

# Active Recombinant Porcine Trypsin

**Cat. No.** Trypsin-21P    **Lot. No.** (See product label)

## SPECIFICATION

<b>Product Overview</b>	This product is a recombinant porcine trypsin expressed by <i>Pichia pastoris</i> . It is produced in an environment compliant with GMP regulations, containing no animal-derived components and being free from animal - sourced viral contamination (such as swine influenza virus and porcine parvovirus). $\beta$ -Trypsin: > 70% $\alpha$ -Trypsin: <20%
<b>Species</b>	Porcine
<b>Source</b>	Yeast
<b>Description</b>	Trypsin is a serine endopeptidase secreted by the pancreas. Its recognition sites are lysine or arginine in proteins, and the cleavage sites are at the carboxyl-terminal of lysine or arginine residues. Naturally, it lacks chymotrypsin activity. The activity of this product is inhibited by serine protease inhibitors such as PMSF and TLCK, as well as metal ion chelators such as EDTA.
<b>Form</b>	Lyophilized
<b>Purity</b>	$\geq 95\%$ by SDS-PAGE
<b>Bio-activity</b>	> 6200 USP U/mg
<b>Protein Content</b>	$\geq 100 \mu\text{g}$
<b>Unit definition</b>	One USP unit was defined as a 0.003 increase in absorption at 253 nm per minute of enzymatic digestion of BAEE in 3.2 mL of reaction system (1 cm optical path) at 25

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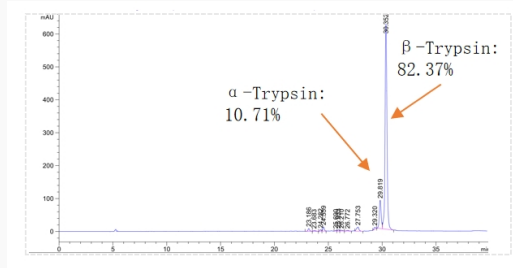
	centigrade, pH 7.6.
<b>Usage</b>	<p>1. It is recommended to centrifuge at 100-200 g for 2 minutes before use. Then, carefully open the tube and add 50-100 <math>\mu</math>L of 1 mM HCl for reconstitution. Next, close the tube cap and invert the tube or shake it to ensure thorough mixing. After reconstitution, it can be stored at 4 centigrade or -20 centigrade for at least 12 months. If reconstituted with a slightly alkaline solution such as ammonium bicarbonate, it can be stored at 4 centigrade for 1-2 weeks. For long-term storage, it is recommended to aliquot and freeze at -20 centigrade, where it can be stored for at least 12 months. Note: If needed, the 1 mM HCl reconstitution solution can be provided.</p> <p>2. After reconstitution, it can be directly used for protein digestion. Incubate the protein with trypsin at a protease to protein ratio of 1: 100 to 1: 50.</p> <p>3. Digest at 37 centigrade overnight.</p>
<b>Applications</b>	Protein analysis, such as protein mass spectrometry, sequencing, peptide mapping analysis.
<b>Note</b>	<p>1. After reconstitution, try to avoid repeated freeze-thaw cycles for this product;</p> <p>2. Please wear lab coat and disposable gloves when using;</p> <p>3. This product should not be used directly for clinical diagnosis and treatment.</p>
<b>Stability</b>	This product should be stored at 2-8 centigrade, where it can be preserved for at least 12 months.
<b>Storage</b>	At 2-8 centigrade
<b>Shipping</b>	Ice pack
<b>Reconstitution</b>	1 mM HCl

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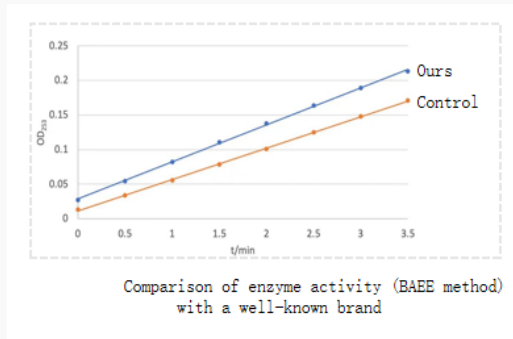
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**High purity**



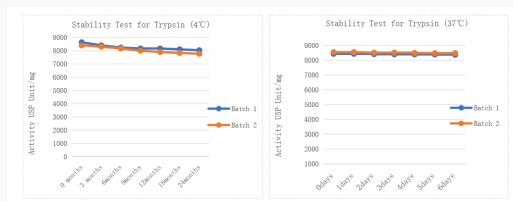
HPLC of our recombinant trypsin:  $\beta$ -trypsin > 80%

**High activity**



Comparison of enzyme activity (BAEE method) with a well-known brand: Activity > 6200 USP U/mg

**High stability**



Store at 4 centigrade for 24 months, or at 37 centigrade for 1 week, the enzyme still maintain high enzyme activity.

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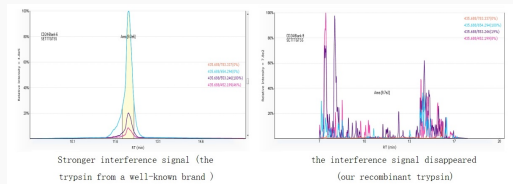
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## Proteomics

Design: After the samples are pretreated, they should be digested separately with our trypsin and that from a well-known brand at 37 centigrade overnight. The peptides were desalted and then analyzed by LC-MS/MS. RESULT: Our recombinant trypsin showed excellent performance in both the number of identified proteins and the missed cleavage rate of peptide fragments.

## Characteristic peptide analysis



## Peptide analysis



Design: After the samples are pretreated, they should be digested separately with our trypsin and that from well-known brands at 37 centigrade for 4h. The peptides were desalted and then analyzed by LC-MS/MS. RESULT: The peptide map analysis of samples digested by our trypsin was basically consistent with well-known brands, showing good repeatability and lower missed cleavage rate.

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Brand	are					Number of peaks	Area of peaks	Sequence coverage
	N- Oxidation	N- Deamidation	N- Aro	D- H <sub>2</sub> O loss on D	K- Oxidation			
Well-known brand	2.16	0.22	0.15	0.44	0.23	241	47%	88%
Ours	2.13	0.24	0.15	0.43	0.25	245	47%	89%

### Sequence coverage and PTM analysis

Design: After pretreatment of double-clonal antibody, they should be digested separately with our trypsin and that from a well-known brand. RESUL: Compared with well-known brand, our trypsin showed excellent performance in terms of sequence coverage, and there were no differences in common PTMs.

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