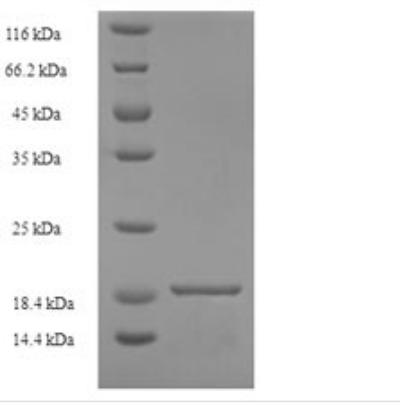
Recombinant Alternaria alternata Major allergen Alt a 1 (ALTA1)

Product Code	CSB-EP303588AZV
Abbreviation	Recombinant Alternaria alternata ALTA1 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.	P79085
Alias	Allergen: Alt a 1
Product Type	Recombinant Protein
Immunogen Species	Alternaria alternata (Alternaria rot fungus) (Torula alternata)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	APLESRQDTASCPVTTEGDYVWKISEFYGRKPEGTYYNSLGFNIKATNGGTLD FTCSAQADKLEDHKWYSCGENSFMDFSFDSDRSGLLLKQKVSDDITYVATATL PNYCRAGGNGPKDFVCQGVADAYITLVTLPKSS
Research Area	Others
Source	E.coli
Target Names	ALTA1
Expression Region	19-157aa
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	19.2kDa
Protein Length	Full Length of Mature Protein
Image	 (Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

The protein AltA1, also known as ALTA1, is a member of the AltA1 family, a group of structural proteins found in fungi [1]. AltA1 has been identified in various fungal species, including Ascochyta lentis, Botrytis cinerea, Fusarium oxysporum f. sp. vasinfectum, and Venturia inaequalis [2][3][4]. AltA1 has been implicated as a major allergen in Alternaria species [2]. Additionally, AltA1 has been identified as an effector protein in *Venturia inaequalis*, the causal agent of apple scab, with a significant increase in expression [4]. Furthermore, AltA1 has been associated with the pathophysiology of fungal plant pathogens and is believed to play a role in the secretion of extracellular vesicles [3].

The AltA1 family, to which the protein AltA1 belongs, has been characterized as a group of non-canonical pathogen-associated molecular pattern (PAMP) proteins, suggesting a potential role in the hypersensitive response in plants [1]. Moreover, a study on fungal orphan candidate effectors revealed that AltA1, along with other families of proteins, displayed a decrease in frustration index with residue surface exposure, indicating a potential structural landscape and evolvability of these proteins [5].

References:
[1] J. T, T. Leisen, S. Ce, J. Müller, F. Mahler, F. Sommeret al., "The secreted hypersensitive response inducing protein 1 frombotrytis cinereadisplays non-canonical pamp-activity",, 2020. https://doi.org/10.1101/2020.12.16.423131
[2] R. Lee, L. Farfan-Caceres, J. Debler, A. Williams, R. Syme, & B. Henares, "Reference genome assembly for australianascochyta lentisisolate al4", G3 Genes|genome|genetics, vol. 11, no. 2, 2021. https://doi.org/10.1093/g3journal/jkab006
[3] D. Garcia-Ceron, C. Dawson, P. Faou, M. Bleackley, & M. Anderson, "Size?exclusion chromatography allows the isolation of evs from the filamentous fungal plant pathogen fusarium oxysporum f. sp. vasinfectum (fov)", Proteomics, vol. 21, no. 13-14, 2021. https://doi.org/10.1002/pmic.202000240
[4] Y. Khajuria, B. Akhoon, S. Kaul, & M. Dhar, "Secretomic insights into the pathophysiology of venturia inaequalis: the causative agent of scab, a devastating apple tree disease", Pathogens, vol. 12, no. 1, p. 66, 2022. https://doi.org/10.3390/pathogens12010066
[5] M. Derbyshire and S. Raffaele, "Surface frustration re-patterning underlies the structural landscape and evolvability of fungal orphan candidate effectors",, 2023. https://doi.org/10.1101/2023.01.06.522876

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

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