Tribioscience

Cathepsins D, Enzyme Activity

Catalog	Unit
TBP0062-1MG	1 mg
TBP0062-5MG	5 mg

Product Details

Form: Freeze-dried powder

Solubility: Distilled water or dilute buffer

Stability: Store at -20° C (-4° F)

Activity: 120 U/mg protein

Protein: 40%

Unit Definition

If assayed as a proteinase, a unit of catheptic activity is defined as the amount of enzyme which causes an increase of 0.001 Unit extinction/minute of digestion of the substrate at 37°C.

If assayed as an amidase, a unit of amidase activity is defined as that amount of enzyme which produces a 1% hydrolysis of substrate Amide/minute at 37°C. This same unit definition is used if the esterase or hydrolase procedure are employed to assay cathepsin activity.

If assayed as a transferase, a unit of catheptic activity is defined as the amount of enzyme required to catalyze the formation of 1 mole of hydroxamic acid/minute at 37°C.

The pH optimum used in defining a unit of enzyme activity will be determined by the type of cathepsin being assayed.

Assay Method

As mentioned above, a number of methods have been employed for assaying cathepsin activity. The method of choice will be influenced by the type of cathepsin under investigation. The detailed procedures for assaying cathepsin activities by various methods have been described in Methods in Enzymology.

Applications

Cathepsin D (EC 3.4.23.5) has been found to be widely distributed in various tissues but spleen is a rich source of this enzyme. Cathepsins A and D work synergistically to hydrolyze protein substrates. The rabbit liver Cathepsin D has a molecular weight of approximately 58,000 and it can be stored at 4° at pH 3-4 or at pH 8 for days without loss of significant amount of its activity. Cathepsin D acts as a true proteinase on substrates such as denatured hemoglobin at the pH range of 2.8-3.0. In this respect it behaves enzymatically similar to pepsin.

For research use only