

Product Information

Chondroitinase ABC

from *Proteus vulgaris***C3667**

Product Description

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. It acts on chondroitin 4-sulfate, chondroitin 6-sulfate, and dermatan sulfate, and acts slowly on hyaluronate.² Initial rates of degradation of chondroitin sulfate B, chondroitin, and hyaluronic acid were, respectively, 40%, 20%, and 2% those of chondroitin sulfate A and chondroitin sulfate C.³

Molecular mass:³⁻⁵ ~120 kDa (gel filtration and sucrose gradient ultracentrifugation)

SDS-PAGE indicates two non-identical subunits with molecular masses of 86 kDa and 32 kDa.^{4,5}

pH optimum:³

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

Temperature optimum:³ 37 °C

Activator:⁴ 0.05 M acetate

Inhibitor:⁴ 1 mM Zn²⁺

This essentially protease-free, lyophilized product is affinity-purified from *Proteus vulgaris*. It contains ~10% protein with potassium phosphate buffer salts and stabilizer. The preparation is free of BSA.

Specific Activity: 50–250 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 min 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. Subsequent 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.

Storage/Stability

Storage at –20 °C of 20 U/mL stock solutions of this product, in PBS with 1% BSA have been reported.⁵ However, we have not tested this ourselves.

References

1. Past EC numbers include 4.2.2.4 and 4.2.99.6.
2. Enzyme Nomenclature, Academic Press (San Diego, CA:1992), p. 425.
3. Yamagata, T. et al., J. Biol. Chem., 243(7), 1523-1535 (1968).
4. Martinez, J.B. et al., J. Biol. Chem., 234(9), 2236-2239 (1959).
5. Sato, N. et al., Agr. Biol. Chem., 50(4), 1057-1059 (1986).

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6. Krupkova, O. et al., Int. J. Mol. Sci., 17(10), E1640 (2016).

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