Recombinant Trypsin
100% Animal Origin Free (AOF) Level 3

Storage: Liquid form: -15 °C to -20 °C; Powder form: 2 °C to 8 °C

Description

Trypsin (23.4 kDa) is a serine endoprotease that cleaves amide and ester bonds of amino acids Arginine (Arg) and Lysine (Lys).

Richcore's recombinant trypsin products in liquid and powder form are expressed in *Pichia pastoris* using an artificially synthesized gene as genetic construct. The products are manufactured in Richcore's GMP certified facility, are 100 % Animal Origin Free (AOF) level 3, stable, and free from viral contaminants and contaminating proteases such as Carboxypeptidase A and Chymotrypsin. Both products are greater than 98% pure.

Applications

The products have been developed for use in biopharmaceutical manufacturing processes requiring GMP grade, 100 % AOF level 3, trypsin, specifically in:

1. **Insulin Manufacturing**: To convert proinsulin to insulin by cleaving Arg amino acids at positions B31 and B32 and Lys and Arg amino acids at positions B64 and B65
2. **Vaccine Manufacturing**: To passage cells and accentuate viral propagation via proteolytic action

Additionally, both products can be used in:

1. Cell culturing for detaching adherent cells
2. Proteomics to cleave specific amino acids
3. As a process aid in food processing
4. In manufacturing cosmetics

Key Parameters and Data

Parameter	Specifications (Liquid)	Specifications (Powder)
Appearance	Clear, colorless to pale greenish brown, odorless liquid	White to off-white, odorless powder
Protein by UV280 method	> 60 mg/ml	> 0.6 mg/mg powder
Specific Activity (Protein by UV 280 Method)	>3800 USP Units/mg	> 3800 Units/mg
Purity by GPC-HPLC	> 98%	> 98%
TVAC	< 10 cfu/ml	$< 10^2$ cfu/g
TYMC	< 100 cfu/ml	$< 10^4$ cfu/g
Pathogens	Absent	Absent

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Cell Culturing: Tested for cell dissociation on CHO-K1, Vero, MRC-5, and MDCK cells

Handling and Guidelines for Use

Storage and Handling

Liquid form

1. Store at -15 °C to -25 °C upon receipt
2. Material can sustain upto 5 freeze-thaw cycles. However, it is recommended to prepare one time use aliquots stored at -15 °C to -25 °C
3. Material should be thawed at room temperature

Powder form

1. Store at 2 °C to 8 °C upon receipt

Guidelines for Use

Cell Culturing:

1. Add an appropriate amount from the aliquots/master vial to prepare one time use working solution in appropriate buffer at pH 7.2-7.8. *For example, 1X PBS OR Cell Culture Media without Fetal Bovine Serum. It is recommended to use buffers free of Ca^{2+} and Mg^{2+}containing EDTA for optimal results*
2. Mix the solution well for 1-2 minutes. Do not agitate, do not form bubbles
3. Check pH of the working stock. If necessary, adjust the pH to 7.2- 7.8 with 1M Tris base or 1N HCl
4. Filter the solution under aseptic conditions
5. Do not store over 3 weeks at 2 °C to 8 °C
6. Store at -15 °C to -25 °C for prolonged storage upto 2 months
7. Working solutions can sustain upto 5 freeze-thaw cycles without losing potency for cell dissociation. However, it is best practice to minimize the number of freeze-thaw cycles

The products are not for human or animal consumption, or use as a drug. Please refer to the MSDS of the products for detailed safety profile

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