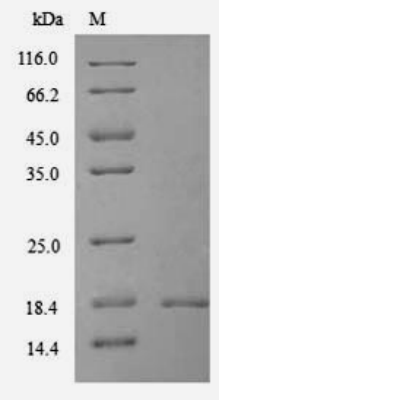
Recombinant Mouse Thioredoxin domain-containing protein 12 (Txndc12)

Product Code	CSB-YP887432MO
Relevance	Possesses significant protein thiol-disulfide oxidase activity.
Abbreviation	Recombinant Mouse Txndc12 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.	Q9CQU0
Alias	Endoplasmic reticulum resident protein 19 Short name: ER protein 19 Short name: ERp19 Thioredoxin-like protein p19
Product Type	Recombinant Protein
Immunogen Species	Mus musculus (Mouse)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	RTGLGKGFGDHIHWRTLEDGKKEAAASGLPLMVIIHKSWCGACKALKPKFAES TEISELSHNFVMVNLEDEEEPRDEDFSPDGGYIPRILFLDPSGKVRPEIINESGN PSYKYFYVSAEQVVQGMKEAQERLTGDAFREKHFQDEL
Research Area	Signal Transduction
Source	Yeast
Target Names	Txndc12
Protein Names	Recommended name: Thioredoxin domain-containing protein 12 EC= 1.8.4.2 Alternative name(s): Endoplasmic reticulum resident protein 19 Short name= ER protein 19 Short name= ERp19 Thioredoxin-like protein p19
Expression Region	25-170aa
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	18.5kDa
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 Mouse Thioredoxin domain-containing protein 12 (Txndc12) is produced using a yeast expression system. The protein represents the full length of the mature form, spanning amino acids 25 to 170. It comes with an N-terminal 6xHis tag, which appears to simplify both purification and detection processes. SDS-PAGE analysis suggests the product achieves greater than 90% purity, making it potentially useful for various experimental approaches.

Thioredoxin domain-containing protein 12 (Txndc12) seems to participate in cellular redox processes. It likely plays an important role in maintaining redox homeostasis within cells. The protein belongs to the thioredoxin family, which appears essential for reducing oxidative stress and may function as a key component in cellular signaling pathways. Understanding this protein could provide insights into redox biology and its role in both normal physiology and disease states.

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

This N-terminal 6xHis-tagged Txndc12 might work well in pull-down assays to identify potential binding partners. It could also help validate known interactions with other proteins involved in endoplasmic reticulum function or protein folding pathways. The high purity level (>90%) suggests it would be suitable for co-immunoprecipitation experiments or surface plasmon resonance studies. The His-tag allows for immobilization on nickel-based matrices, which may be useful for systematic screening of protein libraries or cell lysates.

2. Antibody Development and Validation

The recombinant protein appears to be an ideal antigen for generating mouse Txndc12-specific antibodies in rabbits or other host species. Since the mature protein region (25-170aa) represents the functional domain, it seems

appropriate for producing antibodies that would recognize the native protein in research applications. The His-tag could also be helpful for developing tag-specific detection methods during experimental validation.

3. Structural and Biochemical Characterization

This purified recombinant protein may prove useful for biophysical studies. These could include circular dichroism spectroscopy, dynamic light scattering, and analytical ultracentrifugation to characterize its folding state and oligomerization properties. Yeast expression systems typically produce properly folded eukaryotic proteins, which suggests this would be suitable for structural studies. The defined expression region (25-170aa) allows researchers to focus their analysis on the thioredoxin domain structure and stability.

4. ELISA-Based Quantitative Assays

The His-tagged Txndc12 could serve as a standard or capture reagent in enzyme-linked immunosorbent assays. This might allow researchers to measure Txndc12 levels in mouse tissue extracts or cell culture samples. The high purity should provide reliable quantitative measurements with minimal background interference. This application may be particularly valuable for studies investigating Txndc12 expression patterns across different mouse tissues or under various experimental conditions.

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.