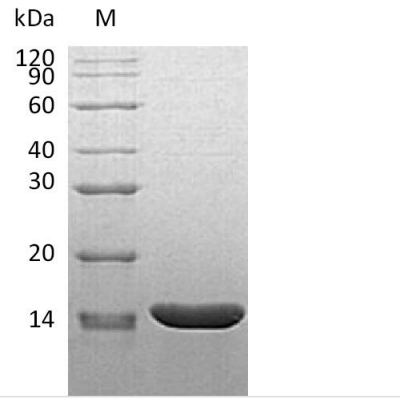
Recombinant Mouse Tumor necrosis factor (Tnf), partial (Active)

Product Code	CSB-AP005031MO
Abbreviation	Recombinant Mouse Tnf protein, partial (Active)
Uniprot No.	P06804
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered 1xPBS, pH 7.4
Product Type	Tumor Necrosis Factor
Immunogen Species	Mus musculus (Mouse)
Biological Activity	The ED50 as determined in a cytotoxicity assay using L?929 mouse fibroblast cells in the presence of the metabolic inhibitor actinomycin D is 2-8 pg/ml.
Purity	Greater than 95% as determined by SDS-PAGE.
Sequence	DKPVAHVVANHQVEEQLEWLSQRANALLANGMDLKDNQLVVPADGLYLVYS QVLFKGQGCPDYVLLTHTVSRFAISYQEKVNLLSAVKSPCPKDTPEGAELKPW YEPIYLGGVFQLEKGDQLSAEVNLPKYLDFAESGQVYFGVIAL
Research Area	Cancer
Source	E.coli
Target Names	Tnf
Expression Region	89-235aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	Tag-Free
Mol. Weight	16.4 kDa
Protein Length	Partial

Image



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

Description

Recombinant Mouse Tumor Necrosis Factor (Tnf) is produced in E. coli and comprises a partial sequence of amino acids 89 to 235. This tag-free protein demonstrates a purity greater than 95% as confirmed by SDS-PAGE analysis. It exhibits biological activity with an ED50 of 2-8 pg/ml in a cytotoxicity assay using L929 mouse fibroblast cells, alongside actinomycin D. The endotoxin level is maintained below 1.0 EU/μg as determined by the LAL method.

Tumor necrosis factor (TNF) appears to be one of those pivotal cytokines that somehow manages to wear many hats in the immune system. It's deeply involved in systemic inflammation and serves as part of the body's acute phase response. TNF plays what seems to be a crucial role in regulating immune cells, inducing fever, triggering apoptotic cell death, and inhibiting both tumorigenesis and viral replication. Given its broad influence, TNF has become integral to research spanning immunology, cancer studies, and various inflammatory diseases—making it a significant target for therapeutic research and drug development.

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. Cytotoxicity Assays for TNF-α Research

This recombinant mouse TNF protein works well as a positive control or standard in cytotoxicity assays. The L-929 mouse fibroblast cell system with actinomycin D, as validated by the activity testing method, appears particularly suitable for this purpose. With its defined ED50 range of 2-8 pg/ml, researchers get a reliable reference point for dose-response studies. Scientists can apply this protein to investigate TNF-α-mediated cell death mechanisms and validate experimental protocols for cytotoxicity screening.

2. In Vitro Inflammatory Response Studies

The biologically active mouse TNF protein may serve as an excellent tool for studying inflammatory pathways in mouse cell culture systems. Scientists can apply this protein to stimulate various mouse cell types, then examine downstream signaling cascades, gene expression changes, and inflammatory mediator production. The high purity (>95%) and low endotoxin levels (<1.0 EU/μg) suggest that observed effects should be specifically attributable to TNF-α activity rather than contaminating factors.

3. Antibody Development and Validation

This tag-free recombinant mouse TNF protein can work as an immunogen for generating anti-mouse TNF antibodies or as a standard for validating existing ones. The protein's high purity makes it suitable for immunization protocols, while its confirmed biological activity allows for functional validation of

neutralizing antibodies. Scientists can apply this protein in competitive binding assays, ELISA development, and antibody specificity testing.

4. Protein-Protein Interaction Studies

The recombinant mouse TNF protein can be applied in biochemical assays to study its interactions with TNF receptors or other binding partners. Given its biological activity, this protein likely maintains proper folding necessary for receptor binding studies using techniques such as surface plasmon resonance, bio-layer interferometry, or co-immunoprecipitation assays. The tag-free nature of the protein eliminates potential interference from fusion tags in binding studies.

5. Preclinical Research Model Development

This biologically active mouse TNF protein may serve as a research tool for developing and validating mouse models of TNF-α-mediated pathological conditions in laboratory settings. Scientists can apply this protein to establish dose-response relationships, optimize experimental protocols, and serve as a positive control in studies examining TNF-α signaling pathways. The defined activity range provides a starting point for determining appropriate concentrations in various experimental paradigms.

Endotoxin	Less than 0.01 EU/μg as determined by LAL method.
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.