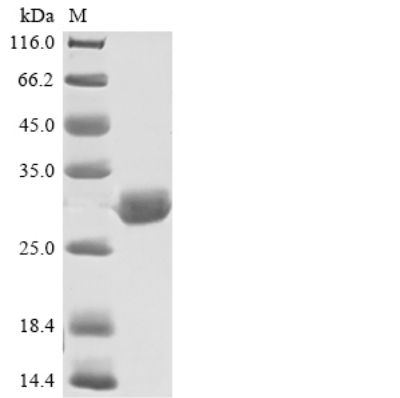
Recombinant Bovine Apolipoprotein A-I (APOA1), partial

Product Code	CSB-EP001913BOa0
Abbreviation	Recombinant Bovine APOA1 protein, partial
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.	P15497
Storage Buffer	Tris-based buffer,50% glycerol
Product Type	Recombinant Proteins
Immunogen Species	Bos taurus (Bovine)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	DDPQSSWDRVKDFATVYVEAIKDSGRDYVAQFEASALGKQLNLKLLDNWDTL ASTLSKVREQLGPVTQEFWDNLEKETASLRQEMHKDLEEVKQKVQPYLDEFQ KKWHEEVEIYRQKVAPLGEEFREGARQKVQELQDKLSPLAQELRDRARAHVE TLRQQLAPYSDDLRQRLTARLEALKEGGGSLAEYHAKASEQLKALGEKAKPVL EDLRQGLLPVLESLKVSILAAIDEASKKLNAQ
Research Area	Cardiovascular
Source	E.coli
Target Names	APOA1
Expression Region	25-265aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	31.6 kDa
Protein Length	Partial
Image	



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

Description

Recombinant Bovine Apolipoprotein A-I (APOA1) comes from E. coli expression and includes an N-terminal 6xHis-tag, which makes purification and detection much simpler. The protein represents a partial sequence—specifically amino acids 25-265 of bovine APOA1. SDS-PAGE analysis indicates purity levels above 85%. This product is strictly for research purposes and should not be used for therapeutic or diagnostic applications.

Apolipoprotein A-I (APOA1) appears to be central to lipid metabolism. It's the main protein found in high-density lipoprotein (HDL) circulating in plasma. The protein seems particularly important for reverse cholesterol transport—moving cholesterol from tissues back to the liver where it can be eliminated. Cardiovascular researchers often focus on APOA1 because of its apparent role in maintaining lipid balance and its potential effects on heart health.

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. In Vitro Lipid Binding and HDL Reconstitution Studies

This recombinant bovine APOA1 may prove useful for examining how lipids and proteins interact, plus how HDL particles form under controlled lab conditions. The purified protein lets researchers dig into the molecular details of lipid binding and figure out what structural elements HDL assembly actually requires—typically using synthetic phospholipids and cholesterol. That N-terminal His-tag makes protein purification and measurement straightforward, which is helpful for precise studies of lipid-protein complexes. These experiments might reveal fundamental aspects of how apolipoproteins work and how HDL forms in the first place.

2. Comparative Protein Structure and Function Analysis

Bovine APOA1 could serve as a solid tool for comparing how apolipoprotein structure and function differ between species—particularly when looking at bovine versus human or other mammalian versions. Researchers can run biochemical tests to compare things like lipid binding strength, protein stability, and structural properties across different APOA1 variants. The His-tag format allows for consistent purification methods regardless of which protein variant is being studied, making direct comparisons more reliable. Studies like these help clarify what's been conserved through evolution and what's changed in apolipoprotein biology.

3. Antibody Development and Immunoassay Applications

This recombinant protein works well as an antigen for creating antibodies

specific to bovine APOA1 or for building immunoassays that target bovine lipoproteins. The high purity makes it appropriate for immunization protocols and as a standard in ELISA-based detection systems. The His-tag can be particularly useful for oriented attachment to nickel-coated surfaces in biosensor work or for pull-down experiments aimed at finding proteins that interact with APOA1. These approaches support research into bovine lipid metabolism and cardiovascular function.

4. Protein-Protein Interaction Studies

His-tagged bovine APOA1 may be valuable for pull-down assays and co-immunoprecipitation experiments designed to find and characterize proteins that bind to APOA1 in bovine systems. The tag allows efficient capture of both the protein and its binding partners through nickel affinity chromatography, followed by mass spectrometry to identify what's been captured. These studies could uncover new regulatory pathways and protein networks involved in lipid metabolism and transport. The recombinant format likely ensures consistent results without contamination from other plasma proteins.

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