Creative Enzymes®

Chondroitinase AC from Flavobacterium heparinum, Recombinant

Cat. No. NATE-1738

Lot. No. (See product label)

Introduction

Description Chondroitinase AC from Flavobacteriun heparinum is an eliminase that degrades chondroitin sulfates A and C, but not chondroitin sulfate B. The enzyme cleaves, via an elimination mechanism, both sulfated and non-sulfated polysaccharide chains that contain (1→4)-linkages between hexosamines and glucuronic acid residues. The reaction yields oligosaccharide products, mainly disaccharides, with unsaturated uronic acids that can be detected by UV spectroscopy at 232 nm.

Applications Chondroitinase AC was shown to inhibit melanoma invasion and proliferation, endothelial proliferation, and angiogenesis. Chondroitinase AC, but not chondroitinase B, has also been shown to induce apoptosis of melanoma and endothelial cells, as measured by the activity of caspase-3.

Synonyms chondroitinase (ambiguous); chondroitin sulfate lyase; chondroitin AC eliminase; chondroitinase AC; ChnAC; EC 4.2.2.5

Product Information

Species Flavobacterium heparinum

Source E. coli

Appearance Powder

Form The enzyme is supplied as a lyophilized powder containing potassium phosphate, NaCl, and a stabilizer.

EC Number EC 4.2.2.5

CAS No. 9047-57-8

Purity ≥90% (SDS-PAGE) The product is essentially free of heparinase, sulfatase, heparitinase, glucuronidase, and protease activities.

Activity >200 units/mg protein

Unit Definition 1 unit is defined as the amount of enzyme that will liberate 1.0 µmole per minute of unsaturated disaccharides from chondroitin sulfate A at pH 6.7 at 37ºC, as measured by the change in A232. The εmM for the reaction product Δ-Di-4S (chondroitin sulfates A and B) is 5.1 and 5.5 for Δ-Di-6S (chondroitin sulfate C). The optimal pH for the assay at 37ºC is pH 6.7 and the optimal chondroitin sulfate concentration in the reaction is 1 mg/mL. The activity also depends on the salt concentration and is maximal at >150 mM NaCl. The relative activity of the enzyme with chondroitin sulfates A, C, and B is 1.0, 0.6, and 0.03, respectively. Residual activity observed with chondroitin sulfate B may be due to small impurities in the substrate used for the assay.

Usage and Packaging

Preparation Instructions Reconstitute the contents of the vial with 100µL of water to give a solution containing ~25 mM potassium phosphate, pH 6.5, 150 mM NaCl, and a stabilizer.

Storage and Shipping Information

Storage Store the product at –20°C. When stored properly and unopened at –20°C, the enzyme has a

Storage	Store the product at –20 °C. When stored properly and unopened at –20 °C, the enzyme has a recommended retest date of 2 years. After reconstitution, the product may be kept at 4℃ for 4 days, but it is recommended to store the solution in working aliquots at –20 ℃.