



PRODUCT HIGHLIGHTS



# TRYPSIN

## Cell Biology/Protein Science

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 particularly clean 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	Cat. No.	Size	Price
<b>SequENZ® Trypsin, Modified, Sequencing Grade</b> 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 BAAE/2875 USP/NF units per mg protein)	<b>TRSEQZ</b>	LS02120	4x25 µg	\$ 78.00
			LS02122	4x100 µg	218.00
			LS02123	1 mg	405.00
			LS02124	Bulk	Inquire
<b>Trypsin, Purified Sequencing Grade II</b> Trypsin, treated with L-(tosylamido 2-phenyl) ethyl chloromethyl ketone (TPCK) to inhibit contaminant chymotryptic activity according to Kostka and Carpenter, <i>J. Biol. Chem.</i> , 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 BAAE/2875 USP/NF units per mg protein)	<b>TRSEQII</b>	LS02115	4x25 µg	\$ 66.00
			LS02117	4x100 µg	183.00
			LS02119	1 mg	340.00
			LS02118	Bulk	Inquire
<b>Trypsin, TPCK Treated</b> Treated with L-(tosylamido 2-phenyl) ethyl chloromethyl ketone (TPCK) to inhibit contaminant chymotryptic activity according to Kostka and Carpenter, <i>J. Biol. Chem.</i> , 239, 1799, (1964). Dialyzed against 1mM HCl and lyophilized. Store at 2 - 8°C. PROTECT FROM MOISTURE.	≥ 180 Units per mg protein (≥ 10,350 BAAE/3,450 USP/NF u/mg protein)	<b>TRTPCK</b>	LS003740	100 mg	\$ 86.00
			LS003741	500 mg	295.00
			LS003744	1 gm	525.00
			LS003742	Bulk	Inquire

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[Worthington-Biochem.com](http://Worthington-Biochem.com)

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Description	Activity	Code	Cat. No.	Size	Price
<b>Trypsin 3X</b> 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)	<b>TRL3</b>	LS003708	100 mg	\$ 42.00
			LS003707	1 gm	250.00
			LS003709	Bulk	Inquire
<b>Trypsin 2X</b> 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)	<b>TRL</b>	LS003702	100 mg	\$ 23.00
			LS003703	1 gm	128.00
			LS003704	10 gm	930.00
			LS003706	Bulk	Inquire
<b>Trypsin, 0.22µ Filtered</b> 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)	<b>TRLS</b>	LS003736	50 mg	\$ 38.00
			LS003734	5x50 mg	165.00
			LS003738	Bulk	Inquire
<b>Trypsin, Sterile, Irradiated</b> 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)	<b>TRLVMF</b>	LS004454	100 mg	\$ 91.00
			LS004452	5x100 mg	335.00
<b>Trypsin, TPCK-Treated, Irradiated</b> Chromatographically purified trypsin treated with L-(tosylamido-2-phenyl) ethyl chloromethyl ketone (TPCK) to inhibit contaminating chymotryptic activity according to (Kostka and Carpenter, <i>J. Biol. Chem.</i> 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)	<b>TRTVMF</b>	LS003750	100 mg	\$ 125.00
			LS003752	5x100 mg	495.00

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.**

### Related Products

Cell Isolation Optimizing System • Chymotrypsin  
 Clostripain (Endoproteinase-Arg-C) • Collagenase • Deoxyribonuclease I  
 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

**Complete Catalog, Tissue Dissociation Guide  
 and Enzyme Manual available online at:**

**Worthington-Biochem.com  
 TissueDissociation.com**