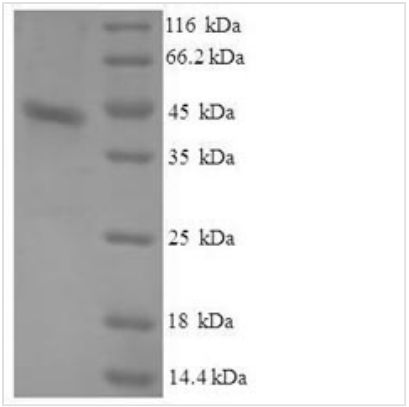
Recombinant Dog Serum amyloid A protein (SAA1)

Product Code	CSB-EP020656DO
Relevance	Major acute phase reactant. Apolipoprotein of the HDL complex.
Abbreviation	Recombinant Dog SAA1 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.	P19708
Alias	Amyloid fibril protein AA
Product Type	Recombinant Protein
Immunogen Species	Canis lupus familiaris (Dog) (Canis familiaris)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	QWYSFVSEAAQGAWDMWRAYSDMREANYKNSDKYFHARGNYDAAQRGPG GAWAAKVISDARENSQRITDLLRFGDSGHGAEDSKADQAANEWGRSGKDPN HFRPAGLPDKY
Research Area	Others
Source	E.coli
Target Names	SAA1
Expression Region	19-129aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-GST-tagged
Mol. Weight	42.5kDa
Protein Length	Full Length of Mature Protein
Image	 (Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

Recombinant Dog Serum amyloid A protein (SAA1) is expressed in E. coli and contains the complete mature protein sequence from amino acids 19 to 129. The protein is produced with an N-terminal 6xHis-GST tag that aids in purification and detection. Purity levels appear to exceed 90% based on SDS-PAGE verification, which likely ensures a reliable reagent for research applications. This product is designated for research use only.

Serum amyloid A protein (SAA1) seems to play a critical role in the acute-phase response—essentially a rapid inflammatory reaction to tissue injury or infection. It acts as a major acute-phase reactant and is involved in lipid metabolism and transport. Scientists also study SAA1 for its potential involvement in inflammatory diseases, and it serves as an important biomarker in various research contexts.

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. Canine SAA1 Antibody Development and Validation

This recombinant dog SAA1 protein may serve as an immunogen for creating specific antibodies against canine serum amyloid A protein. The N-terminal His-GST tag helps with purification and immobilization during immunization protocols and subsequent antibody screening assays. With purity levels above 90%, there's likely minimal cross-reactivity with other proteins during antibody development. These antibodies could become valuable research tools for studying acute phase responses in canine models.

2. Protein-Protein Interaction Studies Using Pull-Down Assays

The N-terminal His-GST tag allows efficient immobilization of the recombinant SAA1 protein on glutathione-sepharose beads or nickel-affinity matrices for pull-down experiments. Researchers can apply this system to identify potential binding partners of canine SAA1 from cell lysates or tissue extracts. The mature protein region (19-129aa) represents what appears to be the biologically relevant domain that would interact with cellular components in vivo.

3. Comparative Species Analysis of SAA1 Structure and Properties

This canine SAA1 protein can be used in comparative biochemical studies alongside SAA1 proteins from other species. Such studies may help investigate evolutionary conservation and species-specific differences. The recombinant protein allows for controlled in vitro analysis of physicochemical properties—things like aggregation behavior, thermal stability, and structural characteristics. These studies contribute to understanding SAA1 function across different mammalian species.

4. Development of Canine-Specific SAA1 Detection Assays

The purified recombinant protein serves as both a standard and positive control for developing enzyme-linked immunosorbent assays (ELISA) or other immunoassays specific for canine SAA1. The GST tag can be used for oriented immobilization in assay development. Meanwhile, the His tag provides alternative purification and detection options. These assays would likely become valuable research tools for veterinary research investigating acute phase responses in dogs.

5. Structural and Biophysical Characterization Studies

The high-purity recombinant SAA1 protein makes detailed structural analysis possible using techniques such as circular dichroism spectroscopy, dynamic light scattering, and nuclear magnetic resonance. The mature protein sequence (19-129aa) represents what appears to be the functional domain relevant for understanding SAA1 folding and stability. The dual tag system allows for flexible purification strategies to obtain protein suitable for various biophysical characterization methods.

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.