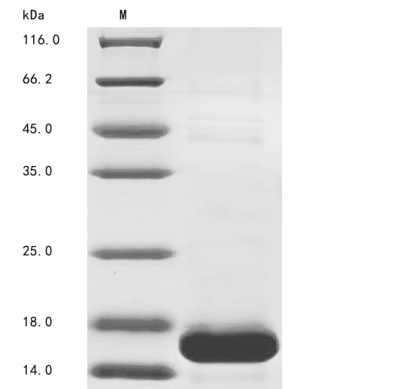
Recombinant Arabidopsis thaliana EPIDERMAL PATTERNING FACTOR-like protein 9 (EPFL9)

Product Code	CSB-EP879855DOA
Abbreviation	Recombinant Mouse-ear cress EPFL9 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.	Q9SV72
Storage Buffer	Tris-based buffer,50% glycerol
Product Type	Recombinant Proteins
Immunogen Species	Arabidopsis thaliana (Mouse-ear cress)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	SRPRSIENTVSLLPQVHLLNSRRRHMIGSTAPTCTYNECRGCRYKCRAEQVPV EGNDPINSAYHYRCVCHR
Research Area	Cardiovascular
Source	E.coli
Target Names	EPFL9
Protein Names	Recommended name: EPIDERMAL PATTERNING FACTOR-like protein 9 Short name= EPF-like protein 9
Expression Region	32-102aa
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
Mol. Weight	14.2 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 Arabidopsis thaliana EPIDERMAL PATTERNING FACTOR-like protein 9 (EPFL9) is produced using an E. coli expression system and includes the mature protein region from amino acids 32 to 102. The product comes with an N-terminal 10xHis-tag, which streamlines purification and detection processes. SDS-PAGE analysis confirms the protein reaches greater than 85% purity, suggesting it provides reliable material for research applications.

EPFL9 belongs to the EPIDERMAL PATTERNING FACTOR-like family in Arabidopsis thaliana. This family appears to play a crucial role in regulating stomatal development and patterning in plants. The protein seems particularly relevant for research aimed at understanding epidermal cell differentiation mechanisms and intercellular signaling pathways in plant biology. Many researchers find this protein useful when studying plant growth and development.

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. Protein-Protein Interaction Studies Using Pull-Down Assays

The N-terminal 10xHis-tagged EPFL9 protein can be immobilized on nickel-affinity resins to identify potential binding partners from Arabidopsis protein extracts or purified candidate proteins. This approach may help reveal the molecular mechanisms underlying epidermal patterning in plant development. The His-tag allows for straightforward purification and immobilization while likely maintaining the native structure of the mature protein domain (32-102aa). Such studies could uncover novel regulatory networks involving EPFL family proteins in plant epidermal cell fate determination.

2. Antibody Development and Validation

This recombinant EPFL9 protein appears to work well as an antigen for generating specific antibodies against the mature protein domain. The high purity (>85%) and defined amino acid sequence (32-102aa) should provide consistent immunization results and antibody specificity. Researchers can validate generated antibodies using the same recombinant protein in Western blot, ELISA, or immunoprecipitation assays. These antibodies would likely prove valuable for studying EPFL9 expression patterns and subcellular localization in plant tissues.

3. Biochemical Characterization and Structural Studies

The purified recombinant protein makes detailed biochemical analysis possible, including determination of molecular weight, isoelectric point, and thermal stability under various buffer conditions. The defined expression region

(32-102aa) represents the mature functional domain, which suggests it's suitable for structural studies such as circular dichroism spectroscopy to analyze secondary structure content. These characterization studies may provide fundamental insights into the biophysical properties of EPFL9 and help establish optimal conditions for further functional assays.

4. Competitive Binding Assays with Related EPFL Family Members

The His-tagged EPFL9 can be used in competitive binding experiments to study the specificity and affinity differences among EPFL family proteins. Comparing binding profiles of EPFL9 with other family members to common target proteins or receptors allows researchers to determine functional redundancy or specificity within this protein family. The consistent expression system and purification method should enable direct quantitative comparisons between different EPFL proteins in plant epidermal patterning research.

Shelf Life

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