

Trypsin recombinant, proteomics grade

recombinant from *Pichia pastoris*

Cat. No. 3 357 228 3 × 20 µg

Cat. No. 3 357 236 10 × 20 µg

Bulk quantities available upon request

Version 1, April 2003

Store at -20°C

1. Product description

Proteome research demands for highly purified and specific proteases.

Proteins isolated and separated from a given sample (blood, tissue) by 2-D electrophoresis or liquid chromatographic methods have to be cleaved in the course of sample preparation. A reproducible cleavage pattern of digested proteins is a prerequisite for a clear identification of these proteins in mass spectrometry.

Recombinant Trypsin proteomics grade is especially targeted for the digestion of proteins before mass spectrometry analysis.

The product was designed together with the Roche Proteomics Group.

2. Product characteristics

Source	Recombinant from <i>Pichia pastoris</i>
Molecular weight	23 475 D
Formulation	Frozen solution in 10 mM HCl, 20 mM CaCl ₂ ; pH 1.5 - 2.5
Concentration	1 mg / ml
Purity	Recombinant Trypsin proteomics grade is a highly purified enzyme. The preparation is free of other protease activities. Especially chymotrypsin is absent in the formulation. For purity profile of recombinant trypsin see fig.1

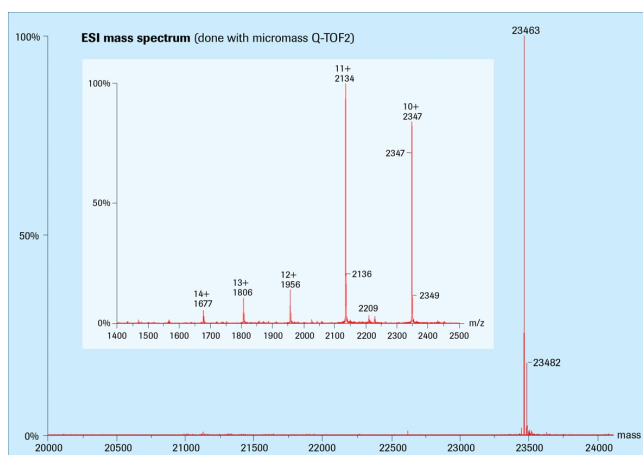


Fig. 1: Purity profile of recombinant Trypsin

Specificity

Recombinant Trypsin proteomics grade is a serine protease. It specifically cleaves peptide bonds at the C-terminal side of lysine and arginine.

Stability

Stable at -20 °C until the expiration date (see label).

3. Application

In-gel digestion

Working solution: Trypsin rec. proteomics grade is first dissolved with H₂O to a concentration of 0.1 mg/ml and further diluted with digestion buffer (50 mM ammonium hydrogencarbonate, pH 8.5) to 1-5 mg Trypsin in 100 ml immediately before use.

Note: In-gel digestion may be performed in a salt free system without additional buffer provided pH during digestion is about 8.0. This can be achieved by pH equilibrating the gel pieces during the washing steps for SDS and the stain removal.

Trypsin rec. proteomics grade is first dissolved with H₂O to the desired concentration. This solution can be added directly to the destained gel pieces. This procedure reduces the load of substances in mass spectrometry. The digest solution can be transferred directly to MS analysis.

Digestion time

Recombinant Trypsin has a high specific activity (not less than 185 units per mg, Chromozym TYR* as substrate). The resulting „digestion performance“ of the product provides the possibility for a significant reduction of the digestion time.

A reduced digestion time results in a smaller amount of autodigest fragments of Trypsin. This leads to a higher accuracy in mass spectrometry.

Autodigest Products

Recombinant Trypsin shows a limited degree of auto-lysis. See fig. 2 for autodigest fragments obtained after in-gel under standard conditions.

Theoretical masses of rec. Trypsin fragments	Signal intensity in MALDI mass spectrum
842,508	no signal
952,388	no signal
1006,486	normal
1045,562	normal
1469,728	weak
1736,839	weak
1768,796	normal
2158,027	weak
2211,100	strong
2283,176	normal
3013,319	no signal

Fig. 2: Autodigest Fragments of rec. Trypsin after in-gel digest

Related products

Product	Pack size	Cat. No.
<i>Protease sequencing grade</i>		
Endoproteinase Arg-C sequencing grade	3 x 5 µg	1 370 529
Endoproteinase Lys-C sequencing grade	5 µg 3 x 5 µg	1 420 429 1 047 825
Endoproteinase Glu-C sequencing grade	50 µg 3 x 50 µg	1 420 399 1 047 817
Endoproteinase Asp-N sequencing grade	2 µg 3 x 2 µg	1 420 488 1 054 589
<i>Protease Inhibitors</i>		
Complete	20 tablets	1 697 498
	3 x 20 tablets	1 836 145
Complete, EDTA-free	20 tablets	1 873 580
Complete, Mini	25 tablets	1 836 153
Complete, Mini, EDTA-free	25 tablets	1 836 170
<i>Substrates</i>		
Chromozym TRY	20 mg	378 488

* Chromozym is a trademark of Pentapharm AG, Basel, Switzerland

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to order, solve technical queries, find product information,
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