

DESCRIPTION

The MEDNA Trypsin Activity Assay Kit is a chromogenic, microplate-based assay for measuring trypsin activity in purified trypsin and trypsin-containing samples. The assay uses Boc–Gln–Ala–Arg–pNA, a synthetic peptide substrate that releases p-nitroaniline (pNA) upon trypsin-catalyzed cleavage. Formation of pNA is monitored by the increase in absorbance at 405 nm (A405).

A supplied Complete Hydrolysis Reference (CHR) provides the maximum substrate-derived A405 response when hydrolysis is complete. By relating each sample's blank-corrected initial reaction rate to this reference signal, users can calculate activity in mU/mL or, when protein concentration is known, specific activity in mU/mg.

KEY FEATURES

- **Simple two-component reaction:** Mix 50 μ L sample with 50 μ L substrate working solution.
- **Internal reference:** Complete Hydrolysis Reference enables quantitative determination of trypsin activity.
- **Quantitative kinetic readout:** Track pNA formation at 405 nm and calculate activity from the initial linear rate.
- **Flexible sample types:** Suitable for purified trypsin and appropriately diluted research samples containing trypsin.

KIT COMPONENTS

Component	Quantity	Use
Complete Hydrolysis Reference (CHR), 100 $\times$ stock	50 μ L	Dilute 1:100 with Reaction Buffer to make a 1 $\times$ reference used to establish the complete-hydrolysis signal.
Chromogenic Substrate Stock, 100 mM	50 μ L	Dilute 1:100 with Reaction Buffer to make a 1 mM substrate working solution.
Reaction Buffer	50 mL	For preparation of the reference, substrate working solution, and test-sample dilutions.

PRODUCT SPECIFICATIONS

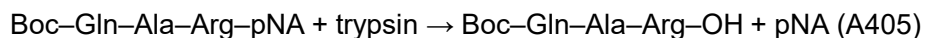
Property	Description
Detection method	Absorbance at 405 nm (A405); kinetic measurement
Substrate	Boc–Gln–Ala–Arg–pNA
Standard reaction format	50 μ L sample + 50 μ L substrate working solution (100 μ L total)
Substrate per reaction	50 nmol (0.5 mM final substrate concentration)
Reported units	mU/mL or mU/mg; 1 mU = 1 nmol substrate hydrolyzed per minute
Storage	–20°C
Intended use	Research use only

RECOMMENDED APPLICATIONS

- **Trypsin Activity Quantification & Enzyme Quality Control:** Measure enzymatic activity in purified trypsin samples. Evaluate batch-to-batch consistency, activity retention, and stability of trypsin products.
- **Cell Culture Applications:** Assess trypsin activity in cell dissociation solutions and monitor residual activity following trypsinization.
- **Biological Sample Analysis:** Investigate trypsin-like protease activity in cell lysates, tissue homogenates, and culture media.
- **Trypsin Inhibitor Studies:** Evaluate the effects of protease inhibitors and experimental conditions on trypsin activity.
- **Protein Processing Research:** Monitor trypsin activity during enzymatic protein processing and optimize proteolytic reaction conditions.

ASSAY PRINCIPLE

Trypsin hydrolyzes Boc-Gln-Ala-Arg-pNA at the Arg-pNA bond, releasing pNA, which produces an A405 signal. The initial rate of A405 increase reflects substrate hydrolysis per minute. The CHR is assayed in parallel and incubated to a verified complete-hydrolysis endpoint, providing the absorbance corresponding to 50 nmol of substrate in the standard reaction.

**FEATURED APPLICATION**

The MEDNA Trypsin Activity Assay Kit provides a simple and quantitative method for measuring enzymatic activity in purified trypsin samples. By monitoring the hydrolysis of a chromogenic substrate at 405 nm, the assay enables determination of trypsin activity in mU/mL or specific activity in mU/mg. This application is particularly useful for evaluating enzyme activity, comparing different trypsin preparations, assessing batch-to-batch consistency, and monitoring activity retention during storage or under different experimental conditions.

Research Use Only

For research use only. Not for diagnostic, therapeutic, or clinical use.