing PARP1 catalytic activity to histone residues. The enzyme shows substrate specificity, effectively utilizing triazofurin monophosphate but failing to cleave phosphorylated dinucleotides such as NADP+, NADPH, and NaADP+. Beyond its metabolic functions, NMNAT1 provides protection against axonal degeneration following mechanical or toxic insults, though this protective role appears independent of cellular NAD+ levels while still potentially requiring enzymatic activity.