



ENZYME

For research use only, Not for diagnostic use.

**Catalog No. UOM001****Chondroitinase ABC endo enzyme (*E.coli*)**

CAS RN 9024-13-9

EC 4.2.2.20 (Formerly EC 4.2.2.4)

**Background :**

Chondroitinase ABC (ChABC), an enzyme isolated and purified from *Proteus vulgaris*, a gram-negative bacillus, has the ability to degrade glycosaminoglycans such as chondroitin sulfate proteoglycans (CSPG). ChABC has been shown to degrade and inactivate CSPG in *in vivo*, and administration of the enzyme at the site of spinal cord injury accelerates recovery in many models. CSPG is known as a glycoprotein which constitutes connective tissue such as cartilage, and it shoulders the inhibitory role in nerve regeneration in the nervous system. Therefore the significance of the enzyme as a tool for studying especially in the field of neuroscience is increasing.

**Product Description :**

The product was purified from BL21AI *E.coli* culture, expression induced by IPTG & L-arabinose. Cells were lysed by passing through a pressure chamber in a buffer containing EDTA-free protease inhibitors. Lysate was loaded onto a 1-ml nickel-sepharose resin column in the presence of 20mM imidazole and eluted with an increasing imidazole concentration gradient in 50mM Tris-HCl + 0.5M NaCl at pH8.0. Eluted enzyme was buffer-exchanged through Sephadex G25 resin into 50mM Tris-HCl + 50mM NaCl (pH 8.0). An equal volume of glycerol was added (50% final conc.) before storing enzyme solution at -20°C.

**Molecular mass (ref 1, 2):** 120 ~ 145 kDa (gel filtration and sucrose gradient ultracentrifugation)

SDS-PAGE yielded 1 non-identical subunit with molecular masse of c.a. 115 kDa.

**pH Optimum (ref 1):** pH 8.0 (chondroitin sulfate), pH 6.8 (hyaluronic acid)**Temperature optimum (ref 1):** 37 °C**Activator (ref 2):** 0.05 M acetate**Inhibitor (ref 2):** 1 mM Zn<sup>2+</sup>

**Specific Activity:** 350mU per ml. (Activity was measured by determination of unsaturated disaccharide released from sodium chondroitin sulfate C (CSC) [Cosmo Bio Co., Ltd. CSR-NaCS-C2(ShC)3] according to the method of Morgan-Elson with N-acethyl-D-galactosamine (GalNAc) [Fuji Film Wako 019-12823] as a standard.).

**Unit definition:** One unit is defined as the amount of enzyme required to release of 1.0umole of unsaturated disaccharide from CSC per minute at pH 8.0, 37°C.

**Other activity:** essentially protease free**Precautions and Disclaimer:** This product is for Research Use Only (RUO), not for drug, household, or other uses.**Storage/Stability:** Store the product at -20 °C (DO NOT FREEZE THE ENZYME).

**References:**

1. Yamagata, T., et al., J. Biol. Chem., 243, 1523-1535 (1968).
2. Martinez, J.B., et al., J. Biol. Chem., 234, 2236 (1959).
3. Saito, H., et al., J. Biol. Chem., 243, 1536-1542 (1968).
4. Suzuki, S., et al., J. Biol. Chem., 243, 1543 (1968).
5. Oike, Y., et al., J. Biol. Chem., 257, 9751 (1982).

*For research use only, Not for diagnostic use.*



**COSMO BIO Co., LTD.**

**【JAPAN】**

TOYO EKIMAE BLDG. 2-20, TOYO 2-CHOME,  
KOTO-KU. TOKYO 135-0016, JAPAN  
Phone: +81-3-5632-9610  
FAX: +81-3-5632-9619  
URL: <https://www.cosmobio.co.jp/>



**COSMO BIO USA**

**【Outside Japan】**

2792 Loker Ave West, Suite 101  
Carlsbad, CA 92010, USA  
email: [info@cosmobioussa.com](mailto:info@cosmobioussa.com)  
Phone/FAX: (+1) 760-431-4600  
URL: [www.cosmobioussa.com](http://www.cosmobioussa.com)