

Recombinant Mouse NDKA Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP51285

Size: 10ug, 100ug

Protein Name: Nucleoside diphosphate kinase A (NDP kinase A) (NDPK A) (EC 2.7.4.6) (Farnesyl diphosphate kinase NME1) (EC 2.7.4.18) (Histidine protein kinase NDK) (EC 2.7.13.3) (Metastasis inhibition factor NM23) (NDPK-A) (Non-specific serine/threonine protein kinase NME1) (EC 2.7.11.1) (Nucleoside diphosphate kinase 1) (NDK1) (Putative 3'-5'-DNA exonuclease NDK1) (EC 3.1.11.-) (Putative granzyme A-activated DNA endonuclease) (GAAD) (EC 3.1.24.-) (Tumor metastatic process-associated protein) (nm23-M1)

Synonym: Nme1, Nm23

UniProt ID: P15532

UniProt Link: www.uniprot.org/uniprotkb/P15532/entry

Species Source: Mouse

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 152 AA

Molecular Weight: 17 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MANSSERTFIAIKPDGVQRGLVGEIIRFEQKGFRLVGLKFLQASEDLLKEHYTDLKDRPFFTGLVKYM
HSGPVVAMVWEGLNVVKTGRVMLGETNPADSKPGTIRGDFCIQVGRNIIHGSDSVKSAEKEISLWFAQ
PEELVEYKSCAQNWIIYE

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Nucleoside diphosphate kinase A (NDP kinase A) (NDPK A) (EC 2.7.4.6) (Farnesyl diphosphate kinase NME1) (EC 2.7.4.18) (Histidine protein kinase NDK) (EC 2.7.13.3) (Metastasis inhibition factor NM23) (NDPK-A) (Non-specific serine/threonine protein kinase NME1) (EC 2.7.11.1) (Nucleoside diphosphate kinase 1) (NDK1) (Putative 3'-5'-DNA exonuclease NDK1) (EC 3.1.11.-) (Putative granzyme A-activated DNA endonuclease) (GAAD) (EC 3.1.24.-) (Tumor metastatic process-associated protein) (nm23-M1) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Catalyzes the transfer of a gamma-phosphoryl group from a nucleoside triphosphate, mainly ATP, to a nucleoside diphosphate via a ping-pong mechanism involving a phosphohistidine intermediate, therefore contributing to the nucleoside triphosphate homeostasis (PubMed:37672589). Also phosphorylates geranyl pyrophosphate (GPP) and farnesyl pyrophosphate (FPP), linking it to isoprenoid metabolism. Additionally, functions as a non-specific serine/threonine kinase and histidine protein kinase, transferring phosphoryl groups from its active site to target proteins. May function as a Mg(2+)-dependent single-stranded DNA endonuclease as part of the SET complex, cooperating with the 3'-5' exonuclease TREX1 to mediate apoptotic DNA fragmentation in cytotoxic T lymphocytes. Reported to nick one DNA strand, enabling TREX1 to remove nucleotides from the free 3' end, enhancing DNA damage and suppressing DNA end reannealing and repair. Has been shown to cleave double strands DNA within the 3'-portions of both 5'-SHS silencer and NHE basal promoter element of the PDGFA gene, potentially repressing its transcription. May also function as a Mg(2+)-dependent 3'-5' DNA exonuclease, excising nucleotides from 3' single-stranded DNA or DNA with 3' single strand overhangs, suggesting a role in DNA nucleolytic processing (By similarity). Involved in the regulation of tumor metastasis and cellular differentiation (PubMed:2013093, PubMed:3346912). Also required for cell motility (By similarity). May control, with NME2, AcCoA usage between histone acetylation and fatty acid synthesis, possibly by binding and releasing AcCoA at transcriptionally active chromatin regions in proximity to histone acetyltransferase (HAT) (PubMed:37672589).

Subcellular Localization: Cytoplasm . Nucleus . Cell membrane . Note=Cell-cycle dependent nuclear localization which can be induced by degradation of the SET complex by GzmA. In response to DNA damage, translocates to the nucleus where it might participate in DNA nucleolytic processing.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.