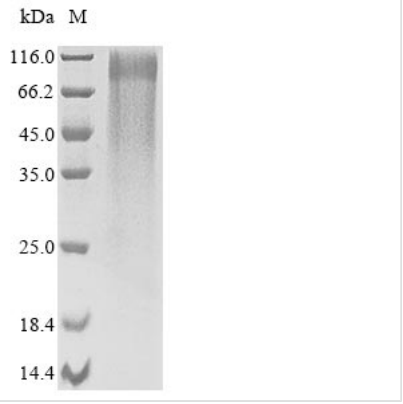
Recombinant Neosartorya fumigata 1,3-beta-glucanosyltransferase gel4 (gel4)

Product Code	CSB-YP316454NGS
Abbreviation	Recombinant Neosartorya fumigata gel4 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.	P0C956
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	Neosartorya fumigata (strain ATCC MYA-4609 / Af293 / CBS 101355 / FGSC A1100) (Aspergillus fumigatus)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	KVLKACCWTIALDANSYGNKFFYSNNGTEFFIRGVAYQQEYQANGTSTENSDY TDPLANVDNCKRDIPYLKQLRTNVIRTYAVDPTKDHDECMKLLDDAGIYLITDLS APSESINRADPAWNTDLYKRYTSVIDAFAKYSNVIGFFAGNEVANDNNNTNSIA YVKAAVRDMKSYIKSKDYRSSLLVGYATDDDAHIRADLADYLVCGDKESSIDM FGYNIYEWCGDSSFEKSGYKDRTEEFSKYPVPAFFSEYGCIDPKPRKFTDVAA LYGPQMNDVWSGGIVYMYFQEANDYGLVSVSGDNVKTKEDFSYLSVQMQKV TATGVNSASYTASNTAVPTCPSVGAKWEASNKLPPSPNSELCDCMVETLSCT VKDSVDEKEYGDLFDYLCAAGVCGGINSNSTSGDYGAYSVCSAKQKLSFVMN QYYKKNNKAATACDFDGKAQTKKGADASGSCASLISQAGTAGTGSVTAGATG SSGSGSASETSKGAAGVAA
Research Area	Transferase
Source	Yeast
Target Names	gel4
Expression Region	26-519aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	55.4 kDa
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 Neosartorya fumigata 1,3-beta-glucanosyltransferase gel4 is produced in a yeast expression system, delivering the full-length mature protein from amino acids 26 to 519. The protein includes an N-terminal 6xHis-tag, which streamlines purification and detection processes. SDS-PAGE analysis shows the protein achieves greater than 85% purity, suggesting reliable performance for various research applications. This product is intended strictly for research use only—not for diagnostic or therapeutic purposes.

1,3-beta-glucanosyltransferase gel4 from Neosartorya fumigata appears to play a crucial role in fungal cell wall biosynthesis. The enzyme seems particularly important in forming and remodeling beta-glucan polymers. Its activity may be vital for maintaining cell wall integrity, which makes it an attractive target for studying fungal growth and development. Understanding gel4's function could prove essential for research into antifungal strategies and broader fungal biology questions.

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. In Vitro Enzyme Activity Characterization

This recombinant 1,3-beta-glucanosyltransferase can help establish and optimize enzyme activity assays for studying fungal cell wall biosynthesis. The purified protein allows controlled biochemical studies to determine substrate specificity, kinetic parameters, and optimal reaction conditions. The N-terminal His-tag makes purification and immobilization straightforward for repeated assays. Such studies would likely provide fundamental insights into the enzymatic mechanisms behind fungal cell wall construction.

2. Antifungal Drug Screening Platform

The recombinant gel4 protein serves as a potentially valuable target for screening antifungal compounds that may inhibit cell wall biosynthesis enzymes.

Researchers can develop high-throughput screening assays using this purified enzyme to identify small molecules or natural products that interfere with its glucanosyltransferase activity. The standardized recombinant system appears to ensure reproducible results across different screening campaigns. This approach might help identify novel antifungal lead compounds targeting fungal cell wall synthesis pathways.

3. Antibody Development and Validation

The purified recombinant gel4 protein can serve as an immunogen for generating specific antibodies against this fungal enzyme. The His-tagged protein seems suitable for immunization protocols and subsequent antibody characterization through ELISA and Western blot analyses. These antibodies would likely prove valuable as research tools for studying gel4 expression patterns, cellular localization, and protein levels in fungal cultures. The recombinant protein also works as a positive control and standard for antibody-based detection methods.

4. Protein-Protein Interaction Studies

This recombinant enzyme can be used in pull-down assays and other interaction studies to identify cellular partners involved in fungal cell wall biosynthesis complexes. The N-terminal His-tag allows immobilization on metal affinity matrices for capturing potential binding partners from fungal cell extracts. Such studies might reveal the molecular networks and regulatory mechanisms governing cell wall synthesis in Aspergillus fumigatus. The purified protein also enables validation of identified interactions through direct binding assays.

5. Structural and Biophysical Analysis

The recombinant gel4 protein provides material for detailed structural studies including X-ray crystallography, NMR spectroscopy, or cryo-electron microscopy to understand the molecular architecture of this glucanosyltransferase. Biophysical characterization techniques such as dynamic light scattering, differential scanning calorimetry, and circular dichroism spectroscopy can be applied to study protein stability, folding, and conformational changes. The high purity level makes it suitable for these sensitive analytical techniques that require well-characterized protein samples.

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.