Additional file

Characterization of acidic endoglucanase Cel12A from *Gloeophyllum trabeum* and its synergistic effects on hydrogen peroxide-acetic acid (HPAC)-pretreated lignocellulose

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Chi Hoon Oh[1], Chan Song Park[1], Yoon Gyo Lee[2], Younho Song[2], Hyeun-Jong Bae[1, 2*]

[1] Department of Bioenergy Science and Technology, Chonnam National University, Gwangju 61186, Republic of Korea

[2] Bio-Energy Research Center, Chonnam National University, Gwangju 61186, Republic of Korea

* Corresponding author: baehj@chonnam.ac.kr

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Additional file 1: Figure S1. Multiple alignment of *Gloeophyllum trabeum* Cel12A amino acid sequences.

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Additional file 1: Table S1. Specific activity of recombinant *Gt*Cel12A on various substrates.

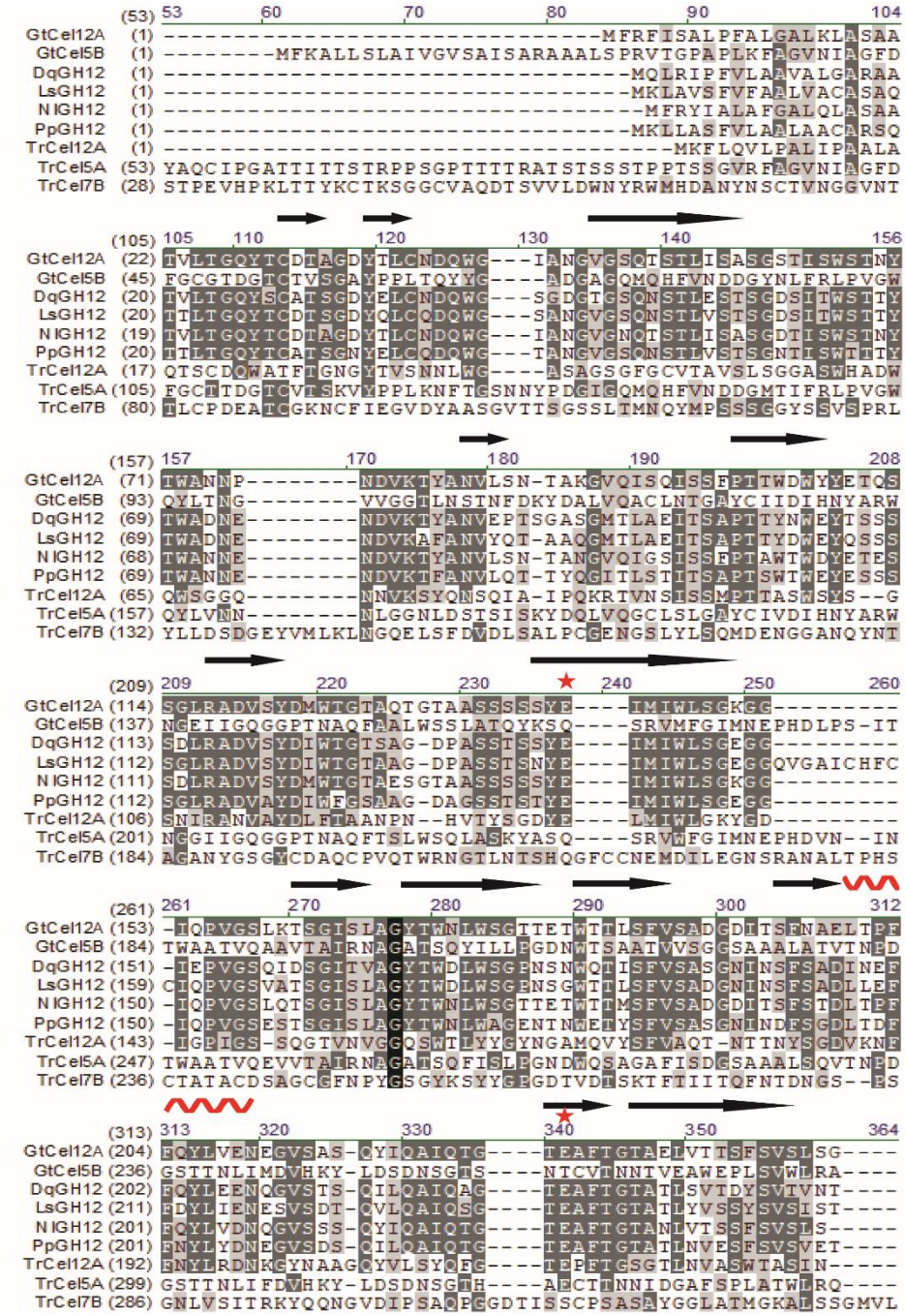
Substrate	Specific activity ($U \cdot mg^{-1}$) [a]
CMC	1,129 ± 16.3
β-glucan	6,546 ± 33.5
Xyloglucan	10.1 ± 0.03
Filter paper	0.21 ± 0.001
Avicel	ND[b]
Xylan	ND
Soluble starch	ND
Locust bean gum	ND
Carrageenan	ND

CMC: carboxymethyl cellulose

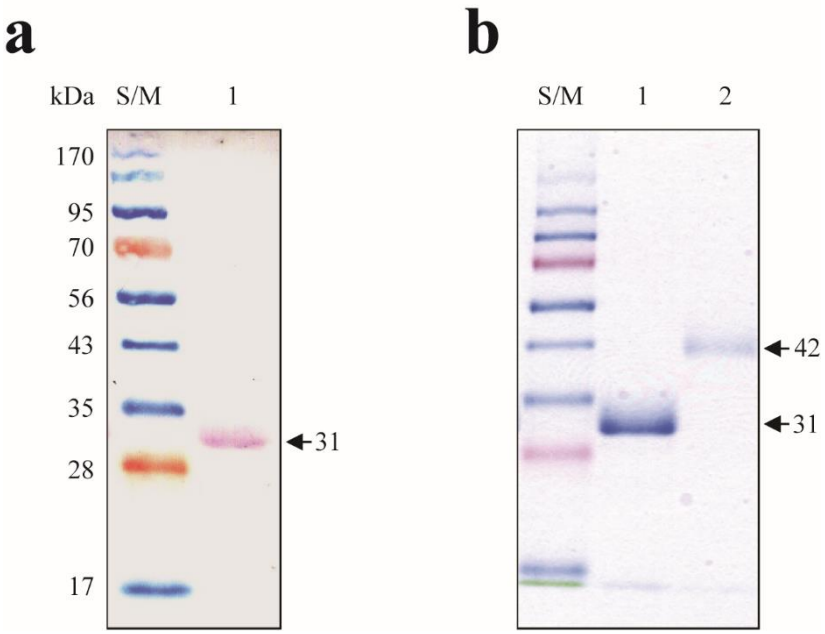
Specific activities were determined by measuring the reducing sugars using the dinitrosalicylic acid (DNS) reagent in triplicate.

[a]Specific activity indicates enzyme activity per mg of protein.

[b]ND indicates no detection.



Additional file 1: Figure S1. Multiple alignment of *Gloeophyllum trabeum* Cel12A amino acid sequences. Alignment of *Gt*Cel12A with *Gloeophyllum trabeum* Cel5B, *Daedalea quercina* GH12, *Laetiporus sulphureus* GH12, *Neolentinus lepideus* GH12, *Postia placenta* GH12, *Trichoderma reesei* Cel12A, Cel5A, and Cel7B. Identical regions are indicated by black background. Conserved and similar regions are indicated in dark and light gray, respectively. A arrows, helices, and stars indicate β-sheet regions, α-helix regions, and deduced catalytic residues (E122 and E207), respectively.



Additional file 1: Figure S2. Western blot analysis and sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE) of *Gt*Cel12A. (a) The purified enzyme was detected by western blot assay with a mouse anti-His tag. (b) Purified recombinant *Gt*Cel12A from *Pichia pastoris* was loaded on a 12% (w/v) SDS-PAGE gel and stained with Coomassie blue. Lane S/M: molecular weight size marker, lane 1: purified recombinant *Gt*Cel12A, lane 2: purified recombinant *Gt*Cel5B.