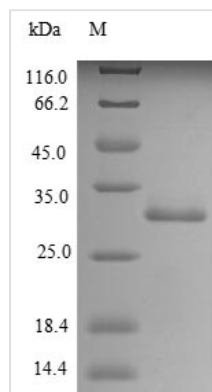




Recombinant Rat Trypsin-4 (Try4)

Product Code	CSB-EP319450RA
Relevance	Preferential cleavage: Arg- -Xaa, Lys- -Xaa.
Abbreviation	Recombinant Rat Try4 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.	P12788
Product Type	Recombinant Protein
Immunogen Species	Rattus norvegicus (Rat)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	IVGGYTCPKHLVPYQVSLHDGISHQCGGSLISDQWVLSAAHCYKRKLQVRLGE HNIHVLEGGEQFIDAEKIIRHPEYNKDTLDNDIMLIKSPAVLNSQVSTVSLPRS CASTDAQCLVSGWGNTVSIGGKYPALLQCLEAPVLSASSCKKSYPGQITSNMF CLGFLEGGKDSCDGDGGPVVCNGEIQQGIVSWG SVCAMRGKPGVYTKVCNY LSWIQETMANN
Research Area	Cell Biology
Source	E.coli
Target Names	Try4
Protein Names	Pretrypsinogen IV Trypsin IV
Expression Region	24-247aa
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	29.6 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 Rat Trypsin-4 (Try4) is produced in *E. coli* and contains the full length of the mature protein, covering amino acids 24 to 247. With an N-terminal 6xHis-tag, this protein is purified to over 85% as determined by SDS-PAGE analysis. It's designed strictly for research use, offering what appears to be a dependable tool for various biochemical applications.

Trypsin-4 is a serine protease that plays a role in protein digestion. Part of the trypsin family, it seems to be critical for catalyzing the hydrolysis of peptide bonds, which breaks down proteins. Scientists frequently study this enzyme for its role in protein processing, and it's become essential in research examining proteolytic pathways and digestive enzyme function.

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 Using Pull-Down Assays

The N-terminal 6xHis-tagged recombinant rat trypsin-4 can be attached to nickel-affinity resins to find potential binding partners or substrates in rat tissue lysates or cell extracts. This method may allow researchers to explore the molecular interactions of Try4 across different biological settings. The high purity (>85%) likely reduces background binding from contaminating proteins during pull-down experiments. These studies could reveal insights into cellular pathways and regulatory networks that involve rat trypsin-4.

2. Antibody Development and Validation

This recombinant protein works well as an antigen for creating specific antibodies against rat trypsin-4, both polyclonal and monoclonal types. Since the full-length mature protein (24-247aa) includes the complete antigenic profile, antibodies should recognize native rat Try4 in different research settings. Scientists can use this protein for antibody screening, specificity testing, and measuring binding strength through ELISA-based assays. The His-tag makes purification and attachment straightforward for antibody validation work.

3. Structural and Biochemical Characterization Studies

Recombinant rat trypsin-4 can be used for detailed structural analysis using methods like X-ray crystallography, NMR spectroscopy, or cryo-electron microscopy. Scientists can examine the three-dimensional structure, folding patterns, and shape changes of this serine protease family member. High purity levels make it suitable for biophysical studies including thermal stability analysis, circular dichroism spectroscopy, and dynamic light scattering experiments. Such work might help explain the molecular basis of Try4 function and its evolutionary development.



4. Comparative Proteomics and Species-Specific Studies

This rat-specific trypsin-4 protein makes possible comparative studies with trypsin relatives from other species to explore evolutionary relationships and functional differences. Researchers can conduct cross-species binding studies, compare substrate preferences, and perform genetic analyses using this well-defined recombinant protein. The E. coli expression system appears to provide consistent protein production for larger comparative experiments. Research like this could advance our understanding of trypsin family evolution and how digestive enzymes have adapted differently across species.

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.