Recombinant Human AK4/AK3L1 Protein

Catalog Number: PKSH030849

Note: *Centrifuge before opening to ensure complete recovery of vial contents.*

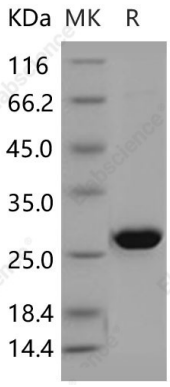
Description

Species	Human
Source	Baculovirus-Insect Cells-derived Human AK4/AK3L1 protein Ala 2-Tyr 223
Calculated MW	25.3 kDa
Observed MW	27 kDa
Accession	P27144-1
Bio-activity	Not validated for activity

Properties

Purity	> 95% as determined by reducing SDS-PAGE.
Endotoxin	< 1.0 EU per μg of the protein as determined by the LAL method.
Storage	Store at < -20°C, stable for 6 months. Please minimize freeze-thaw cycles.
Shipping	This product is provided as lyophilized powder which is shipped with ice packs.
Formulation	Supplied as sterile 20 mM Tris, 500 mM NaCl, pH 8.0 Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printed manual.
Reconstitution	Please refer to the printed manual for detailed information.

Data



> 95 % as determined by reducing SDS-PAGE.

Background

Adenylate kinase isoenzyme 4; mitochondrial; also known as ATP-AMP transphosphorylase; Adenylate kinase 3-like; AK4 and AK3L1; is a member theadenylate kinase family. AK4/AK3L1 is localized to the mitochondrial matrix. Adenylate kinases regulate the adenine and guanine nucleotide compositions within a cell by catalyzing the reversible transfer of phosphate group among these nucleotides. Five isozymes of adenylate kinase have been identified in vertebrates. Expression of these isozymes is tissue-specific and developmentally regulated. AK4/AK3L1 catalyzes the reversible transfer of the terminal phosphate group between ATP and AMP. It may also be active with GTP. Adenylate kinase 4 (AK4/AK3L1) is a unique member with no enzymatic activity in the adenylate kinase (AK) family although it shares high sequence homology with other AKs. It remains unclear what physiological function AK4 might play or why it is enzymatically inactive. AK4/AK3L1 retains the capability of binding nucleotides. It has a glutamine residue instead of a key arginine residue in the active site well conserved in other AKs. The enzymatically inactive AK4 is a stress responsive protein critical to cell survival and proliferation. AK4/AK3L1 is likely that the interaction with the mitochondrial inner membrane protein ANT is important for AK4 to exert the protective benefits to cells under stress. AK4/AK3L1 also acts on the specific mechanism of energy metabolism rather than control of the homeostasis of the ADP pool ubiquitously.

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