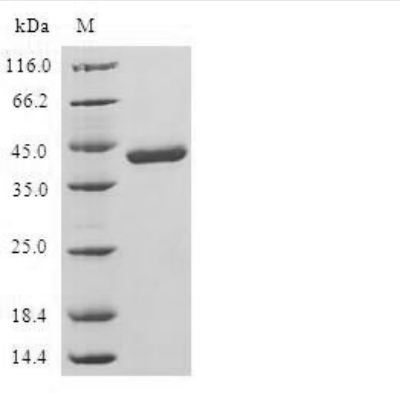
Recombinant Human Nucleoside diphosphate kinase, mitochondrial (NME4)

Product Code	CSB-EP015889HU
Relevance	Major role in the synthesis of nucleoside triphosphates other than ATP. The ATP gamma phosphate is transferred to the NDP beta phosphate via a ping-pong mechanism, using a phosphorylated active-site intermediate. Through the catalyzed exchange of gamma-phosphate between di- and triphosphonucleosides participates in regulation of intracellular nucleotide homeostasis. Binds to anionic phospholipids, predominantly to cardiolipin; the binding inhibits its phosphotransfer activity. Acts as mitochondria-specific NDK; its association with cardiolipin-containing mitochondrial inner membrane is coupled to respiration suggesting that ADP locally regenerated in the mitochondrion innermembrane space by its activity is directly taken up via ANT ADP/ATP translocase into the matrix space to stimulate respiratory ATP regeneration. Proposed to increase GTP-loading on dynamin-related GTPase OPA1 in mitochondria. In vitro can induce liposome cross-linking suggesting that it can cross-link inner and outer membranes to form contact sites, and promotes intermembrane migration of anionic phosphoplipids. Promotes the redistribution of cardiolipin between the mitochondrial inner membrane and outer membrane which is implicated in pro-apoptotic signaling.
Abbreviation	Recombinant Human NME4 protein
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	O00746
Alias	Nucleoside diphosphate kinase D
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	SWTRERTLVAVKPDGVQRRLVGDVIQRFERRGFTLVGMKMLQAPESVLAEHY QDLRRKPFYPALIRYMSSGPVVAMVWEGYNVVRASRAMIGHTDSAEAAPGTI RGDFSVHISRNVIHASDSVEGAQREIQLWFQSSELVSWADGGQHSSIHPA
Research Area	Signal Transduction
Source	E.coli
Target Names	NME4
Protein Names	Recommended name: Nucleoside diphosphate kinase, mitochondrial Short name= NDK Short name= NDP kinase, mitochondrial EC= 2.7.4.6 Alternative name(s): Nucleoside diphosphate kinase D Short name= NDPKD nm23-H4

Expression Region	1-187aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal GST-tagged
Mol. Weight	44.3kDa
Protein Length	Full Length

Image



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

This Human NME4 recombinant protein was produced in E.coli, where the gene sequence encoding Human NME4 (1-187aa) was expressed with the N-terminal GST tag. The purity of this NME4 protein was greater than 90% by SDS-PAGE. NME4 is an enzyme located within the mitochondria, and it is associated with nucleotide metabolism and cellular energy production. Specifically, NME4 catalyzes the reaction of nucleotide diphosphorylation, converting a nucleotide monophosphate into a nucleotide diphosphate. This is an important biochemical process that occurs within mitochondria and is closely related to the generation of adenosine triphosphate (ATP). The primary biological role of NME4 is to maintain the production of ATP within the mitochondria. ATP is the primary energy molecule inside cells, and it plays a crucial role in various biological processes, including muscle contraction, cell signal transduction, and cell division. Therefore, NME4 is essential for maintaining normal cellular functions and survival by ensuring an adequate supply of ATP.

Reconstitution

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.

Shelf Life

The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself.
Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.