Worthington Biochemical Corporation

TRYPSIN

Protein Science/Cell Biology

PRODUCT HIGHLIGHT

Worthington purifies trypsin from bovine pancreas. Our enzyme is extensively used in protein sequencing work and for tissue dissociation. For protein sequencing, the Worthington product Code: TRTPCK has been used successfully for many years. Worthington now offers two 'Sequencing Grades' which are purified and characterized to meet the most stringent sequencing application requirements.

Likewise, for tissue culture work, Worthington trypsin has been used by many researchers through the years. We do not offer crude grades such as NF 1:250. Difficulties are often encountered when using these crude preparations including incomplete solubility, lot-to-lot variability, and cell toxicity. While purified trypsin alone may have limited effectiveness for tissue dissociation since it shows little reactivity with extracellular proteins, combinations of purified trypsin and other enzymes such as collagenase and elastase have proven effective for dissociation. The purified enzyme is especially useful for cell harvesting by a process called "trypsinization".

For applications requiring virus free trypsin, Worthington offers VMF (Virus and Mycoplasma Free) Trypsin which is a specially processed trypsin. The product is irradiated to eliminate microorganisms and is quality control tested specifically against Bovine Diarrhea virus, Infectious Bovine Rhinotracheitis (IBR) virus, Herpes virus, Enterovirus, Adenoviruses, Bovine syncytial virus, Parainfluenza type 3 (PI3-SF) and Parvovirus. Additionally, the material is tested to be free of mycoplasma. As a result of the purification process, extraneous proteases and nucleases which could be harmful to cell lines are removed. The trypsin specific activity is very high allowing lower working concentration (0.01% range) resulting in less cell damage. An irradiated form of our TPCK-treated trypsin is also available. See product code TRTVMF.

Description	Activity	Code	Catalog No.	Size
***SequENZ*® Trypsin, Modified, Sequencing Grade** Worthington TPCK-treated trypsin, code TRTPCK, chemically modified to reduce autolysis and increase stability while retaining its specificity. Supplied as a lyophilized powder. Exhibits a single band on SDS-PAGE. Store at -20°C. PROTECT FROM MOISTURE. REQUIRES SPECIAL SHIPPING: ICE PACK.	≥ 150 Units per mg protein (≥ 8,625 BAEE/2,875 USP/NF units per mg protein)	**TRSEQZ**	LS02120 LS02122 LS02123 LS02124	4x25 µg 4x100 µg 1 mg Bulk
Trypsin, Purified Sequencing Grade II Trypsin, treated with L-(tosylamido 2-phenyl) ethyl chloromethyl ketone (TPCK) to inhibit contaminant chymotryptic activity according to Kostka and Carpenter, *J. Biol. Chem., 239*, 1799, (1964). Supplied as a lyophilized powder. Store at -20°C. PROTECT FROM MOISTURE. REQUIRES SPECIAL SHIPPING: ICE PACK.	≥ 150 Units per mg protein (≥ 8,625 BAEE/2,875 USP/NF units per mg protein)	**TRSEQII**	LS02115 LS02117 LS02119 LS02118	4x25 µg 4x100 µg 1 mg Bulk
***SequENZ*® Trypsin, Modified, Sequencing Grade** Ready to use liquid preparation of Trypsin, treated with L-(tosyl-amido-2-phenyl) ehtyl chloromethyl ketone to inhibit contaminating chymotryptic activity, chemically modified to promote stability and further purified to remove autolysis fragments, resulting in a highly stable trypsin product resistant to autolysis while retaining specificity. Store at -20°C. PROTECT FROM MOISTURE. REQUIRES SPECIAL SHIPPING: ICE PACK.	≥ 150 Units per ml TAME	**TRSEQZS**	LS02150 LS02152	250 µg 1000 µg

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Description	Activity	Code	Catalog No.	Size
Trypsin, TPCK Treated Treated with L-(tosylamido 2-phenyl) ethyl chloromethyl ketone (TPCK) to inhibit contaminant chymotryptic activity according to Kostka and Carpenter, *J. Biol. Chem., 239*, 1799, (1964). Dialyzed against 1mM HCl and lyophilized. Store at 2 - 8°C. PROTECT FROM MOISTURE.	≥ 180 Units per mg protein (≥ 10,350 BAEE/3,450 USP/NF u/mg protein)	**TRTPCK**	LS003740 LS003741 LS003744 LS003742	100 mg 500 mg 1 gm Bulk
Trypsin 3X Supplied as a chromatographically purified, diafiltered and lyophilized powder. Store at 2 - 8°C. PROTECT FROM MOISTURE.	≥ 180 Units per mg protein (≥ 10,350 BAEE/3,450 USP/NF u/mg protein)	**TRL3**	LS003708 LS003707 LS003709	100 mg 1 gm Bulk
Trypsin 2X Supplied as a dialyzed and lyophilized powder. Store at 2 - 8°C. PROTECT FROM MOISTURE.	≥ 180 Units per mg protein (≥ 10,350 BAEE/3,450 USP/NF u/mg protein)	**TRL**	LS003702 LS003703 LS003704 LS003706	100 mg 1 gm 10 gm Bulk
Trypsin, 0.22µ Filtered Trypsin chromatographically purified, diafiltered, (Code TRL3) filtered through a 0.22 micron pore size membrane and lyophilized in sterile vials. This product is not tested for pyrogenicity. Store at 2 - 8°C. PROTECT FROM MOISTURE.	≥ 180 Units per mg protein (≥ 10,350 BAEE/3,450 USP/NF u/mg protein)	**TRLS**	LS003736 LS003734 LS003738	50 mg 5x50 mg Bulk
Trypsin, Sterile, Irradiated Free of virus and mycoplasma. Chromatographically purified. Store at 2 - 8°C.	≥ 180 Units per mg protein (≥ 10,350 BAEE/3,450 USP/NF u/mg protein)	**TRLVMF**	LS004454 LS004452	100 mg 5x100 mg
Trypsin, TPCK-Treated, Irradiated Chromatographically purified trypsin treated with L-(tosylamido-2-phenyl) ethyl chloromethyl ketone (TPCK) to inhibit contaminating chrymotropic activity according to (Kostka and Carpenter, *J. Biol. Chem. 239*, 1799, 1964), Code: TRTPCK, lyophilized, irradiated and tested for the absence of mycoplasma and extraneous virus according to 9 CFR 113.53c. Each vial is filled to contain ≥ 100 mg. Store at 2-8°C. PROTECT FROM MOISTURE.	≥ 180 Units per mg protein (≥ 10,350 BAEE/3,450 USP/NF u/mg protein)	**TRTVMF**	LS003750 LS003752	100 mg 5x100 mg

Trypsin is a pancreatic serine protease with substrate specificity based upon positively charged lysine and arginine side chains. The molecular weight of trypsinogen is 24,000 daltons and 23,800 daltons for trypsin. The optimum pH is 8.0. Trypsin is inhibited by organophosphorus compounds such as diisopropyl fluorophosphate (DFP) and natural inhibitors from pancreas. Soybean, lima bean, and egg white are also sources of natural inhibitors.

Stability: Most grades of Worthington trypsin are stable for 2 - 3 years when stored at 2 - 8°C.

Storage: Store at 2 - 8°C. Protect from moisture.

Unit Definition: 1 unit hydrolyzes 1 µmole of p-toluene-sulfonyl-L-arginine methyl ester (TAME) per minute at 25°C, pH 8.2, in the presence of 10mM calcium ion. 1mg trypsin ≥180 TAME units, 10,350 BAEE units, 3,450 USP/NF units.

Technical Notes

The virus and mycoplasma free trypsins (Codes: TRLVMF/TRTVMF) have been subjected to gamma irradiation and filtered through 22µm pore size membrane and tested for bioburden. One TAME unit equals 19.17 NF/USP (BAEE) units or 57.5 BAEE units.

For current citations in real-time, go to the online product listings and reference the Bioz Stars in the yellow highlighted area: https://www.Worthington-Biochem.com/products

Related Products

Cell Isolation Optimizing System • Chymotrypsin • Clostripain (Endoproteinase-Arg-C) • Collagenase • Deoxyribonuclease I • Endo-Lys-C
Hepatocyte Isolation System • Hyaluronidase • Neonatal Cardiomyocyte Isolation System • Neutral Protease (Dispase®) • Papain Dissociation System
Protease Staph (Endoproteinase-Glu-C) • Proteinase K • *STEMxyme*® 1 & 2 Collagenase/Neutral Protease Blends • Trypsin Inhibitors