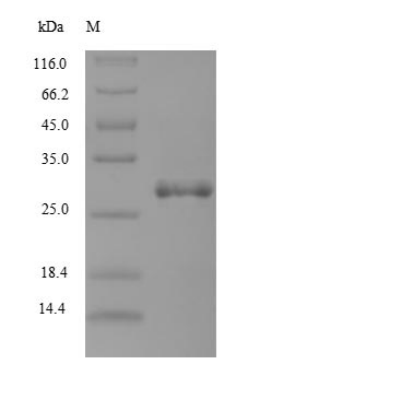
Recombinant Ornithodoros moubata Tick anticoagulant peptide

Product Code	CSB-EP325525OCK
Relevance	TAP is a slow, tight-binding inhibitor of blood coagulation, specific for factor Xa.
Abbreviation	Recombinant Ornithodoros moubata Tick anticoagulant peptide 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.	P17726
Product Type	Recombinant Protein
Immunogen Species	Ornithodoros moubata (Soft tick) (Argasid tick)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	YNRLCIKPRDWIDECDSNEGGERAYFRNGKGGCDSFWICPEDHTGADYYSSYRDCFNACI
Research Area	others
Source	E.coli
Protein Names	Recommended name: Tick anticoagulant peptide Short name= TAP
Expression Region	1-60aa
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	27.0kDa
Protein Length	Full Length

Image



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

The production of recombinant Ornithodoros moubata Tick anticoagulant

peptide involves isolating the target gene, which encodes the 1-60aa of Tick anticoagulant peptide. This gene is fused with an N-terminal 10xHis-SUMO-tag and C-terminal Myc-tag gene and then cloned into an appropriate expression vector. The constructed vector is introduced into E. coli cells via transformation. The E. coli cells express the recombinant protein upon certain induction and are lysed to release the expressed protein. Purification of the recombinant protein is typically achieved using affinity chromatography. The final step involves analyzing the protein's purity through SDS-PAGE. Its purity is over 85%.

Tick anticoagulant peptide (TAP) is a significant protein found in the saliva of the Ornithodoros moubata tick. This peptide, consisting of 60 amino acids, acts as a potent inhibitor of human blood coagulation factor Xa (fXa) [1]. Studies have shown that TAP is highly specific to factor Xa and is capable of binding to both an exosite and the active site of the enzyme [2]. Furthermore, TAP has been identified as a low molecular weight serine protease inhibitor, specifically targeting factor Xa [3][4]. The presence of TAP in the saliva of Ornithodoros moubata contributes to the tick's ability to feed on blood by inhibiting coagulation at the feeding site, allowing for a continuous blood meal [3].

References:
[1] S. Jordan, L. Waxman, D. Smith, & G. Vlasuk, Tick anticoagulant peptide: kinetic analysis of the recombinant inhibitor with blood coagulation factor x.alpha., Biochemistry, vol. 29, no. 50, p. 11095-11100, 1990. https://doi.org/10.1021/bi00502a012
[2] K. Bromfield, N. Quinsey, P. Duggan, & R. Pike, Approaches to selective peptidic inhibitors of factor xa, Chemical Biology & Drug Design, vol. 68, no. 1, p. 11-19, 2006. https://doi.org/10.1111/j.1747-0285.2006.00404.x
[3] A. Gaspar, A. Joubert, J. Crause, & A. Neitz, Isolation and characterization of an anticoagulant from the salivary glands of the tick, ornithodoros savignyi (acari: argasidae), Experimental and Applied Acarology, vol. 20, no. 10, p. 583-598, 1996. https://doi.org/10.1007/bf00052809
[4] A. Gaspar, J. Crause, & A. Neitz, Identification of anticoagulant activities in the salivary glands of the soft tick, ornithodoros savignyi, Experimental and Applied Acarology, vol. 19, no. 2, p. 117-127, 1995. https://doi.org/10.1007/bf00052551

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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