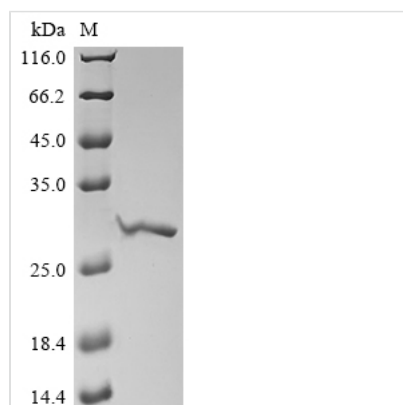




Recombinant *Trichosanthes kirilowii* Ribosome-inactivating protein alpha-trichosanthin

Product Code	CSB-EP357829TIFb0
Abbreviation	Recombinant <i>Trichosanthes kirilowii</i> rRNA N-glycosidase 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.	P09989
Storage Buffer	Tris-based buffer, 50% glycerol
Product Type	Recombinant Proteins
Immunogen Species	<i>Trichosanthes kirilowii</i> (Chinese snake gourd) (Chinese cucumber)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	DVSFRLSGATSSSYGVFISNLRKALPNERKLYDIPLLRSSLPGSQRYALIHNTNY ADETISVAIDVTNVYIMGYRAGDTSYFFNEASATEAAKYVFKDAMRKVTLPSYG NYERLQTAAGKIRENIPLGLPALDSAITTLFYNNANSAASALMVLIQSTSEAARY KFIEQQIGKRVDKTFPLSLAISLENSWSALSKQIQIASTNNGQFESPVVLINAQN QRTITNVDAAGVVTSNIALLLNRNNMA
Research Area	Others
Source	E.coli
Target Names	N/A
Expression Region	24-270aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-tagged
Mol. Weight	30.8 kDa
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 *Trichosanthes kirilowii* Ribosome-inactivating protein alpha-trichosanthin is produced using an *E. coli* expression system and carries an N-terminal 10xHis tag. This protein contains the complete mature sequence from amino acids 24-270. SDS-PAGE analysis indicates the product reaches greater than 90% purity, which appears to meet quality standards for research use.

Alpha-trichosanthin comes from *Trichosanthes kirilowii* and is recognized for its capacity to shut down protein synthesis through ribosome inactivation. The mechanism involves removing a specific adenine base from ribosomal RNA—a modification that seems critical for its research applications in protein synthesis regulation. Scientists often turn to this protein when studying ribosome structure and function, though the complexity of these systems means results may vary.

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. Ribosome-Inactivating Protein Biochemical Characterization

Researchers can use this recombinant alpha-trichosanthin to examine the enzymatic properties and substrate preferences of ribosome-inactivating proteins (RIPs). In vitro ribosome binding and inactivation assays offer one approach. The N-terminal 10xHis tag makes protein purification and immobilization more straightforward for kinetic studies with rabbit reticulocyte lysate or wheat germ translation systems. Scientists might investigate the protein's N-glycosidase activity on ribosomal RNA, though determining optimal conditions like pH, temperature, and ionic strength often requires careful optimization.

2. Protein-Protein Interaction Studies

The His-tagged recombinant protein works well for pull-down assays designed to identify cellular binding partners and ribosomal components that may interact with alpha-trichosanthin. Nickel-affinity chromatography allows researchers to capture protein complexes from cell lysates, followed by analysis through mass spectrometry or Western blotting. This strategy could help map the protein's cellular targets and clarify how it recognizes and binds ribosomes, though complex cellular environments sometimes complicate interpretation.

3. Antibody Development and Validation

This purified recombinant protein can function as an immunogen for producing polyclonal or monoclonal antibodies against alpha-trichosanthin. The high purity level (>90%) likely reduces cross-reactivity with bacterial contaminants during immunization. Generated antibodies can be tested using ELISA, Western blot,



and immunoprecipitation assays with the recombinant protein serving as a positive control. This approach enables detection and quantification of native alpha-trichosanthin in plant extracts, though antibody specificity varies depending on the chosen epitopes.

4. Structural and Biophysical Analysis

The recombinant protein provides adequate material for detailed structural studies using circular dichroism spectroscopy, dynamic light scattering, and analytical ultracentrifugation. Researchers can examine the protein's secondary structure, thermal stability, and oligomerization behavior across different buffer conditions. The His tag allows for oriented attachment to sensor surfaces in surface plasmon resonance experiments, which may help analyze binding kinetics with ribosomal subunits or other large molecular targets. However, the presence of the tag itself could potentially influence some measurements.

Shelf Life

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