# Recombinant Mouse Fatty acid-binding protein, liver protein (Fabp1) (Active)

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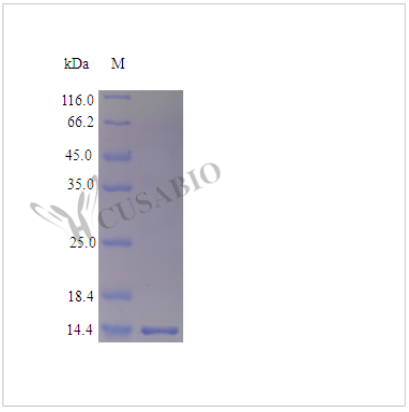
| **Product Code** | CSB-AP000551MO |
| **Abbreviation** | Recombinant Mouse Fabp1 protein (Active) |
| **Uniprot No.** | P12710 |
| **Form** | Lyophilized powder |
| **Storage Buffer** | Lyophilized from a 0.2 μm filtered concentrated solution in PBS, pH 7.4, 2 % trehalose |
| **Product Type** | Other |
| **Immunogen Species** | Mus musculus (Mouse) |
| **Biological Activity** | Fully biologically active when compared to standard. The binding affinity of rMuFABP1 for the synthetic ligand cis-parinaric acid has been measured by fluorescence titration. Half maximal fluorescence of 2.5 μM rMuFABP1 is achieved with approximately 5 μM cis-paranaric acid. |
| **Purity** | >95% as determined by SDS-PAGE. |
| **Sequence** | MNFSGKYQLQ SQENFEPFMK AIGLPEDLIQ KGKDIKGVSE IVHEGKKIKL TITYGPKVVR NEFTLGEECE LETMTGEKVK AVVKLEGDNK MVTTFKGIKS VTELNGDTIT NTMTLGDIVY KRVSKRI |
| **Research Area** | Signal Transduction |
| **Source** | E.coli |
| **Target Names** | Fabp1 |
| **Expression Region** | 1-127aa |
| **Notes** | Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week. |
| **Tag Info** | Tag-Free |
| **Mol. Weight** | 14.2 kDa |
| **Protein Length** | Full Length |
| **PubMed ID** | 15489334; 2760043; 21183079; 23806337; 23576753 |
| **Image** | |




## Description

The production of recombinant mouse fatty acid-binding protein, liver protein (Fabp1) begins with isolating the target gene that codes for the 1-127aa of mouse Fabp1 protein. This gene is cloned into an expression vector and introduced into E. coli cells through transfection. The E. coli cells express the protein, which is subsequently harvested from the cell lysate. The protein is purified using affinity chromatography. Finally, the protein's functionality is validated through various biochemical assays to ensure it performs its intended function effectively. Its purity is over 95% as determined by SDS-PAGE. It contains less than 1.0 EU/μg of endotoxin as measured by the LAL method. It is an active protein. The binding affinity of this recombinant FABP1 for the synthetic ligand cis-parinaric acid, measured by fluorescence titration, shows that half-maximal fluorescence of 2.5 μM rMuFABP1 is achieved with approximately 5 μM cis-parinaric acid.

Mouse Fabp1 is primarily involved in fatty acid uptake, oxidation, and very low-density lipoprotein secretion in the liver [1]. Research indicates that Fabp1 acts as an antioxidant protein, helping to mitigate hepatic oxidative stress during chronic ethanol ingestion [2]. Fabp1 is unique in that it is the only isoform capable of binding both fatty acids and fatty acyl-CoA, setting it apart from other Fabp isoforms [3]. Fabp1 interacts with plasma membrane proteins like FATP5, influencing fatty acid translocation and uptake [4]. Studies have shown that Fabp1 expression is associated with hepatic lipid metabolism, with implications in conditions such as non-alcoholic fatty liver disease [5]. Fabp1 has been linked to hepatic steatosis and inflammation, impacting the biotransformation of substances like δ9-THC [6]. Furthermore, Fabp1 also regulates lipid metabolism in various tissues, including facilitating triacylglycerol synthesis and secretion in the liver [7].

References:

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[3] T. Grevengoed, E. Klett, & R. Coleman, Acyl-coa metabolism and partitioning, Annual Review of Nutrition, vol. 34, no. 1, p. 1-30, 2014. https://doi.org/10.1146/annurev-nutr-071813-105541
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[5] H. You, H. Ma, X. Wang, X. Wen, C. Zhu, W. Maoet al., Association between liver-type fatty acid-binding protein and hyperuricemia before and after laparoscopic sleeve gastrectomy, Frontiers in Endocrinology, vol. 13, 2022. https://doi.org/10.3389/fendo.2022.993137
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[7] Y. Wang, K. Tang, W. Zhang, W. Guo, Y. Wang, & Z. Liu, Fatty acid-binding protein 1 increases steer fat deposition by facilitating the synthesis and secretion of triacylglycerol in liver, Plos One, vol. 14, no. 4, p. e0214144, 2019. https://doi.org/10.1371/journal.pone.0214144

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| **Endotoxin** | Less than 1.0 EU/μg as determined by LAL method. |
| **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.<br>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. |