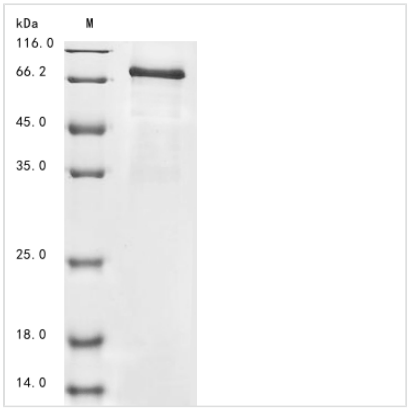
Recombinant Mouse Procollagen-lysine,2-oxoglutarate 5-dioxygenase 2 (Plod2)

Product Code	CSB-BP886417MO
Abbreviation	Recombinant Mouse Plod2 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.	Q9R0B9
Product Type	Recombinant Proteins
Immunogen Species	Mus musculus (Mouse)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	VAEETPGRIPADKLLVITVATKENDGFHRFMNSAKYFNYTVKVLGQGQEWRG GDGMNSIGGGQKVRLLKEAMEHYASQEDLVILFTECFDVVFAGGPEEVLKKFQ KTNHKIVFAADGLLWPDKRLADKYPVVHIGKRYLNSGGFIGYAPYISRLVQQW NLQDNDDDQLFYTKVYIDPLKREAFNITLDHKCKIFQALNGATDEVVLKFENGK SRVKNTFYETLPVAINGNGPTKILLNYFGNYVPNSWTQENGCALCDVDTIDLST VDVPPKVTLGVFIEQPTPFLPRFLNLLLTLDYPKEALQLFIHNKEVYHEKDIKVFV DKAKHDISSIKIVGPEENLSQAEARNMGMDFCRQDEKCDYYFSVDADVVLTNP RTLKFLIEQNRKIIAPLVTRHGKLWSNFWGALSPDGYYARSEDYVDIVQGNRV GIWNVPYMANVYLIQGKTLRSEMNERNYFVRDKLDPDMALCRNARDMGVFM YISNRHEFGRLISTANYNTSHLNNDFWQIFENPVDWKEKYINRDYSKIFTENIVE QPCPDVFWFPIFSERACDELVEEMEHYGKWSGGKHHDSRISGGYENVPTDDI HMKQIGLENVWLHFIREFIAPVTLKVFAGYYTKGFALLNFVVKYSPERQRSLRP HHDASTFTINIALNNVGEDFQGGGCKFLRYNCSIESPRKGWSFMHPGRLTHLH EGLPVKNGTRYIAVSFIDP
Research Area	Cancer
Source	Baculovirus
Target Names	Plod2
Protein Names	Recommended name: Procollagen-lysine,2-oxoglutarate 5-dioxygenase 2 EC= 1.14.11.4 Alternative name(s): Lysyl hydroxylase 2 Short name= LH2
Expression Region	26-737aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	C-terminal 6xHis-Myc-tagged
Mol. Weight	85.2
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 Procollagen-lysine,2-oxoglutarate 5-dioxygenase 2 (Plod2) gets expressed in a baculovirus system. The protein covers the full-length mature sequence from amino acids 26-737. A C-terminal 6xHis-Myc tag is attached to make purification and detection more straightforward. SDS-PAGE analysis shows the purity exceeds 85%, which appears to provide reliable performance for research work.

Plod2 functions as an enzyme that's crucial for collagen biosynthesis. Its main job involves hydroxylating lysine residues in collagen-like peptides. This modification seems essential for maintaining collagen fiber stability and function, which directly affects connective tissue integrity. Research interest in Plod2 likely stems from its role in extracellular matrix formation and maintenance pathways.

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. Enzyme Kinetics and Substrate Specificity Studies

Researchers can use this recombinant Plod2 protein to study the enzymatic properties of procollagen-lysine,2-oxoglutarate 5-dioxygenase 2 under controlled laboratory conditions. Scientists might investigate kinetic parameters like Km and Vmax values by testing different procollagen substrates along with cofactors such as 2-oxoglutarate, ascorbate, and iron. The C-terminal His-Myc tag makes protein purification and quantification easier, helping determine accurate enzyme concentrations for kinetic experiments. These studies could provide fundamental biochemical data about mouse Plod2's catalytic efficiency and which substrates it prefers.

2. Protein-Protein Interaction Mapping

The dual C-terminal His-Myc tag system opens up possibilities for

comprehensive protein interaction studies through both affinity purification and immunoprecipitation methods. Scientists can run pull-down assays using the His tag to discover new binding partners of Plod2 from mouse cell lysates or tissue extracts. Meanwhile, the Myc tag works well for immunoprecipitation experiments and Western blot detection to confirm specific protein interactions. This strategy may reveal regulatory proteins or cofactors that influence how Plod2 functions in collagen biosynthesis pathways.

3. Antibody Development and Validation

This purified recombinant protein works as an ideal antigen for creating specific antibodies against mouse Plod2. The high purity level (>85%) suggests minimal cross-reactivity with other proteins during immunization protocols. Scientists can use this protein as both a positive control and standard when validating antibody specificity in Western blotting, immunofluorescence, and immunohistochemistry work. The known molecular weight and tag information help with proper antibody characterization and optimizing detection conditions.

4. Structural and Biophysical Characterization

The full-length mature protein (26-737aa) from the baculovirus expression system may provide a suitable sample for structural biology studies. These could include X-ray crystallography, NMR spectroscopy, or cryo-electron microscopy. Scientists might investigate mouse Plod2's three-dimensional structure and compare it with related family members to better understand structure-function relationships. The protein also appears useful for biophysical studies like dynamic light scattering, thermal stability assays, and circular dichroism spectroscopy to characterize folding properties and stability under different conditions.

5. Inhibitor Screening and Drug Discovery Research

This recombinant Plod2 protein could serve as a target for high-throughput screening of potential enzyme inhibitors in drug discovery research focused on collagen-related disorders. Scientists can develop biochemical assays to test compound libraries for inhibitory activity against Plod2's enzymatic function. The tagged protein allows for easier detection and quantification in plate-based assay formats, which may help identify promising lead compounds. Such studies would likely contribute to understanding Plod2 as a potential therapeutic target and provide tools for additional preclinical research.

Shelf Life

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