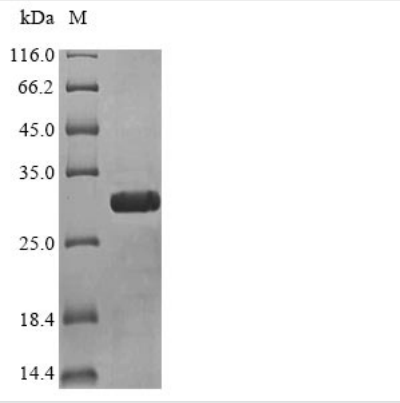
Recombinant Oxyuranus microlepidotus Toxin 3FTx-Oxy6

Product Code	CSB-EP415963OGE
Abbreviation	Recombinant Oxyuranus microlepidotus Toxin 3FTx-Oxy6 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.	A7X4T2
Product Type	Recombinant Protein
Immunogen Species	Oxyuranus microlepidotus (Inland taipan)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	LKCHESENLDDHVVCEEDETMCYKFTFVPFRDFEIVARGCSASCPEEKDVVC CSTDLCNK
Research Area	others
Source	E.coli
Protein Names	Recommended name: Toxin 3FTx-Oxy6
Expression Region	22-81aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-SUMO-tagged and C-terminal Myc-tagged
Mol. Weight	26.9kDa
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 Oxyuranus microlepidotus Toxin 3FTx-Oxy6 is expressed in E. coli and includes the full length of the mature protein, specifically the 22-81

amino acid region. The protein carries an N-terminal 10xHis-SUMO tag along with a C-terminal Myc tag to aid purification and detection. SDS-PAGE analysis shows it reaches greater than 85% purity, which appears to provide high-quality material for research applications.

3FTx-Oxy6 comes from the venom of the Inland taipan, one of the world's most venomous snakes. This protein belongs to the three-finger toxin family, which is known for disrupting cellular functions. Toxinology researchers find it particularly interesting due to its potential effects on ion channels and receptors. This makes it a valuable tool for studying neurotoxicity and related pathways, though the exact mechanisms may still require further investigation.

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. Biochemical Characterization and Structural Studies

Researchers can use this recombinant three-finger toxin from Oxyuranus microlepidotus for detailed biochemical analysis to understand how snake venom toxins are structured. The dual-tagged protein allows purification through the N-terminal His-SUMO tag and detection via the C-terminal Myc tag, which streamlines protein isolation and analytical studies. Scientists might perform circular dichroism spectroscopy, dynamic light scattering, and other biophysical techniques to characterize protein folding, stability, and oligomerization state. The mature protein region (22-81aa) represents the biologically relevant domain, making it suitable for structure-function relationship studies.

2. Antibody Development and Immunological Research

The recombinant toxin can serve as an immunogen or antigen for developing specific antibodies against Oxyuranus microlepidotus venom components. Its high purity (>85%) and dual-tag system appear well-suited for immunization protocols and subsequent antibody screening assays. The Myc tag may prove useful for ELISA-based detection during antibody validation and characterization studies. This application supports the development of research tools for studying envenomation mechanisms and venom composition analysis, though optimization of protocols will likely be necessary.

3. Protein-Protein Interaction Studies

The dual-tagged recombinant toxin seems well-suited for investigating molecular interactions with potential cellular targets or binding partners. Researchers can immobilize the protein on nickel-based matrices for pull-down assays using the His-SUMO tag, while the Myc tag allows detection and tracking in various experimental systems. Scientists might use this protein to screen for binding partners in cell lysates or to study interactions with purified target proteins. The

mature protein sequence provides the native binding interface for physiologically relevant interaction studies.

4. Comparative Toxinology and Evolutionary Studies

This recombinant protein could prove valuable in comparative studies analyzing the diversity and evolution of three-finger toxins across different snake species. The standardized expression system and purification tags allow for consistent preparation and analysis alongside other recombinant toxins. Researchers can perform sequence-structure-function comparisons and phylogenetic analyses using this well-characterized protein preparation. The mature protein region represents both the evolutionarily conserved and variable domains typical of the three-finger toxin family.

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.