

## Glucuronyl esterase 15A, *Caldicellulosiruptor kristjanssonii*

### CkGe15A (CE15)

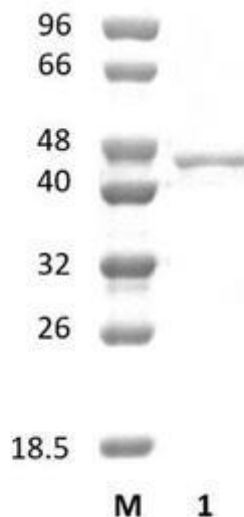
Catalogue number	Presentation
CZ05781	0.5 mg
CZ05782	3 x 0.5 mg

#### Description

Glucuronyl esterase 15A (CkGe15A), assigned the E.C. number 3.1.1.- is a derivative of *Caldicellulosiruptor kristjanssonii*. It catalyzes the hydrolysis of ester bonds, specifically those linking 4-O-methyl-D-glucuronic acid residues of glucuronoxylans and aromatic alcohols of lignin. The recombinant CkGe15A, purified from *Escherichia coli*, is a single-domain Carbohydrate Esterase family 15 (CE15) enzyme (see more details at [www.cazy.org](http://www.cazy.org)). The protein is supplied in a solution containing 35 mM NaHepes buffer (pH 7.5), 750 mM NaCl, 200 mM Imidazole, 3.5 mM CaCl<sub>2</sub>, and 25% (v/v) glycerol, at a concentration of 0.5 mg/mL. Bulk quantities of this product can be made available upon request. To place an order, simply visit our website. We offer fast and secure shipping worldwide.

#### Electrophoretic Purity

The molecular integrity and purity of CkGe15A (CE15) were evaluated using sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE), followed by BlueSafe staining (MB15201) (Figure 1).



**Figure 1.** SDS-PAGE analysis of CkGe15A (CE15) was conducted in (Lane 1), employing a 14% polyacrylamide gel. The enzyme exhibits a band corresponding to a molecular weight of approximately 47,96 kDa. Lane M contains a Protein Marker for reference.

#### Storage temperature

The protein should be stored at -30°C to -15°C in a constant temperature freezer. The protein will remain stable till the expiry date if stored as specified.

#### Substrate specificity

CkGe15A (CE15) catalyzes the hydrolysis of ester bonds, specifically those linking 4-O-methyl-D-glucuronic acid residues of glucuronoxylans and aromatic alcohols of lignin.

## Temperature and pH optima

The enzyme exhibits optimal activity within a pH range of 6.0-8.0 and at a temperature of 30-37°C. Maximal enzymatic activity is achieved at pH 6 and a consistent temperature of 30°C.

## Specific activity

The specific activity of *CkGe15A* (CE15) against benzyl D-glucuronate is determined to be 0,36 U/mg of purified protein. The glucuronyl esterase activity of *CkGe15A* (CE15) was evaluated using NZYTech's UV-based kit, specifically designed for the detection of D-glucuronic acid and D-galacturonic acid (D-Glucuronic acid and D-Galacturonic acid detection kit – AK00221, NZYTech). The assay involved a 30-minute incubation with 2 mM Benzyl D-glucuronate (Carbosynth) under standardized conditions (37 °C in a 0.1 M sodium phosphate buffer, pH 6.0). The protocol was executed according to the manufacturer's guidelines. Notably, one unit of enzyme activity (1 U) is defined as the quantity of enzyme necessary to catalyze the release of 1 μmol of D-Glucuronic acid per minute, in accordance with the manufacturer's instructions.

## Reference

Krska *et al.* (2021) *Biochemistry*. 60(27):2206-2220.

## Customer Support

Our dedicated customer support team is always ready to assist you with any questions or technical issues you may have. Reach us via email at [info@nzytech.com](mailto:info@nzytech.com).

## Quality control assay

Protein purity is determined to be ≥90%, as assessed by SDS-PAGE and subsequent BlueSafe staining (MB15201).

For life science research only. Not for use in diagnostic procedures.

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