

AK1 Protein, Human (His-SUMO)

Cat. No.:	HY-P700576
Synonyms:	Adenylate kinase isoenzyme 1; ATP-AMP transphosphorylase 1
Species:	Human
Source:	E. coli
Accession:	P00568 (M1-K194)
Gene ID:	203
Molecular Weight:	37.6 kDa

PROPERTIES

AA Sequence	<pre> M E E K L K K T K I I F V V G G P G S G K G T Q C E K I V Q K Y G Y T H L S T G D L L R S E V S S G S A R G K K L S E I M E K G Q L V P L E T V L D M L R D A M V A K V N T S K G F L I D G Y P R E V Q Q G E E F E R R I G Q P T L L L Y V D A G P E T M T Q R L L K R G E T S G R V D D N E E T I K K R L E T Y Y K A T E P V I A F Y E K R G I V R K V N A E G S V D S V F S Q V C T H L D A L K </pre>
Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of Tris/PBS-based buffer, 6% Trehalose, pH 8.0.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	<p>Adenylate Kinase 1 (AK1) is a versatile enzyme that plays a crucial role in cellular energy metabolism. It catalyzes the reversible transfer of the terminal phosphate group between ATP and AMP, a fundamental step in maintaining adenylate pools and cellular energy homeostasis. In addition to its canonical role, AK1 exhibits nucleoside diphosphate kinase activity, enabling the production of various nucleoside triphosphates (ATP, CTP, GTP, UTP, dATP, dCTP, dGTP, and dTTP) from their corresponding diphosphate substrates, utilizing either ATP or GTP as a phosphate donor. Furthermore, AK1 displays a lower-rate catalysis of the synthesis of thiamine triphosphate (ThTP) from thiamine diphosphate (ThDP) and ADP, indicating</p>
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a potential involvement in thiamine metabolism. The multifunctionality of AK1 highlights its importance in cellular energy regulation and nucleotide biosynthesis.

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA