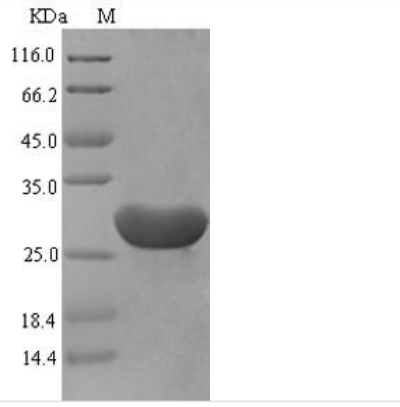
Recombinant Mouse Serum amyloid A-1 protein (Saa1)

Product Code	CSB-EP020656MO
Relevance	Major acute phase protein
Abbreviation	Recombinant Mouse 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.	P05366
Product Type	Recombinant Protein
Immunogen Species	Mus musculus (Mouse)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	GFFSFVHEAFQGAGDMWRAYTDMKEANWKNSDKYFHARGNYDAAQRGPGG VWAAEKISDGREAFQEFFGRGHEDTIADQEANRHGRSGKDPNYYRPPGLPDK Y
Research Area	Others
Source	E.coli
Target Names	Saa1
Expression Region	20-122aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-SUMO-tagged
Mol. Weight	27.8kDa
Protein Length	Full Length of Mature Protein
Image	 (Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

The production of recombinant mouse Serum amyloid A-1 protein (Saa1) in E. coli involves several steps. First, the gene encoding the full length of the mature Saa1 protein (20-122aa) is co-cloned into an expression vector with an N-terminal 6xHis-SUMO-tag gene and transformed into E. coli cells. The bacteria are cultured under conditions that induce protein expression. After sufficient growth, the cells are lysed to release the recombinant Saa1 protein. The recombinant Saa1 protein is purified by affinity chromatography. Protein purity is assessed using SDS-PAGE, reaching up to 90%.

Mouse Saa1 is a member of the serum amyloid A family of apolipoproteins, known for its role as a sensitive acute-phase high-density lipoprotein [1]. Saa1 is predominantly secreted by hepatocytes and is widely accepted as an accurate and sensitive indicator of inflammation [2][3]. It is involved in immunomodulation in both sterile and non-sterile inflammation, regulating inflammation and immunity [4][5]. Saa1 has been identified as a potential prediction biomarker for metastasis of hepatocellular carcinoma [6]. Additionally, Saa1 induces inflammation, proliferation, and cell death in activated hepatic stellate cells [7].

Saa1 plays a crucial role in various physiological processes. It is involved in extracellular matrix remodeling in the human amnion, with implications for fetal membrane rupture. Moreover, Saa1 participates in parturition by being synthesized de novo in the placenta. In the context of sepsis-induced lung injury, mouse bone marrow mesenchymal stem cells have been found to inhibit lung injury via exosomal Saa1.

References:

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[5] Y. Wang, F. Cao, Y. Wang, G. Yu, & B. Jia, Silencing of saa1 inhibits palmitate- or high-fat diet induced insulin resistance through suppression of the nf-κb pathway, Molecular Medicine, vol. 25, no. 1, 2019. https://doi.org/10.1186/s10020-019-0075-4
[6] G. Li, Q. Shen, H. Xu, Y. Zhou, C. Li, Y. Liet al., Saa1 identified as a potential prediction biomarker for metastasis of hepatocellular carcinoma via multi-omics approaches, Frontiers in Oncology, vol. 13, 2023. https://doi.org/10.3389/fonc.2023.1138995

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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.