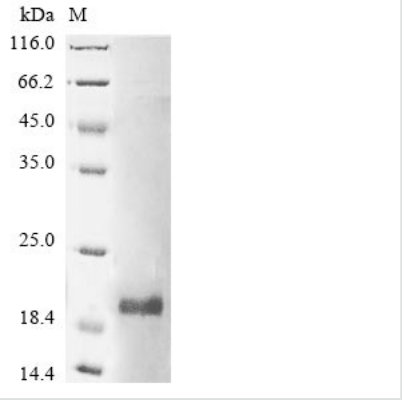
Recombinant Mouse Group 10 secretory phospholipase A2 (Pla2g10)

Product Code	CSB-EP882554MO
Abbreviation	Recombinant Mouse Pla2g10 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.	Q9QXX3
Form	Liquid or Lyophilized powder
Storage Buffer	If the delivery form is liquid, the default storage buffer is Tris/PBS-based buffer, 5%-50% glycerol. If the delivery form is lyophilized powder, the buffer before lyophilization is Tris/PBS-based buffer, 6% Trehalose.
Product Type	Recombinant Protein
Immunogen Species	Mus musculus (Mouse)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	GLLELAGTLDCVGPRSPMAYMNYGCYCGLGGHGEPRDAIDWCCYHHDCCYSRAQDAGCSPKLDRYPWKCMDHHILCGPAENKCQELLCRCDEELAYCLAGTEYHLKYLFFPSILCEKDSPKCN
Research Area	Metabolism
Source	E.coli
Target Names	Pla2g10
Expression Region	29-151aa
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	21.3 kDa
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 recombinant mouse Pla2g10 is generated in E. coli. The gene encoding the 29-151aa of the mouse Pla2g10 is co-inserted into an expression vector with an N-terminal 10xHis-tag and C-terminal Myc-tag gene and transformed into E. coli cells. These cells are grown and induced to produce the protein. The cells are lysed, and the protein is purified through affinity chromatography technique. Purity is assessed using SDS-PAGE, exceeding 85%.

PLA2G10 is an enzyme belonging to the secreted phospholipase A2 (sPLA2) family. PLA2G10 is highly expressed in the acrosome of male mouse sperm, indicating its role in sperm function [1]. PLA2G10 is associated with intestinal stem cell niche factors, inflammation, and cancer, where its expression levels were notably higher in specific populations [2]. Furthermore, PLA2G10 hydrolyzes phospholipids, showing a preference for certain types of fatty acids as substrates [3].

In the case of cancer, upregulation of PLA2G10 impairs T-cell infiltration, potentially dampening immunity [4]. This enzyme is related to sepsis because it catalyzes the hydrolysis of phospholipids, leading to the production of proinflammatory molecules [5].

References:
[1] R. Nahed, M. Dhellemmes, C. Payré, E. Blévec, J. Perrier, S. Hennebicqet al., Treatment of mouse sperm with a non-catalytic mutant of pla2g10 reveals that pla2g10 improves in vitro fertilization through both its enzymatic activity and as ligand of pla2r1, International Journal of Molecular Sciences, vol. 23, no. 14, p. 8033, 2022. https://doi.org/10.3390/ijms23148033
[2] M. Schewe, P. Franken, A. Sacchetti, M. Schmitt, R. Joosten, R. Böttcheret al., Secreted phospholipases a2 are intestinal stem cell niche factors with distinct roles in homeostasis, inflammation, and cancer, Cell Stem Cell, vol. 19, no. 1, p. 38-51, 2016. https://doi.org/10.1016/j.stem.2016.05.023
[3] S. Tokuoka, Y. Kita, M. Sato, T. Shimizu, Y. Yatomi, & Y. Oda, Development of tandem mass tag labeling method for lipid molecules containing carboxy and phosphate groups, and their stability in human serum, Metabolites, vol. 11, no. 1, p. 19, 2020. https://doi.org/10.3390/metabo11010019
[4] T. Zhang, Up-regulated pla2g10 in cancer impairs t cell infiltration to dampen immunity, Science Immunology, vol. 9, no. 94, 2024. https://doi.org/10.1126/sciimmunol.adh2334
[5] E. Berg, J. Paukovits, J. Axelband, J. Trager, D. Ryan, K. Cichonskiet al.,

Measurement of a novel biomarker, secretory phospholipase a2 group iia as a marker of sepsis: a pilot study, Journal of Emergencies Trauma and Shock, vol. 11, no. 2, p. 135, 2018. https://doi.org/10.4103/jets.jets_29_17

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.