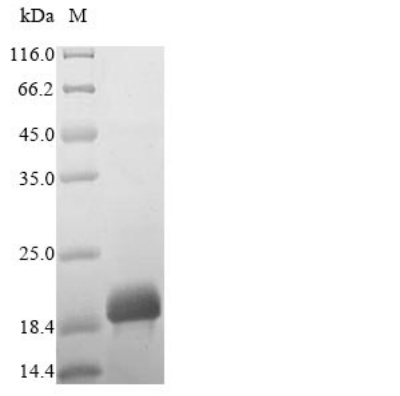
Recombinant Tyrophagus putrescentiae Mite group 2 allergen Tyr p 2

Product Code	CSB-EP520769TRH
Abbreviation	Recombinant Tyrophagus putrescentiae Mite group 2 allergen Tyr p 2 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.	O02380
Product Type	Recombinant Protein
Immunogen Species	Tyrophagus putrescentiae (Mold mite) (Acarus putrescentiae)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	GQVKFTDCGKKEIASVAVDGCEGDLCVIHKSKPVHVIAEFTANQDTCKIEVKVT GQLNGLEVPIPGIETDGCKVLKCPLKKGTKYTMNYSVNVPSVVPNIKTVVKLLA TGEHGVLACGAVNTDVKP
Research Area	Others
Source	E.coli
Protein Names	Allergen: Typ p 2
Expression Region	16-141aa
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	17.3 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 Tyrophagus putrescentiae Mite group 2 allergen Tyr p 2 is

produced in E. coli and contains the full length of the mature protein, corresponding to amino acids 16-141. The protein includes an N-terminal 6xHis tag that makes purification and detection more straightforward. SDS-PAGE analysis confirms that this recombinant protein achieves purity levels exceeding 85%, which appears suitable for various research applications.

Tyrophagus putrescentiae Mite group 2 allergen Tyr p 2 represents a significant allergen from the mold mite that researchers often examine when studying allergic responses. This protein seems to play a key role in triggering immune reactions, potentially making it a valuable research tool. Studies typically focus on how it may be involved in immune response pathways and allergenicity testing.

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. Allergen-Specific IgE Binding Studies

This recombinant Tyr p 2 protein works well in enzyme-linked immunosorbent assays (ELISA) for examining IgE binding patterns in serum samples from people with suspected mite allergies. The N-terminal 6xHis tag allows for protein attachment onto nickel-coated plates or other His-tag compatible surfaces, creating more standardized binding assays. Scientists can examine cross-reactivity patterns between Tyr p 2 and other group 2 mite allergens, which may help reveal the molecular basis of allergenic responses. The high purity (>85%) likely ensures reliable and reproducible results in quantitative immunoassays.

2. Monoclonal Antibody Development and Characterization

The recombinant protein acts as an immunogen for producing monoclonal antibodies specific to Tyrophagus putrescentiae group 2 allergen in laboratory animals. Researchers can use the His-tagged protein in hybridoma screening assays to identify high-affinity antibody clones through pull-down experiments and binding specificity tests. These antibodies can then be characterized for their epitope recognition patterns and binding kinetics using the same recombinant protein as a reference standard. The defined expression region (16-141aa) representing the mature protein suggests that antibodies are raised against the biologically relevant form of the allergen.

3. Protein Structure-Function Analysis

This recombinant Tyr p 2 appears useful in biophysical characterization studies, including circular dichroism spectroscopy, dynamic light scattering, and thermal stability assays to better understand its structural properties. The His-tag makes purification and concentration adjustments easier for various analytical techniques. Scientists can examine protein folding, secondary structure content,

and stability under different buffer conditions to establish what might be optimal storage and handling protocols. Comparative structural studies with other group 2 allergens could provide insights into conserved structural motifs, though results may vary between different allergen variants.

4. Allergen Cross-Reactivity Mapping

The protein works in competitive inhibition assays to study cross-reactivity between Tyrophagus putrescentiae and other mite species allergens. Using patient sera or characterized antibodies, researchers can perform inhibition ELISA experiments where this recombinant Tyr p 2 competes with other group 2 allergens for binding sites. The His-tag makes protein attachment and detection more manageable in these comparative binding studies. Such research may help map allergenic epitopes and could improve understanding of the molecular basis of cross-reactive responses in mite allergy research, though individual patient responses can vary considerably.

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.