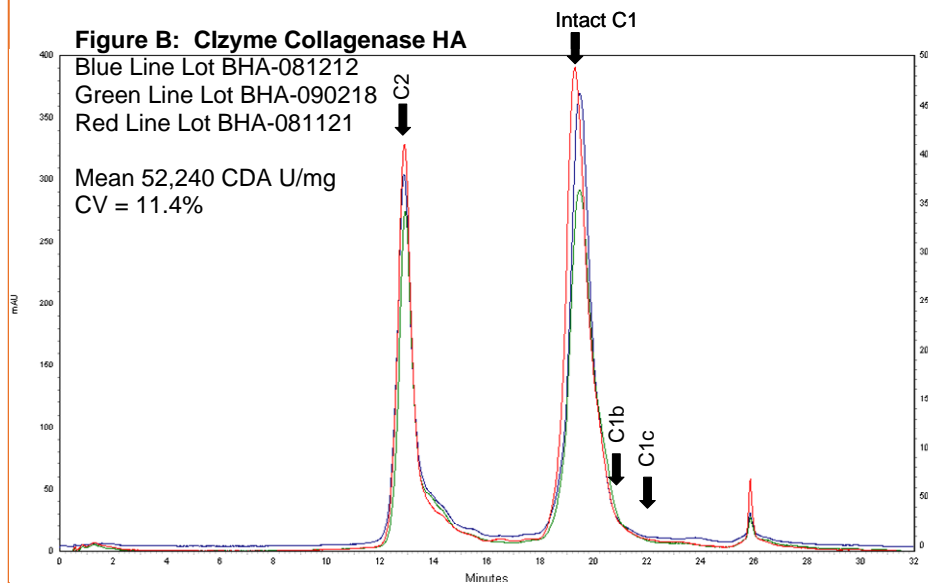
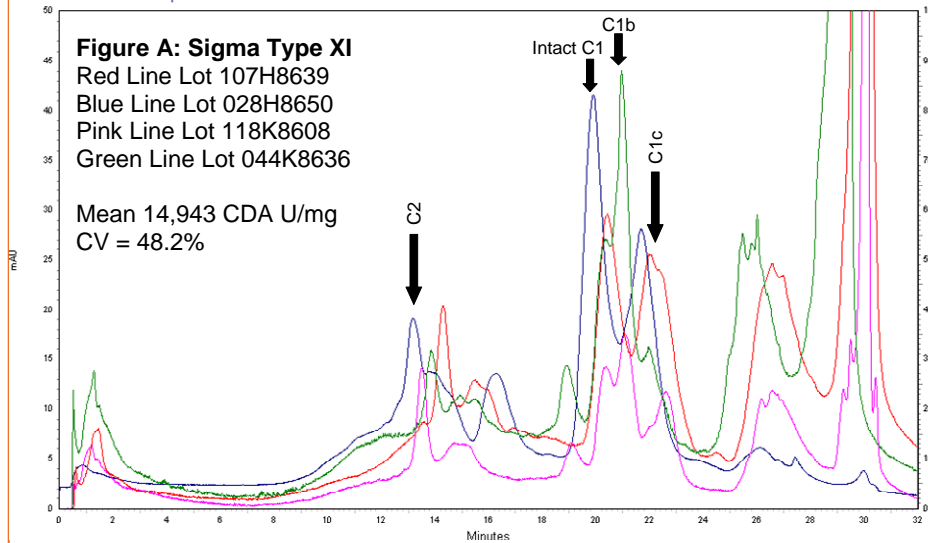


Crude or enriched collagenase tissue dissociation enzyme products have been used since the 1960's to isolate cells from tissue.

The new challenges for translating academic research into pre-clinical and ultimately clinical studies requires a re-examination of the methods used to isolate different cell populations. The advantages of using purified tissue dissociation enzymes for these application are summarized here.

## Enriched vs Purified Collagenase Products



MonoQ anion-exchange HPLC chromatogram overlays of multiple lots of Sigma Type XI enriched collagenase or Clzyme Collagenase HA, purified collagenase product. The peaks defined by correlation with collagen degradation activity and SDS-PAGE analysis<sup>1</sup>

## Problems with crude or enriched collagenase:

- Variable biochemical composition, reflects heterogeneity of the bacterial culture supernatant
- Heterogenous molecular forms of collagenase (see Figure A)
- Lot qualification often required, each lot of product unique

## Advantages of using purified enzymes:

- Uniform collagenase composition, (see Figure B) by HPLC and specific CDA<sup>1</sup> (CDA U/mg protein)
- Purified enzymes; minimal contamination by other enzymes & endotoxin
- Enzyme formulation can be modified to improve cell yield, viability, function

## Figure Legend

- C2= class II collagenase mol wt 114 kDa, specific CDA 10,000 CDA U/mg
- C1= Class I collagenase mol wt 116 kDa, specific CDA 70,000 CDA U/mg
- C1b, C1c= C1 with mol wt ~ 100 kDa, specific CDA 10,000 CDA U/mg
- Specific CDA = CDA Unit per mg of protein

1. McCarthy, RC, et al. Transplant Proc. (2008) 40: 239

## Clzyme™ Enzymes Ordering Information

Product	Catalog #	Pack Size	Price	Intended Application
Clzyme™ Collagenase HA	001-1000	2000 Wunsch Units	\$1600	Human Islets
Clzyme™ Collagenase HA	001-1050	200 Wunsch Units	\$150	Rodent Islets
Clzyme™ Collagenase MA	001-2020	1100 Wunsch Units	\$600	Porcine Islets
Clzyme™ Collagenase MA	001-2070	750 Wunsch Units	\$400	Non-Human Primate Islets
Clzyme™ Collagenase MA	001-2030	2.5 Million CDA Units	\$200	Human Hepatocytes
Clzyme™ Collagenase MA	001-2050	200 Wunsch Units	\$100	Other Applications
Clzyme™ Collagenase LA	001-3010	200 Wunsch Units	\$75	Other Applications
Clzyme™ Thermolysin	002-1000	12 mg	\$200	Neutral Protease
Clzyme™ Thermolysin	002-2000	6 mg	\$100	Neutral Protease
Clzyme™ BP Protease	003-1000	1.1 million neutral protease Units	\$200	Neutral Protease
Clzyme™ Clostripain	004-1000	25 mg	\$350	Trypsin Like Protease

### To order:

- Send order via email to [orders@vitacyte.com](mailto:orders@vitacyte.com)
- Fax an approved Purchase Order to **317.917.3459**
- Call **888.664.2687** from 8:30 AM and 5:30 PM EST Monday-Friday
- Alternatively, US customers can order product through VWR using the catalog numbers above to find the Clzyme products

Orders received before 4:00 PM EST Monday-Thursday will be shipped on dry ice via FedEx for delivery the following day. Overseas orders cannot be shipped on Thursdays unless specifically requested.

Volume discounts are available by contacting us directly.

For information on our products and how VitaCyte is working to take the guesswork out of tissue dissociation procedures, visit [vitacyte.com](http://www.vitacyte.com) or sign up for our newsletter at [http://www.vitacyte.com/?page\\_id=727](http://www.vitacyte.com/?page_id=727).

All products are for **Research Use Only**. Responsibility for applying these products in any clinical procedure lies solely with the end user and institution. For more information on specific applications, please download a copy of the pack insert on our website or contact Technical Service at 888.664.2687 between 8:30 AM and 5:30 PM EST.

Clzyme Collagenase products are purified from supernatants of *C. histolyticum* cultures and contain no bovine derived products. Clzyme Thermolysin is purified from culture media containing bovine casein from milk used for human consumption. Clzyme BP Protease uses no animal proteins at any step of fermentation or purification.

### Quick view:

- **Convenient** pack sizes tailored to specific applications.
- **Mix and match** collagenase and neutral protease to create optimal enzyme compositions
- **Long term stability** of purified enzymes at -20° C
- **Stable to freeze-thaw**
- **Save time & money** by eliminating lot evaluations.

### Selected applications:

Balamurugan, et al (2010) Successful human islet isolation and transplantation indicating the importance of class I collagenase and collagen degradation activity assay. Transplantation 89: 954.

Woods E, et al (2009) Optimized cryopreservation method for human dental pulp-derived stem cells and their tissues fo origin for banking and clinical use. Cryobiology, 59:150.



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