Tinzyme Co., Limited

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HeparinaseII

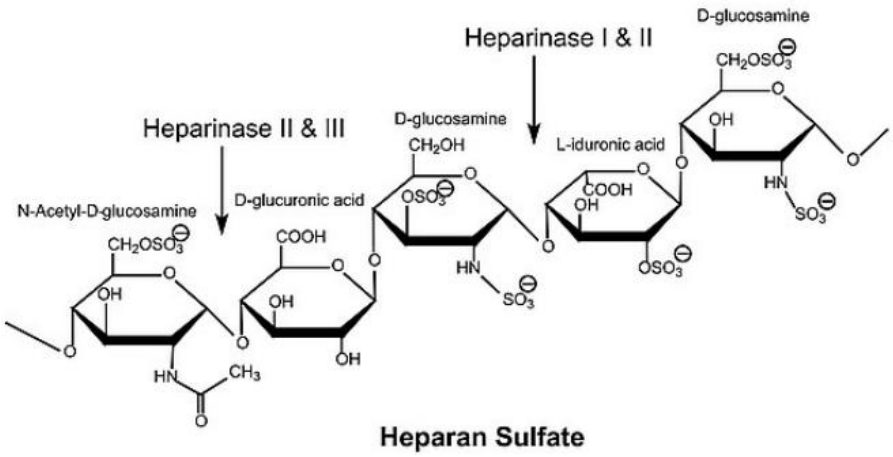
Product Number:HP1001

Shipping and Storage

Storage at -25℃~-10℃ (note: avoid freezing below -25℃; prolonged freezing may result in loss of active parts) Validity period: 12 months.

Description

Heparinases are a large class of polysaccharide lyases that can cleave structural analogues of heparin, such as heparin or heparin sulfate acetate. They are divided into three types based on substrate specificity: Heparinases I, Heparinases II, and Heparinases III. All three types of heparanases pass through β-Eliminating mechanisms acting on α(1-4) Glycoside bonds, producing oligosaccharides containing unsaturated uronic acid residues.Heparinase I acts on the glycosidic bonds of 2-3 sulfated disaccharides G1cNS (6S) - IdoUA (2S); The action site of heparanase III is the N-acetylated oligosaccharide region connected by GIcNS/NAC-G1cUA; Heparinase II has both heparanase I and heparanase III activities, which not only cleaves bonds adjacent to IdoA and G1cA, but also cleaves bonds adjacent to rare L-galactonic acid residues and rare disaccharides including $G1cNH_3$.



Heparinase I mainly acts on heparin, while Heparinase II can act on heparin and acetylated heparin sulfate. Heparinase III mainly acts on acetylated heparin (which can also act on heparin).

Heparinase II can degrade heparin and acetyl heparin sulfate, and is a tool for studying the structure, diagnosis, and industrial quality control of heparin. Heparinase II mainly cleaves heparin sulfate and heparin (with relative activity of approximately 2:1) at the 1-4 junction site between hexosamine and glucuronic acid residues (including glucuronic acid and iduronic acid). This cleavage process is completed by elimination reaction, producing oligosaccharides containing unsaturated glucuronic acid residues (double bonds located between C4 and C5). The degradation products can be detected by ultraviolet spectroscopy (232nm).Heparinase II has the broadest substrate specificity among the three types of heparanases and can be used for testing the 1,6-cyclization rate of enoxaparin sodium, analyzing the disaccharide spectrum of heparin sodium, and removing heparin for downstream analysis of genomic DNA.

Flavobacterium heparinum is currently the only source of commercial heparanase.

CAS number	149371-12-0
Source	Flavobacterium heparinum
Form	Solution (containing 50% glycerol)
Enzyme activity	4IU/ml
Purity	≥90%（SDS-PAGE）

Application

For Research Use Only

1. Analysis of heparin disaccharide and oligosaccharide spectra.
2. 1,6-Anhydride Ring Structure Test of Enoxaparin Sodium (Ring Formation Rate).
3. Degradation of heparin, preparation of heparin disaccharides and heparin oligosaccharides.
4. Neutralizing Heparin in Clinical Blood Samples.
5. Production of low-molecular-weight heparin.

Unit definition

One International Unit (IU) refers to the potency of producing 1μmol of 4,5-unsaturated uronic acid per minute at 30℃ and pH 7.6.

Protocol

The product of Heparanase II can be detected at a wavelength of 232nm using a UV visible spectrophotometer.

Recommended usage conditions

1. Optimum pH:7.6;Scope of application:4-9.
2. Optimum Temperature:30℃;Temperature applicable range:20 ~ 37℃.
3. Storage Buffer:20 mmol/L Tris-HCl (pH 8.0), 20 mmol/L NaCl,50% (v/v) Glycerol.
4. Using buffer solution:20 mmol/L Tris-HCl (pH 7.5), 100 mmol/LNaCl, 5mmol/L $CaCl_2$.