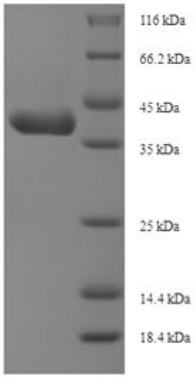
Recombinant Mouse Insulin-like growth factor-binding protein 1 (Igfbp1)

Product Code	CSB-EP011095MO
Relevance	IGF-binding proteins prolong the half-life of the IGFs and have been shown to either inhibit or stimulate the growth promoting effects of the IGFs on cell culture. They alter the interaction of IGFs with their cell surface receptors. Promotes cell migration .
Abbreviation	Recombinant Mouse Igfbp1 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.	P47876
Product Type	Recombinant Protein
Immunogen Species	Mus musculus (Mouse)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	APQPWHCAPCTAERLGLCPPVPASCPEISRPAGCGCCPTCALPMGAACGVAT ARCAQGLSCRALPGEPRPLHALTRGQGACVPEPAAPATSTLFSSQHEEAKAA VVSADELSESPEMTEEQLLDSFHLMAPSREDQPILWNAISTYSSMRAREIADLK KWKEPCQRELYKVLERLAAAQQKAGDEIYKFYLPNCNKNGFYHSKQCETSLD GEAGLCWCVYPWSGKKIPGSLETRGDPNCHQYFNVHN
Research Area	Others
Source	E.coli
Target Names	Igfbp1
Expression Region	26-272aa
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	42.9kDa
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 Mouse Insulin-like growth factor-binding protein 1 (Igfbp1) is produced in an E. coli expression system and contains the full-length mature protein sequence from amino acids 26 to 272. The protein includes an N-terminal 6xHis-SUMO tag that makes purification and detection more straightforward. SDS-PAGE analysis shows the product achieves greater than 90% purity, which appears suitable for demanding research applications.

Insulin-like growth factor-binding protein 1 (IGFBP1) seems to play an important role in controlling insulin-like growth factor (IGF) activity through high-affinity binding interactions. The protein likely influences growth and metabolic processes by regulating how much IGF remains available to cells. Research into developmental biology and endocrine function has focused considerable attention on this protein.

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. Protein-Protein Interaction Studies with IGF System Components

Researchers can examine binding interactions between this recombinant mouse Igfbp1 and insulin-like growth factors (IGF-I and IGF-II) along with other IGF system components through in vitro binding assays. The N-terminal His-SUMO tag makes purification possible and allows immobilization for surface plasmon resonance or bio-layer interferometry experiments that measure binding kinetics and affinities. Scientists may identify new protein partners or confirm existing interactions in the IGF signaling pathway using pull-down assays with the His tag. The >90% purity level supports quantitative biochemical analysis of these interactions.

2. Antibody Development and Validation

The purified recombinant mouse Igfbp1 works well as an antigen for creating mouse IGFBP1-specific antibodies in research settings. High purity (>90%)

suggests minimal cross-reactivity problems during immunization protocols for polyclonal or monoclonal antibody production. The protein can serve as both a positive control and standard in antibody validation experiments like Western blotting, ELISA, and immunoprecipitation assays. Detection and quantification during antibody screening becomes easier thanks to the His-SUMO tag.

3. Comparative Species Analysis and Evolutionary Studies

This mouse Igfbp1 protein may prove valuable in comparative biochemical studies when examined alongside IGFBP1 versions from other species to explore how binding properties and structural features have been conserved through evolution. Cross-species binding assays could reveal differences in IGF binding specificity and affinity between mouse and human IGFBP1 variants. The recombinant protein allows controlled in vitro experiments that examine species-specific differences in IGF system regulation. Such work might provide insights into how growth factor regulation mechanisms have adapted across different mammalian species.

4. Biochemical Characterization and Stability Studies

Researchers can subject the recombinant mouse Igfbp1 to detailed biochemical characterization, including thermal stability analysis, pH sensitivity testing, and proteolytic susceptibility assays. The His tag helps with protein quantification and tracking during stability experiments under various buffer conditions and temperatures. Circular dichroism spectroscopy offers a way to analyze secondary structure content and monitor conformational changes under different experimental conditions. These studies may provide essential biochemical data needed for optimizing storage conditions and experimental protocols for future research work.

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.