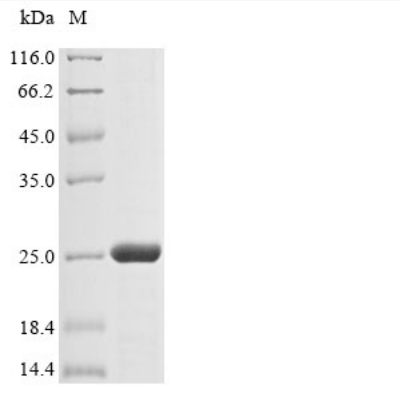
Recombinant Actinia equina DELTA-actitoxin-Aeq1a

Product Code	CSB-EP351109ACN
Abbreviation	Recombinant Actinia equina DELTA-actitoxin-Aeq1a 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.	P61914
Product Type	Recombinant Proteins
Immunogen Species	Actinia equina (Beadlet anemone)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	SADVAGAVIDGASLSFDILKTVLEALGNVKRKIAVGVDNESGKTWTALNTYFRS GTSDIVLPHKVPHGKALLYNGQKDRGPVATGAVGVLAYLMSDGNTLAVLFSVP YDYNWYSNWWNVRIYKGKRRADQRMYEELYYNLSPFRGDNGWHTRNLGYG LKSRGFMNSSGHAILEIHVSKA
Research Area	Others
Source	E.coli
Target Names	N/A
Protein Names	Recommended name: Equinatoxin-2Alternative name(s): Equinatoxin II Short name= EqT II Short name= EqTII
Expression Region	36-214aa
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	23.9 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 Actinia equina DELTA-actitoxin-Aeq1a gets produced in E. coli and comes with a 6xHis-tag at the N-terminus, which makes purification much easier. The full-length mature protein covers amino acids 36 to 214 and reaches a purity level above 85%, as confirmed by SDS-PAGE. This product is meant strictly for research purposes and maintains low endotoxin levels for reliable performance across different experimental setups.

DELTA-actitoxin-Aeq1a comes from the beadlet anemone Actinia equina. It's a toxin that appears to play a role in ion channel modulation. For researchers diving into neurophysiological studies, this protein may prove quite valuable—particularly when investigating how toxins work at the cellular level. It seems to be a key tool for anyone looking into ion channel function or studying how marine toxins affect cellular processes.

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 Purification and Biochemical Characterization Studies

This N-terminal 6xHis-tagged recombinant protein works well for refining purification protocols through nickel-affinity chromatography. It also helps establish consistent biochemical characterization methods for sea anemone toxins. Scientists can examine how stable and soluble the protein remains under different buffer conditions and pH ranges. Given its high purity (>85%), it's well-suited for thorough biophysical analyses. These might include circular dichroism spectroscopy, dynamic light scattering, and mass spectrometry—all useful for understanding folding patterns and whether the protein forms complexes.

2. Antibody Development and Immunological Studies

The recombinant DELTA-actitoxin-Aeq1a can work as an immunogen for creating both polyclonal and monoclonal antibodies that target this specific sea anemone toxin. The 6xHis tag makes it simple to attach the protein to nickel-coated surfaces for ELISA-based screening and characterization assays. These antibodies could become useful research tools for mapping where related toxins show up in Actinia equina tissues. They might also help develop detection methods for marine biology research, though their specificity would need careful validation.

3. Protein-Protein Interaction Screening

Scientists can attach the His-tagged protein to nickel-coated plates or beads for pull-down assays. This approach may help identify potential binding partners or target proteins. It seems particularly promising for studying how DELTA-actitoxin-Aeq1a might interact with membrane proteins, ion channels, or other

cellular components in controlled lab conditions. The tag also allows researchers to use the protein in surface plasmon resonance studies, which can measure how quickly it binds to potential target molecules.

4. Comparative Toxin Structure-Function Studies

This recombinant protein offers a standardized reference point for comparing it with other sea anemone toxins or related cnidarian proteins. Researchers can use it to explore evolutionary connections between different actitoxin variants through sequence alignment, structural modeling, and phylogenetic analysis. Having purified protein available makes it possible to directly compare biochemical properties—thermal stability, protease sensitivity, and chemical modification patterns—across different toxin families. Though such comparisons can be challenging due to the diversity within these protein families.

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