

Product Information

Chondroitinase ABC from *Proteus vulgaris*

Lyophilized powder, 0.3-3 units/mg solid

C2905

Product Description

CAS Registry Number: 9024-13-9

Enzyme Commission (EC) Numbers:

- EC 4.2.2.20 (chondroitin-sulfate-ABC endolyase component)¹
- EC 4.2.2.21 (chondroitin-sulfate-ABC exolyase, component)¹

Synonym: Chondroitin ABC Lyase

pH optimum:²

- pH 8.0 (chondroitin sulfate)
- pH 6.8 (hyaluronic acid)

Temperature optimum:² 37 °CActivator:³ 0.05 M acetateInhibitor:³ 1 mM Zn²⁺

Chondroitinase ABC catalyzes the eliminative degradation of polysaccharides that contain (1→4)-β-D-hexosaminy and (1→3)-β-D-glucuronosyl or (1→3)-α-L-iduronosyl linkages to disaccharides containing 4-deoxy-β-D-gluc-4-enuronosyl groups. Chondroitinase ABC acts on chondroitin 4-sulfate, chondroitin 6-sulfate, and dermatan sulfate, and acts slowly on hyaluronate.⁴ Initial rates of degradation of chondroitin sulfate B, chondroitin, and hyaluronic acid were, respectively, 40%, 20%, and 2% those observed with chondroitin sulfate A and chondroitin sulfate C.²

The molecular mass of Chondroitinase ABC is ~120 kDa, as analyzed by gel filtration and sucrose gradient ultracentrifugation.²⁻⁴ SDS-PAGE indicates two non-identical subunits with molecular masses of ~86 kDa and ~32 kDa.^{3,5}

This product is purified from *Proteus vulgaris*. Several theses^{6,7} and dissertations⁸⁻¹⁸ have cited use of product C2905 in their protocols.

Reagent

The product is supplied as a lyophilized powder with 25-45% protein. Of the protein, the major component (~90% of the protein) is BSA (as a stabilizer). The balance of the overall powder (~65%) is Trizma® buffer salts.

Specific Activity: 0.3-3 units/mg protein (using chondroitin sulfate C as substrate)

Unit definition: One unit will liberate 1.0 μmole of a mixture of 2-acetamido-2-deoxy-3-O-(β-D-gluc-4-ene-pyranosyluronic acid)-4-O-sulfo-D-galactose and 1.0 μmole of 2-acetamido-2-deoxy-3-O-(β-D-gluc-4-ene-pyranosyluronic acid)-6-O-sulfo-D-galactose from chondroitin sulfate from shark cartilage, per minute at pH 8.0 at 37 °C.

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Reconstitute in a 0.01% BSA aqueous solution. Further dilutions can be made into a buffer containing 50 mM Trizma® HCl, pH 8.0, with 60 mM sodium acetate and 0.02% BSA. Prepare solutions just prior to use. While we have not tested solution stability of this reagent, one publication reports storage of stock solutions of this product (2.5 units/mL, 4 units/mL), prepared in 20 mM HEPES-HBSS buffer, at -20 °C.¹⁹

Storage/Stability

Store the product desiccated at -20 °C and it is expected to remain active for at least 3 years.

References

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