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Product datasheet

Cathepsin D Inhibitor Assay Kit ab126779

1 References 1 Image

Overview

Product name	Cathepsin D Inhibitor Assay Kit
Detection method	Fluorescent
Sample type	Inhibitor compounds
Assay type	Quantitative
Assay time	1h 00m
Product overview	Cathepsin D Inhibitor Screening Kit (ab126779) is a fluorescence-based assay that utilizes the preferred cathepsin D substrate sequence GKPILFFRLK(Dnp)-D-R-NH2) labeled with MCA. Cathepsin D will cleave the synthetic substrate to release the quenched fluorescent group MCA, which can then easily be measured using a fluorometer or fluorescence plate reader at Ex/Em = 328/460 nm. The relative efficacy of test inhibitors are compared to the positive control inhibitor, Pepstatin A (IC_{50} < 0.1 nM). The Cathepsin D assay is simple, straightforward, and can be adapted to 96-well plate assays and is suitable for high throughput screening (HTS). Visit our **FAQs page** for tips and troubleshooting.
Notes	This product is manufactured by BioVision, an Abcam company and was previously called K148 Cathepsin D Inhibitor Screening Kit (Fluorometric). K148-100 is the same size as the 100 test size of ab126779. Apoptosis can be mediated by mechanisms other than the traditional caspase-mediated cleavage cascade. There is growing recognition that alternative proteolytic enzymes such as the lysosomal cathepsin proteases may initiate or propagate pro-apoptotic signals. Cathepsins are lysosomal enzymes that are also used as sensitive markers in various toxicological investigations.
Platform	Microplate reader

Properties

Storage instructions	Please refer to protocols.

Components	100 tests
CD Reaction Buffer	1 x 10ml
Human Cathepsin D	1 vial

Components	100 tests
Pepstatin A Solution	1 x 20µl
Substrate II	1 x 0.2ml

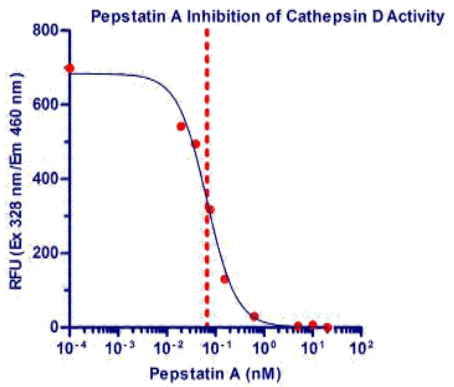
Relevance

Cathepsin D is a normal lysosomal protease that is expressed in all cells. It is an aspartyl protease with a pH optimum in the range of 3-5, and contains two N linked oligosaccharides. Cathepsin D is synthesized as an inactive pro enzyme. Activation involves the proteolytic removal of the 43 amino acid profragment and an internal cleavage to generate the two chain form made up of 34 and 14 kDa subunits. Cathepsin D contains the mannose-6-phosphate lysosomal localization signal that targets the enzyme to the lysosomal compartment where it functions in the normal degradation of proteins. In certain tumor cells, Cathepsin D is abnormally processed and is secreted in its precursor form. Numerous clinical studies as well as in vitro evidence suggest that cathepsin D plays an important role in malignant transformation and may be a useful prognostic indicator for breast cancer and possibly Alzheimer's disease.

Cellular localization

Lysosome. Melanosome. Note=Identified by mass spectrometry in melanosome fractions from stage I to stage IV.

Images



Functional Studies - Cathepsin D Inhibitior Screening Kit (ab126779)

Typical Pepstatin A Inhibition Profile of Cathepsin D Activity. The red line denotes an IC_{50} value of 0.067 nM. Results were analyzed by fluorescence plate reader according to the kit instructions.

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