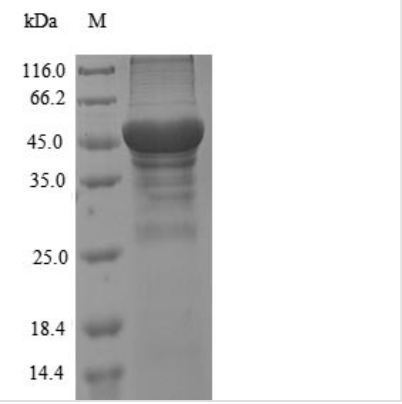
Recombinant Ambrosia artemisiifolia Pectate lyase 1

Product Code	CSB-EP326746BYC
Relevance	Has pectate lyase activity.
Abbreviation	Recombinant Ambrosia artemisiifolia Pectate lyase 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.	P27760
Alias	Antigen Amb a I Antigen E Short name:AgE
Product Type	Recombinant Protein
Immunogen Species	Ambrosia artemisiifolia (Short ragweed)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	AEDVEEFLPSANETRRSLKACEAHNIIDKCWRCKADWANNRQALADCAQGFA KGTYGGKHGDVYTVTSDKDDDVANPKEGTLRFAAAQNRPLWIIFKRNMVIHLN QELVVNSDKTIDGRGVKVNIVNAGLTLMNVKNIIIHNINIHDIKVCPGGMIKSNDG PPILRQQSDGDAINVAGSSQIWIDHCSLSKASDGLLDITLGSSHVTVSNCKFTQ HQFVLLLGADDTHYQDKGMLATVAFNMFTDHVDQRMPRCRFGFFQVVNNNY DRWGTYAIGGSSAPTILSQGNRFFAPDDIIKKNVLARTGTGNAESMSWNWRT DRDLLENGAIFLPSGSDPVLTPEQKAGMIPAEPGEAVLRLTSSAGVLSCHQGA PC
Research Area	Allergen
Source	E.coli
Protein Names	Recommended name: Pollen allergen Amb a 1.2 Alternative name(s): Antigen Amb a I Antigen E Short name= AgE Protein AaBA Allergen= Amb a 1.2
Expression Region	26-398aa
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	44.8kDa
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 Ambrosia artemisiifolia Pectate lyase 1 is produced in E. coli and contains the full-length mature protein spanning amino acids 26 to 398. An N-terminal 6xHis-tag is attached to the protein, which helps with purification and detection. SDS-PAGE analysis confirms the product achieves greater than 90% purity, making it suitable for research work.

Pectate lyase 1 appears to play an important role in breaking down pectin, a major building block of plant cell walls. The enzyme works by cutting α-1,4-glycosidic bonds in pectate - a process that seems central to how plant tissues break apart and how disease develops. Scientists may find this protein particularly useful when studying plant-pathogen interactions, agricultural biotechnology, and how enzymes function.

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 Biochemical Characterization Studies

Scientists can use this recombinant pectate lyase 1 from Ambrosia artemisiifolia to study how plant pectate lyases work through laboratory substrate breakdown tests. Researchers might determine the best pH, temperature, and salt conditions for enzyme activity using pectin or pectate as starting materials. The high purity (>90%) and N-terminal His-tag make purification and measurement more straightforward for accurate kinetic studies. This work could help reveal how ragweed pectate lyases compare to those found in other plants.

2. Protein-Protein Interaction Studies

The N-terminal 6xHis-tag allows for pull-down experiments to find potential binding partners or helper molecules that work with this pectate lyase. Scientists can attach the recombinant protein to nickel-coated beads and mix it with plant cell extracts or protein collections to grab onto interacting molecules. Mass spectrometry analysis of these captured complexes might uncover new

regulatory proteins or enzyme modifiers. This strategy could shed light on the molecular mechanisms that control how pectate lyase modifies plant cell walls.

3. Antibody Development and Immunological Studies

This purified recombinant protein works well as an antigen for creating specific antibodies against Ambrosia artemisiifolia pectate lyase 1 in laboratory animals. The high purity and known protein sequence should give consistent results when producing polyclonal or monoclonal antibodies. Scientists can test these antibodies using ELISA, Western blot, or immunofluorescence methods with the His-tagged recombinant protein serving as a positive control. Such research-grade antibodies would make it possible to detect and locate native pectate lyase in ragweed plant tissues.

4. Structural Biology and Protein Folding Analysis

Researchers can study this recombinant protein's structure using techniques like circular dichroism spectroscopy, dynamic light scattering, and analytical ultracentrifugation to examine protein folding, stability, and whether multiple protein units stick together. X-ray crystallography or NMR studies could reveal the three-dimensional structure of this ragweed pectate lyase. The His-tag helps purify the protein to the high concentrations that structural biology methods typically require. These investigations may provide insights into the molecular shape and folding characteristics unique to Ambrosia artemisiifolia pectate lyases.

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.