

Chondroitinase B**Research Grade**

Cat. No. AMS.50-018

Synonyms

Chondroitin B eliminase

Source*Flavobacterium heparinum* (recombinant)**EC Number**

4.2.2.19

CAS Number

52227-83-5

Catalyzed Reaction

The enzyme cleaves, via an elimination mechanism, polysaccharide chains containing 1-4 linkages between hexosamines and iduronic acid residues in dermatan sulfate (chondroitin sulfate B). The reaction yields oligosaccharide products (mainly disaccharides) containing unsaturated uronic acids which can be detected by UV spectroscopy at 232 nm.

Substrate Specificity

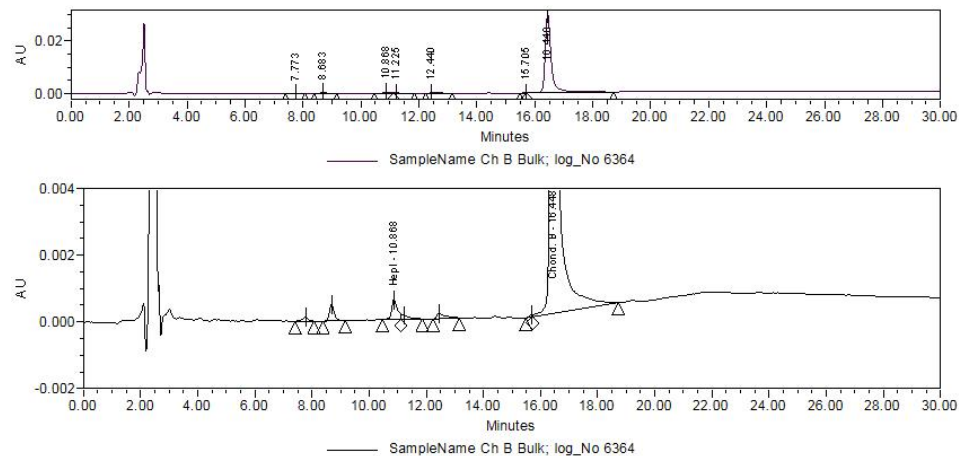
Dermatan sulfate (chondroitin sulfate B).

Properties

- Molecular weight: 54,779 Da
- Isoelectric point: 9.4 – 9.6
- pH optimum for activity: 7 – 8
- pH range for activity: 5 – 10
- Optimal temperature range: 20 °C – 37 °C
- Crystal structure has been determined and published (see references)

Purity

≥90 % by reversed phase HPLC analysis.

AMSBIO | www.amsbio.com | info@amsbio.com

UK & Rest of the World
184 Park Drive, Milton Park
Abingdon OX14 4SE, UK
T: +44 (0)1235 828 200
F: +44 (0) 1235 820 482



North America
1035 Cambridge Street,
Cambridge, MA 02141
T: +1 (617) 945-5033 or
T: +1 (800) 987-0985
F: +1 (617) 945-8218



Germany
Bockenheimer Landstr. 17/19
60325 Frankfurt/Main
T: +49 (0) 69 779099
F: +49 (0) 69 13376880



Switzerland
Centro Nord-Sud 2E
CH-6934 Bioggio-Lugano
T: +41(0) 91 604 55 22
F: +41(0) 91 605 17 85

Specific Activity

≥550 IU/mg (substrate: dermatan sulfate)

One international unit (IU) is defined as the amount of enzyme that will liberate 1.0 μmole unsaturated oligosaccharides from dermatan sulfate per minute at 30 °C and pH 8.0.

Stability

- PN 50-018 (vial of 5 μg) : Expiration is 30 months from manufacturing date frozen at -70 °C in aqueous buffers containing Sodium Chloride, Sodium Phosphate and Sucrose 5%.

Applications

- As research reagent (glycosaminoglycan degradation).
- For the preparation of di- and oligo- saccharides of dermatan sulfate.

Availability

A proprietary expression system for *F. heparinum* and the fermentation and isolation processes allow the production of large quantities of high purity product.

References

- Review: "Enzymatic Degradation of Glycosaminoglycans". S. Ernst et al. in Critical Reviews in Biochemistry and Molecular Biology (1995), 30(5): 387-444.
- "Isolation and Expression in *Escherichia coli* of *csIA* and *csIB*, Genes Coding for the Chondroitin Sulfate-Degrading Enzymes Chondroitinase AC and Chondroitinase B, Respectively, from *Flavobacterium heparinum*". A.L. Tkalec, D. Fink, F. Blain, G. Zhang-Sun, M. Laliberté, D.C. Bennett, K. Gu, J.J.F. Zimmermann and H. Su, in *Applied and Environmental Microbiology* (2000) 66(1): 29-35.
- "Purification, Characterization and Specificity of Chondroitin Lyases and Glycuronidase from *Flavobacterium heparinum*". K. Gu, R.J. Linhardt, M. Laliberté, K. Gu and J. Zimmermann, in *Biochem. J.* (1995) 312: 569-577.
- "A comparative Study Between a Chondroitinase B and a Chondroitinase AC from *Flavobacterium heparinum*". M.Y.M. Michelacci and D.C.P. Dietrich, in *Biochemical Journal* (1975) 151: 121-129.
- "Crystal Structure of Chondroitinase B from *Flavobacterium heparinum* and its Complex with a Disaccharide Product at 1.7 Å Resolution". W. Huang, A. Matte, Y. Li, Y.S. Kim, R.J. Linhardt, H. Su and M. Cygler, in *J. Mol. Biol.* (1999) 294: 1257-1269.

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T: +41(0) 91 604 55 22
F: +41(0) 91 605 17 85