Heparinase II Research Grade

Part No	50-011	(0.5 IU/vial)
	50-011-001	(0.1 IU/vial)
	50-011-002	(Bulk)

Product Information

Synonyms	Heparitinase II, Heparin lyase II
Source	*Flavobacterium heparinum* (Recombinant)
EC Number	Not Assigned
CAS Number	149371-12-0
Purity	≥ 90 % by reverse-phase HPLC analysis
Product Format	Heparinase II is presented in a phosphate buffered saline pH 6.5 containing a disaccharide as cryoprotectant. Supplied as frozen solution. No bovine serum albumin (BSA), glycerol or preservatives added

Package Details & Catalytic Concentration

Part No	*Volume*	*Activity/vial*	*Catalytic conc.*
50-011	> 50 µL	≥ 0.5 IU	≥ 10 IU/mL
50-011-001	> 10 µL	≥ 0.1 IU	≥ 10 IU/mL
50-011-002*	Bulk	> 0.5 IU	≥ 10 IU/mL

** can be aliquoted from > 50 µL up to up to 900 mL per container as per customer's request.*

Storage and Shipping Information

Storage Temperature	-70 °C
Transport Condition	Product shipped on dry ice

Catalytic Reaction

The enzyme cleaves, via an elimination mechanism, sulfated polysaccharide chains containing 1-4 linkages between hexosamines & uronic acid residues (both iduronic & glucuronic acid residues). The reaction yields oligosaccharide products (mainly disaccharides) containing unsaturated uronic acids, which can be detected by UV spectroscopy at 232 nm. The enzyme also cleaves the antithrombin III binding pentasaccharide domain in the heparin molecule.

Substrate Specificity

The enzyme cleaves both heparin & heparan sulfate, with the heparan sulfate activity being about twice as high as the heparin activity.

Properties

- O-glycosylated at Thr-134
- Isoelectric point: 9.1 – 9.2
- Molecular weight: 85,765 Da
- Calcium is inhibitory

Activity

One International Unit (IU) is defined as the amount of enzyme that will liberate 1.0 µmole unsaturated oligosaccharides from porcine mucosal heparin or heparan sulfate per minute at 30°C & pH 7.3. (Activity depends on the assay temperature, the buffer, the source & the type of heparan sulfate used).

Activity Assay Parameters	*Range*	*Optimum*
pH	5.0 – 9.0	7.5 ± 0.1
Temperature	20 – 37°C	30 ± 0.5°C

Intended Use, Reference & Precaution

- These products are for ***in vitro*** **R&D use only** & not for therapeutic or other uses.
- Refer to the respective lot-specific certificate of analysis for the actual activity & the shelf life.
- Once thawed, aliquot as needed & freeze at -70°C to avoid multiple freeze-thaw cycles.

Applications

- Production of low- & ultra-low molecular weight heparins (LMWH & ULMWH).
- Characterization of heparin, heparan sulfate (HS) & LMWH,
- Structural & mass spectral analyses & characterization of heparin, HS, LMWH, heparosan & Heparin-like GAGs.
- Production & isolation of oligosaccharides with novel sequences of $GlcNH_3^+$ residues.
- Depolymerization of heparin & HS, chemically modified heparins & molecular weight profiling of heparins, HS & chemically modified heparins.
- In-process, quality control, & compendial testing of heparins, heparan sulfate (HS), heparin- & HS-derived products.
- Quantification of contaminants & process-related impurities in heparin such as over-sulfated chondroitin sulfate & persulfonated heparin.
- Glycobiology & cancer research.
- *In vitro* host-pathogen interactions in viral infections, virus plaque inhibition assays, virus-adhesion inhibition studies, cell culture experiments, etc.
- *In vitro* immunohistochemistry, immunocytochemistry & flow cytometry.
- Circumventing the inhibitory effects of heparin in the PCR reaction.

IBEX Pharmaceuticals Inc.
5485 Paré, Suite 100, Montréal, Québec, Canada, H4P 1P7
Tél : (514) 344-4004 Fax : (514) 344-8827 Website : www.IBEX.ca