

# Active Recombinant Porcine Trypsin, Molecular Biology Grade

**Cat. No.** Trypsin-24P    **Lot. No.** (See product label)

## SPECIFICATION

|                         |                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product Overview</b> | From yeast cells with cloned gene encoding genetically engineered Trypsin from porcine pancreas                                                                                                                                                                                                                                                                                           |
| <b>Species</b>          | Porcine                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Source</b>           | Yeast                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Description</b>      | Porcine Trypsin is a serine protease that specifically cleaves peptide bonds at the C-terminal of lysine and arginine residues. This product is produced through yeast gene recombinant expression, ensuring a complete amino acid sequence identical to porcine pancreatic trypsin. Recombinant Porcine Trypsin shares enzymatic properties identical to its animal-sourced counterpart. |
| <b>Form</b>             | White or off-white lyophilized powder                                                                                                                                                                                                                                                                                                                                                     |
| <b>Bio-activity</b>     | >10,000 UPS Unit/mg                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Molecular Mass</b>   | >24kD                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Purity</b>           | ≥ 90%                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Applications</b>     | Protein Digestion: Proteomics: Recombinant Porcine Trypsin is widely used in proteomics for digesting proteins into peptides, which are then analyzed by mass spectrometry (MS). Its ability to cleave peptides at the carboxyl side of lysine and arginine residues is critical for generating consistent and predictable peptide fragments. Cell Culture:                               |

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Cell Detachment: It is commonly used in cell culture to detach adherent cells from the surface of culture vessels. The recombinant form ensures minimal contamination and consistent performance, making it ideal for sensitive applications. Biopharmaceutical Production: Bioprocessing: In the production of biologics, such as therapeutic proteins, recombinant Porcine Trypsin is used in downstream processing to remove fusion tags from recombinant proteins or to activate precursor proteins. Vaccine Production: Virus Activation: It is used in the production of vaccines, especially in the activation of certain viruses during the manufacturing process. Food Industry: Protein Hydrolysis: In the food industry, it can be used for the hydrolysis of proteins in the production of protein hydrolysates, which are used as flavor enhancers or nutritional supplements.

|                        |                                                                                                                                                                                                                                             |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Storage</b>         | At -20 centigrade Recommended. One year from the date of manufacture stored at 2-8 centigrade.                                                                                                                                              |
| <b>CAS No.</b>         | 9002-07-7                                                                                                                                                                                                                                   |
| <b>Unit Definition</b> | One USP unit of trypsin activity will produce a Delta A253 of 0.003 per minute in a reaction volume of 3.0 mL at pH7.6 and 25 centigrade, with BAEE as a substrate.                                                                         |
| <b>EC No.</b>          | 3.4.21.4                                                                                                                                                                                                                                    |
| <b>pI</b>              | 10.5                                                                                                                                                                                                                                        |
| <b>pH range</b>        | 7.0-11.0, optimum pH: 8.0                                                                                                                                                                                                                   |
| <b>Protein Content</b> | Protein composition: $\geq 70\%$ $\beta$ -trypsin, $\leq 20\%$ $\alpha$ -trypsin                                                                                                                                                            |
| <b>Advantages</b>      | High Purity: The recombinant form offers higher purity compared to the native enzyme, with fewer contaminating proteases and other unwanted components. Batch Consistency: Recombinant production ensures consistent enzyme activity across |

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different batches, which is critical for reproducibility in research and manufacturing.

**Reduced Risk of Contaminants:** The risk of contamination with animal-derived pathogens, such as prions or viruses, is significantly reduced in the recombinant version.

**Ethical Considerations:** Recombinant production avoids the ethical concerns associated with harvesting trypsin from animal sources, making it a more acceptable choice for certain users.

|                            |                                             |
|----------------------------|---------------------------------------------|
| <b>Dilution Buffer</b>     | 1 mM hydrochloric acid (pH 3.0)             |
| <b>Storage Buffer</b>      | 1 mM hydrochloric acid or 50 mM acetic acid |
| <b>Temperature profile</b> | Optimal 37 centigrade                       |

|                   |                                                                                                                                                                                      |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Inhibitors</b> | The activity of Porcine Trypsin is susceptible to inhibition by serine protease inhibitors such as PMSF, and metal ion chelators like EDTA can also modulate its enzymatic activity. |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## GENE INFORMATION

|                        |         |
|------------------------|---------|
| <b>Official Symbol</b> | Trypsin |
| <b>Synonyms</b>        | Trypsin |

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