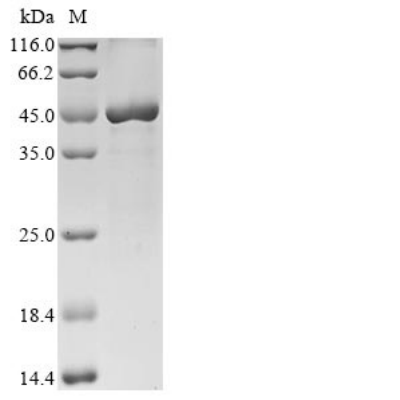
Recombinant Saccharomyces cerevisiae Sterol-4-alpha-carboxylate 3-dehydrogenase, decarboxylating (ERG26)

Product Code	CSB-EP346058SVG
Abbreviation	Recombinant SVG-Saccharomyces cerevisiae ERG26 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.	P53199
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	SVG-Saccharomyces cerevisiae (strain ATCC 204508 / S288c) (Baker's yeast)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	MSKIDSVLIIGGSGFLGLHLIQQFFDINPKPDIHIFDVRDLPEKLSKQFTFNVDDIK FHKGDLTSPDDMENAINESKANVVVHCASPMHGQNPDIYDIVNVKGTRNVIDM CKKCGVNILVYTSSAGVIFNGQDVHNADETWPIPEVPMDAYNETKAIAEDMVL KANDPSSDFYTVALRPAGIFGPGDRQLVPGLRQVAKLGQSKFQIGDNNNLFD WTYAGNVADAHVLAAQKLLDPKTRTAVSGETFFITNDTPTYFWALARTVWKAD GHIDKHVIVLKRPVAICAGYLSEWVSKMLGKEPGLTPFRVKIVCAYRYHNIAKA KKLLGYTPRVGIEEGINKTLAWMDEGL
Research Area	Others
Source	E.coli
Target Names	ERG26
Expression Region	1-349aa
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	46.1 kDa
Protein Length	Full Length
Image	



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

Description

Recombinant Saccharomyces cerevisiae Sterol-4-alpha-carboxylate 3-dehydrogenase, decarboxylating (ERG26) is expressed in E. coli and contains the complete sequence spanning amino acids 1-349. The protein carries an N-terminal 10xHis-tag and a C-terminal Myc-tag, which streamline purification and detection processes. SDS-PAGE analysis indicates purity levels exceeding 90%, making it well-suited for rigorous research applications.

ERG26 appears to play a fundamental role in the ergosterol biosynthesis pathway—a process that seems critical for yeast and fungi survival. This enzyme catalyzes specific reactions in sterol intermediate conversion, ultimately contributing to ergosterol production. Since ergosterol is an essential membrane component in yeast cells, this protein may prove valuable for investigating sterol metabolism and could help researchers understand broader biological mechanisms in yeast systems.

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 Sterol Biosynthesis Pathway

This recombinant ERG26 protein offers opportunities to examine the enzymatic properties and kinetic behavior of sterol-4-alpha-carboxylate 3-dehydrogenase under controlled laboratory conditions. Scientists can explore substrate preferences, cofactor dependencies, and optimal reaction environments using these purified enzyme preparations. The dual tagging system simplifies protein purification and detection, which should enable thorough biochemical analysis of this important enzyme in ergosterol production. Results from such investigations might enhance our understanding of yeast sterol metabolism and reveal the molecular mechanisms behind this dehydrogenase/decarboxylase function.

2. Protein-Protein Interaction Studies

Both the N-terminal His tag and C-terminal Myc tag make this protein well-suited

for pull-down experiments aimed at discovering potential binding partners or regulatory proteins that may interact with ERG26. These tags allow for protein immobilization on suitable affinity matrices and detection within complex biological samples. Interaction studies like these could potentially uncover new regulatory pathways in sterol biosynthesis or identify proteins that might influence ERG26 activity. The high purity of this recombinant protein suggests it should produce dependable results in co-immunoprecipitation or similar interaction-based experiments.

3. Antibody Development and Validation

This highly purified recombinant ERG26 protein works well as an antigen for creating specific antibodies targeting the sterol-4-alpha-carboxylate 3-dehydrogenase enzyme. Since it contains the full-length protein sequence (1-349aa), researchers get comprehensive epitope coverage for developing both polyclonal and monoclonal antibodies. The dual-tag design makes purification straightforward and supports quality control throughout antibody development. Once generated, these antibodies could prove useful for Western blotting, immunofluorescence, or other detection techniques in yeast cell biology studies.

4. Structural and Biophysical Analysis

Researchers can use the recombinant ERG26 protein for structural investigations through X-ray crystallography, NMR spectroscopy, or cryo-electron microscopy to determine the three-dimensional architecture of this dehydrogenase enzyme. Various biophysical characterization methods—dynamic light scattering, circular dichroism spectroscopy, and thermal stability assays—may provide valuable information about protein folding patterns, stability characteristics, and conformational shifts. The high purity and dual-tag configuration should make protein handling and concentration measurements more manageable for these analytical techniques.

5. Enzyme Inhibitor Screening Assays

This purified ERG26 protein can serve as a target in high-throughput screening systems designed to identify compounds that might inhibit sterol-4-alpha-carboxylate 3-dehydrogenase activity. The recombinant enzyme becomes a testing ground for compound libraries in drug discovery research, particularly for developing antifungal agents. Both His and Myc tags allow for straightforward protein immobilization and detection across different assay formats. Screening efforts like these could potentially lead to discovering new chemical structures that disrupt yeast sterol biosynthesis for research applications.

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.
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