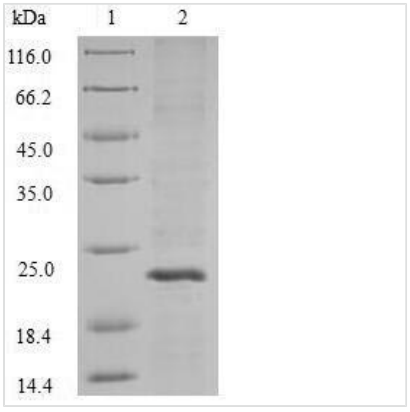
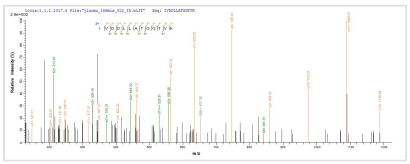
Recombinant Streptococcus pyogenes serotype M1 Adenine phosphoribosyltransferase (apt)

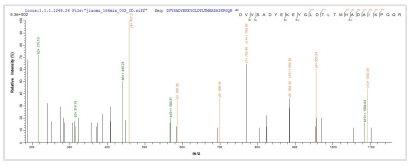
Product Code	CSB-BP001954SMT
Relevance	Catalyzes a salvage reaction resulting in the formation of AMP, that is energically less costly than de novo synthesis.
Abbreviation	Recombinant Streptococcus pyogenes serotype M1 apt protein
Storage	The shelf life is related to many factors, storage state, buffer 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.	P63546
Product Type	Recombinant Protein
Immunogen Species	Streptococcus pyogenes serotype M1
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	MDLTNYIASIKDYPKAGITFRDISPLMADGKAYSYAIREIAQYACDKDIDMVVGPEARGFIIGCPVAVELGIGFAPVRKPGKLPRDVVSADYEKEYGLDTLTMHADAIKPGQRVLIVDDLLATGGTVKATIEMIEKLGGIVAGCAFLIELEGLNGRHAIRNYDYKVLMQFPG
Research Area	others
Source	Baculovirus
Target Names	apt
Protein Names	Recommended name: Adenine phosphoribosyltransferase Short name= APRT EC= 2.4.2.7
Expression Region	1-172aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-tagged and C-terminal Myc-tagged
Mol. Weight	22.7kDa
Protein Length	Full Length
Image	



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



Based on the SEQUEST from database of Baculovirus host and target protein, the LC-MS/MS Analysis result of CSB-BP001954SMT could indicate that this peptide derived from Baculovirus-expressed Streptococcus pyogenes serotype M1 apt.



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Description

Recombinant Streptococcus pyogenes serotype M1 Adenine phosphoribosyltransferase is produced using the baculovirus expression system. This full-length protein spans amino acids 1 to 172 and comes tagged with an N-terminal 10xHis-tag and a C-terminal Myc-tag, which appears to make purification and detection more straightforward. SDS-PAGE analysis indicates a purity greater than 90%, suggesting it may be suitable for various research applications.

Adenine phosphoribosyltransferase is an enzyme that works within the purine salvage pathway, where it catalyzes the conversion of adenine to AMP. This protein likely plays an important role in nucleotide metabolism by helping recycle adenine efficiently. Studying it could shed light on purine metabolism and might offer insights into bacterial physiology—perhaps even revealing potential antimicrobial targets.

Potential Applications

Note: The applications listed below are based on what we know about this protein's biological functions, published research, and experience from experts in the field. However, we haven't fully tested all of these applications ourselves yet. We'd recommend running some preliminary tests first to make sure they work for your specific research goals.

1. Antibody Development and Immunoassay Studies

This recombinant S. pyogenes adenine phosphoribosyltransferase could work as an immunogen for creating specific antibodies against the bacterial enzyme. The dual-tagged protein (N-terminal His-tag and C-terminal Myc-tag) seems to offer flexible detection and purification options in immunoassay development. With >90% purity, it appears suitable for producing high-quality antibodies with potentially minimal cross-reactivity to contaminants. These antibodies might prove valuable as research tools for studying S. pyogenes metabolism and infection mechanisms in laboratory settings.

2. Protein-Protein Interaction Studies

The dual-tag system may allow for thorough protein interaction screening using both His-tag and Myc-tag based pull-down assays. Researchers could investigate possible binding partners of S. pyogenes adenine phosphoribosyltransferase in bacterial lysates or with purified candidate proteins. The baculovirus expression system provides proper eukaryotic folding machinery, which might preserve native protein conformations that are important for interaction studies. This approach could potentially reveal new regulatory mechanisms or metabolic pathway connections in streptococcal purine metabolism.

3. Comparative Enzyme Studies and Inhibitor Screening Platforms

This recombinant protein appears to serve as a useful reference standard for comparative studies with adenine phosphoribosyltransferases from other bacterial species or strains. The high purity level seems to allow reliable biochemical characterization and comparison of enzymatic properties across different organisms. Researchers might use this protein in screening assays to identify potential species-specific differences in substrate specificity or kinetic parameters. The stable recombinant format could provide consistent material for reproducible comparative analyses.

4. Structural Biology Sample Preparation

The >90% purity and dual-tag system suggest this protein may be suitable for preliminary structural studies and sample optimization experiments. Researchers could use the His-tag for efficient purification protocols while using the Myc-tag for detection during purification optimization. The baculovirus expression system often produces proteins with better folding characteristics compared to bacterial systems, which might improve sample quality for biophysical analyses. This recombinant protein could serve as starting material for developing purification protocols aimed at achieving the higher purity levels that advanced structural determination methods typically require.

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.