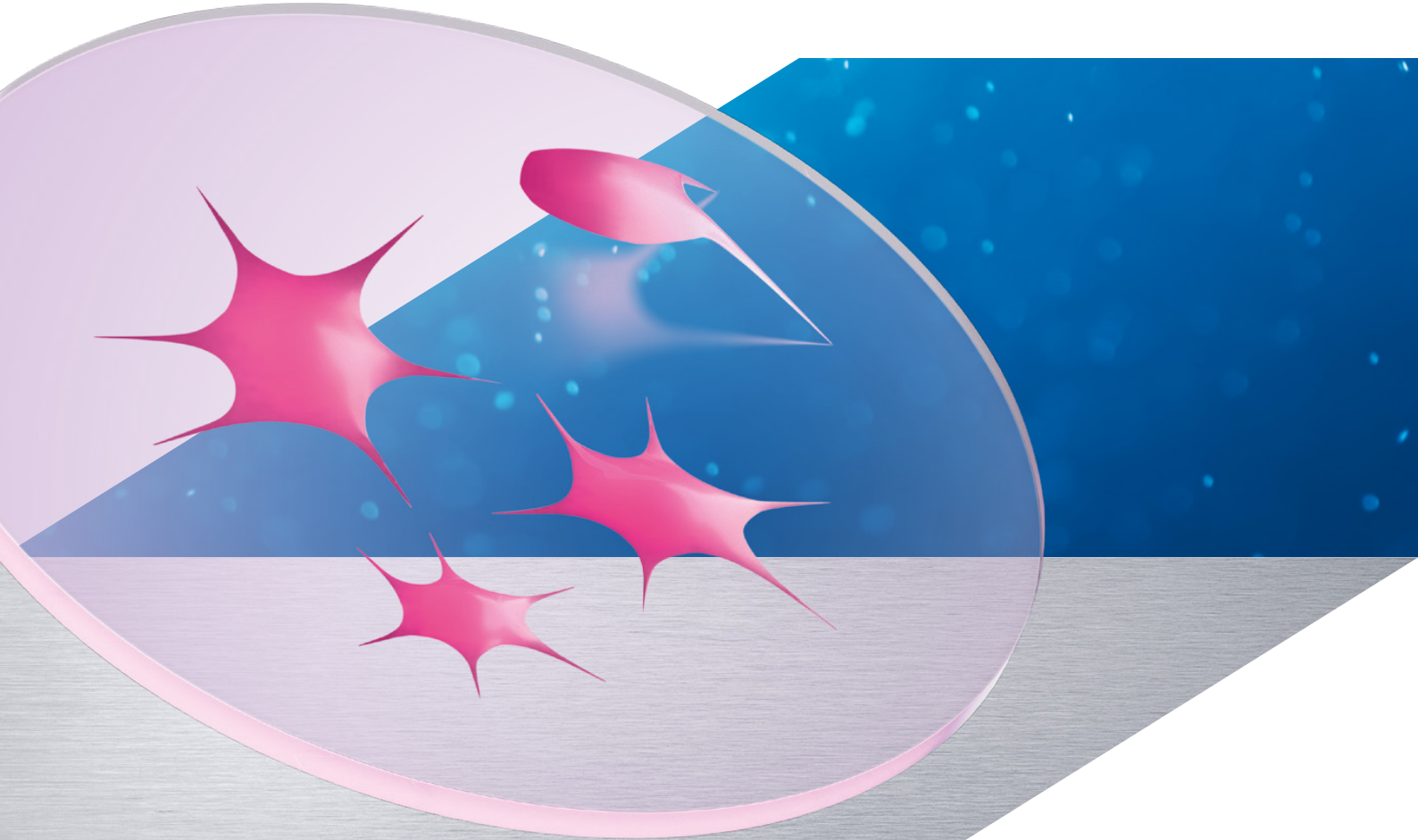


**Secure and efficient protein production**

*Recombinant Trypsin, GMP Grade*



## Supporting your production challenges

*With exceptional enzyme quality and reproducibility*

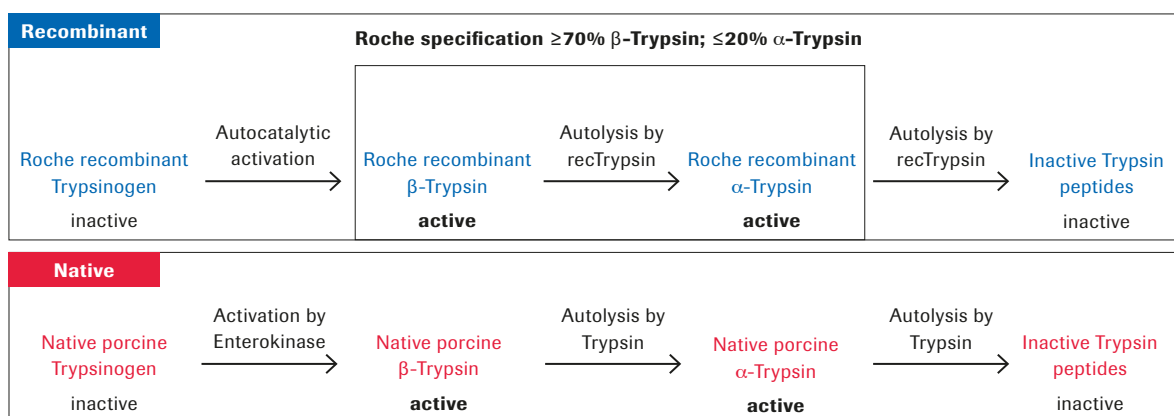
Trypsin is a serine protease widely used in biopharmaceutical manufacturing to specifically cleave the C-terminus of arginine and lysine in peptide chains. Typically isolated from animal tissue, the use of native trypsin in the production of biologics and pharmaceuticals has come under stricter scrutiny as regulatory authorities strive to ensure product consistency and safety.

To address demands of high-quality protein production, Roche has transformed the porcine trypsin gene into the expression host *Pichia pastoris* and created a recombinant enzyme unrivaled in performance and purity. Recombinant Trypsin is expressed as active protease, with equivalent properties compared to native trypsin.

### Reduce production costs while improving manufacturing processes

- Consistent ratio of  $\geq 70\%$   $\beta$ -trypsin reduces setup costs for individual production runs
- No degradation products or impurities, resulting in high enzyme activity that improves process yield

### *More $\beta$ -Trypsin based on defined activation of pure Trypsinogen*



**Figure 1:** Trypsin life cycle. During synthesis of Recombinant Trypsin, trypsinogen is the precursor molecule of active  $\beta$ -trypsin. High amounts of active  $\beta$ -trypsin molecules, the primary form of active trypsin, are the result of a controlled autocatalytical process in downstream processing. This allows us to guarantee more than 70% of intact  $\beta$ -trypsin, while the process starting from native trypsinogen, results in a cascade of active and inactive degradation products.

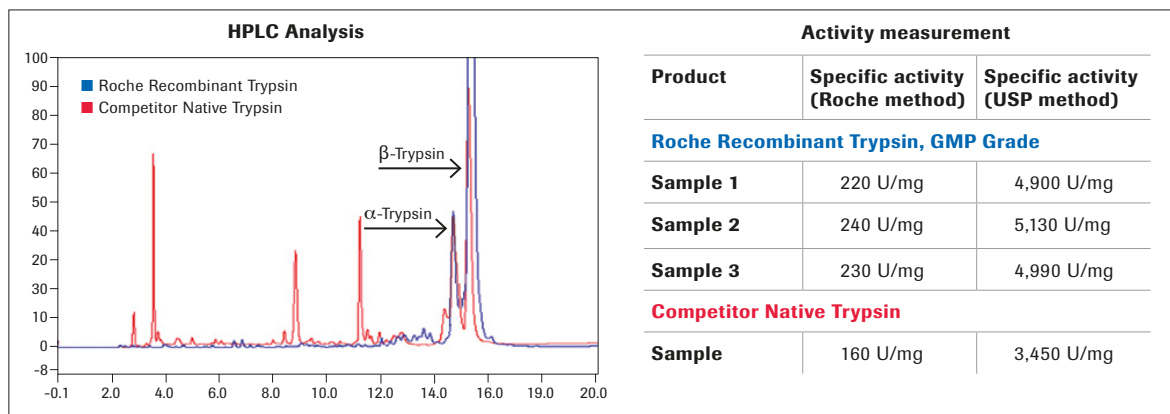
### Reduce risk and streamline regulatory approvals

- Animal-component-free production, reducing risk of contamination
- Manufactured under DIN EN ISO 13485 in accordance to good manufacturing practice (GMP) guidelines
- Regulatory expertise available upon request to support product registration

### Improve your yield with reliable and consistent results

- Self-catalytic activation eliminates the need for additional proteases which can cause inconsistencies in your final product
- Track record of 30 consecutive batches of recombinant trypsin within a specific activity range.

*High integrity for respectable activity*



**Figure 2:** HPLC and activity comparison of two porcine trypsin samples. Roche Recombinant Trypsin shows significantly higher integrity of intact  $\alpha$ - and  $\beta$ -trypsin, and no degradation products or impurities. Peak area analysis indicates 73%  $\beta$ -trypsin and 13%  $\alpha$ -trypsin in the Roche product, compared to 34%  $\beta$ -trypsin and 23%  $\alpha$ -trypsin in the competitor product. The high purity of Roche Recombinant Trypsin correlates with the activity measured by Chromozym TRY (Roche method) or BAEE (USP method), respectively.

## Specifications

### Trypsin, recombinant, from porcine pancreas, expressed in *Pichia pastoris*

<b>Appearance</b>	clear, colorless to slightly yellowish solution
<b>Composition</b>	HCl, 10 mmol/l, CaCl <sub>2</sub> , 20 mmol/l
<b>pH value</b>	2 +/-0.5
<b>Activity</b>	≥ 10,800 U/ml (with Chromozym TRY)
<b>Specific activity</b>	≥ 180 U/ml (with Chromozym TRY)
<b>Protein</b>	70 +/-10 mg/ml
<b>Stability</b>	at -15 to -25°C within specification range for 24 months (1 g) or 36 months (3.5 MU) respectively



## Ordering information

### Product

Trypsin, recombinant, from porcine pancreas, expressed in *Pichia pastoris*

### Pack size

3.5 MU  
1 g = 0.23 MU

### Catalog number

03 358 658 103  
06 369 880 103

### Related products

Carboxypeptidase B, recombinant, expressed in *Pichia pastoris*, solution

### Pack size

30 KU

### Catalog number

03 358 682 103

Proteinase K, recombinant, PCR Grade, expressed in *Pichia pastoris*, solution

### Pack size

850 ml

### Catalog number

03 654 672 103

DNase I, recombinant, Grade I, expressed in *Pichia pastoris*, lyophilizate

### Pack size

10 KU

### Catalog number

03 724 778 103

## Regulatory disclaimer

For further processing only.

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