Product Information

Chondroitinase ABC

from Proteus vulgaris

C3667

Product Description

Chondroitinase ABC catalyzes the eliminative degradation of polysaccharides that contain (1→4)-β-D-hexosaminyl 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 Zn^{2+}

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).

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

Notice

We provide information and advice to our customers on application technologies and regulatory matters to the best of our knowledge and ability, but without obligation or liability. Existing laws and regulations are to be observed in all cases by our customers. This also applies in respect to any rights of third parties. Our information and advice do not relieve our customers of their own responsibility for checking the suitability of our products for the envisaged purpose.

The information in this document is subject to change without notice and should not be construed as a commitment by the manufacturing or selling entity, or an affiliate. We assume no responsibility for any errors that may appear in this document.

Technical Assistance

Visit the tech service page at SigmaAldrich.com/techservice.

Standard Warranty

The applicable warranty for the products listed in this publication may be found at SigmaAldrich.com/terms.

Contact Information

For the location of the office nearest you, go to SigmaAldrich.com/offices.