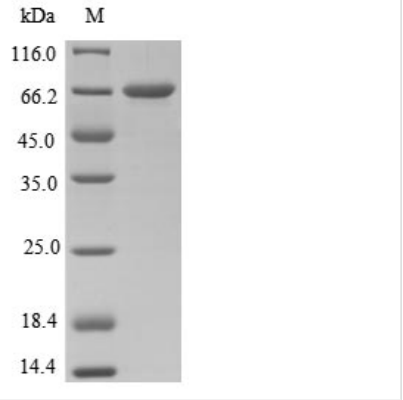
Recombinant Clostridium tetani Tetanus toxin (tetX), partial

Product Code	CSB-EP356416CMN
Relevance	Tetanus toxin acts by inhibiting neurotransmitter release. It binds to peripheral neuronal synapses, is internalized and moves by retrograde transport up the axon into the spinal cord where it can move between postsynaptic and presynaptic neurons. It inhibits neurotransmitter release by acting as a zinc endopeptidase that catalyzes the hydrolysis of the '76-Gln-|-Phe-77' bond of synaptobrevin-2.
Abbreviation	Recombinant Clostridium tetani tetX protein, partial
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.	P04958
Product Type	Recombinant Protein
Immunogen Species	Clostridium tetani (strain Massachusetts / E88)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	PITINNFRYSDPVNNDTIIMMEPPYCKGLDIYYKAFKITDRIWIVPERYEFGTKPE DFNPPSSLIEGASEYYDPNYLRTDSDKDRFLQTMVKLFNRIKNNVAGEALLDKII NAIPYLGNSYSLLDKFDTNSNSVSFNLLEQDPSGATTKSAMLTNLIIFGPGPVLN KNEVRGIVLRVDNKNYFPCRDGFGSIMQMAFCPEYVPTFDNVIENITSLTIGKS KYFQDPALLLMHELIHVLHGLYGMQVSSHEIIPSKQEIYMQHTYPISAEELFTFG GQDANLISIDIKNDLYEKTLNDYKAIANKLSQVTSCNDPNIDIDSYKQIYQQKYQF DKDSNGQYIVNEDKFQILYNSIMYGFTEIELGKKFNIKTRLSYFSMNHDPVKIPN LLDDTIYNDTEGFNIESKDLKSEYKGQNMRVNTNAFRNVDGSGLVSKLIGLCKK IIPPTNIRENLYNRTA
Research Area	others
Source	E.coli
Target Names	tetX
Protein Names	Tentoxylysin
Expression Region	2-457aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-B2M-tagged
Mol. Weight	66.3 kDa
Protein Length	Partial

Image



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

Description

Recombinant Clostridium tetani Tetanus toxin (tetX) gets produced in E. coli and includes an N-terminal 6xHis-B2M tag that makes purification and detection more straightforward. This partial protein covers amino acids 2-457 and shows purity levels exceeding 85%, as confirmed through SDS-PAGE analysis. The product is designed strictly for research purposes and appears to provide a reliable source of tetanus toxin for different experimental work.

Clostridium tetani produces the naturally occurring tetanus toxin, which is recognized for its powerful neurotoxic properties that disrupt normal muscle contractions. It has become important in neurological research because of how it blocks neurotransmitter release at synapses, ultimately causing muscle paralysis. Getting a better grasp of its mechanism may be key for creating strategies to combat its effects and enhance therapeutic approaches.

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. Antibody Development and Characterization

This recombinant tetanus toxin fragment (amino acids 2-457) could work as an immunogen for creating monoclonal or polyclonal antibodies against tetanus toxin in research environments. The N-terminal 6xHis-B2M tag makes purification simpler and helps with immobilization for antibody screening assays. Scientists can incorporate this protein into ELISA-based assays to examine antibody binding specificity and affinity. The partial protein sequence likely represents particular domains of the toxin that matter for antibody recognition studies.

2. Protein-Protein Interaction Studies

The 6xHis-B2M tagged recombinant protein works well in pull-down assays to find and examine potential cellular binding partners or receptors that connect

with tetanus toxin. The histidine tag allows for effective immobilization on nickel-based affinity matrices, which can capture interacting proteins from cell lysates or tissue extracts. This method may help scientists explore the molecular mechanisms behind tetanus toxin cellular interactions under controlled laboratory settings.

3. Biochemical and Structural Analysis

This purified recombinant protein fragment offers material for thorough biochemical characterization studies, including mass spectrometry, circular dichroism spectroscopy, and other analytical methods. The high purity (>85%) appears to make it appropriate for structural studies aimed at understanding the folding and stability characteristics of this particular tetanus toxin region. Scientists can conduct comparative analysis between different expression constructs or look into how various buffer conditions affect protein stability.

4. In Vitro Binding and Competition Assays

The recombinant tetanus toxin fragment can be used to create cell-free binding assays for studying toxin-receptor interactions or screening potential inhibitory compounds in research settings. The protein might serve as a competitor in displacement assays or function as a direct binding partner in surface plasmon resonance or other biophysical binding studies. These assays could generate quantitative data on binding kinetics and thermodynamics for basic research applications.

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.