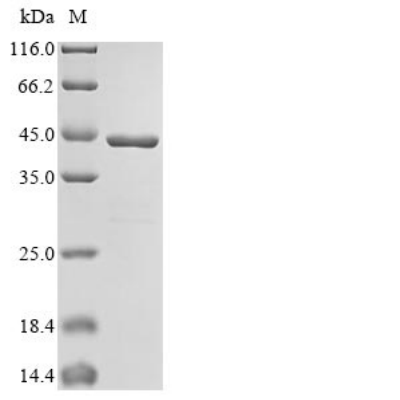
Recombinant Streptomyces sp. L-proline cis-3-hydroxylase 1

Product Code	CSB-EP309094FOM
Abbreviation	Recombinant Streptomyces sp. L-proline cis-3-hydroxylase 1 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.	P96010
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	Streptomyces sp.
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	MRSHILGRIELDQERLGRDLEYLATVPTVEEEYDEFSNGFWKNIPLYNASGGS EDRLYRDLEGSPAQPTKHAEQVPYLNEIITTVYNGERLQMARTRNLKNAVVIPH RDFVELDRELDQYFRTHLMLEDSPLAFHSDDDTVIHMRAGEIWFLDAAAVHSA VNFAEFSRQSLCVDLAFDGAFDEKEAFADATVYAPNLSPDVRERKPFTKEREA GILALSGVIGRENFRDILFLLSKVHYTYDVHPGETFEWLVSVSKGAGDDKMVEK AERIRDFAIGARALGERFSLTTW
Research Area	others
Source	E.coli
Target Names	N/A
Expression Region	1-290aa
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	44.0 kDa
Protein Length	Full Length
Image	



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

Recombinant Streptomyces sp. L-proline cis-3-hydroxylase 1 gets expressed in E. coli and includes the complete protein spanning amino acids 1 to 290. The construct carries an N-terminal 10xHis-tag along with a C-terminal Myc-tag to help with purification and detection steps. SDS-PAGE analysis shows the protein reaches greater than 90% purity, which appears to meet quality standards needed for research work.

L-proline cis-3-hydroxylase 1 catalyzes the hydroxylation of L-proline—a step that seems important in certain metabolic pathways. This enzyme likely plays a role in bacterial secondary metabolism and may be worth studying for its catalytic properties and possible biocatalysis uses. Research on this protein could reveal how enzymes function within Streptomyces species.

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. Biochemical Characterization of L-proline cis-3-hydroxylase Activity

This recombinant enzyme might work well for setting up in vitro assays that measure L-proline cis-3-hydroxylase activity using L-proline as substrate along with necessary cofactors. Both His and Myc tags make purification and detection more straightforward, letting researchers fine-tune reaction conditions like pH, temperature, and cofactor needs. Studies like these could help clarify the enzymatic properties and kinetic parameters of this Streptomyces hydroxylase. The high purity (>90%) should give reliable biochemical data without much interference from contaminating proteins.

2. Substrate Specificity and Inhibitor Screening Studies

The purified recombinant protein may serve as a useful tool for exploring substrate specificity through testing different proline analogs and related amino acids as possible substrates. Competitive inhibition assays could identify compounds that affect enzyme activity, potentially offering clues about active

site structure and how catalysis works. The N-terminal His tag makes immobilization on metal affinity matrices relatively easy for high-throughput screening setups. Research along these lines might advance what we know about hydroxylase selectivity in Streptomyces metabolic networks.

3. Antibody Development and Immunoassay Applications

The dual-tagged recombinant protein could work as an immunogen for creating specific antibodies against Streptomyces L-proline cis-3-hydroxylase. That C-terminal Myc tag offers a handy epitope for checking antibody specificity early on and can act as a positive control in immunoassays. Scientists might develop ELISA-based detection methods or Western blot procedures for tracking enzyme expression in Streptomyces cultures. The recombinant protein's high purity should help produce antibodies with less cross-reactivity to other cellular proteins.

4. Protein-Protein Interaction Studies

The tagged recombinant enzyme appears suitable for pull-down assays aimed at finding potential protein partners or regulatory factors that interact with L-proline cis-3-hydroxylase in Streptomyces metabolism. The N-terminal His tag works for immobilization on nickel-based resins, while the C-terminal Myc tag helps with detection and validation of the bait protein during interaction studies. Co-immunoprecipitation experiments using anti-Myc antibodies might help identify protein complexes involving this hydroxylase. Such work could uncover regulatory mechanisms or metabolic pathway connections in Streptomyces secondary metabolism.

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.