

1 Supporting information

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3 **Surface-charged β -glucosidase synergizes cellulase for cellulose affinity in ionic liquid**
4 **pretreated biomass *in situ* saccharification**

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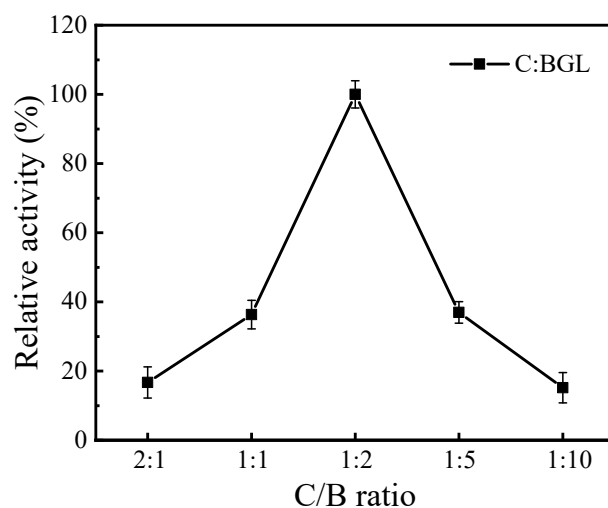
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15 **Fig. S1.** The relative enzyme activity of the co-enzyme catalyzing the microcrystalline cellulose
 16 (MCC) at cellulase/wild-type BGL (C:WT) ratios of 2:1, 1:1, 1:2, 1:5, and 1:10, respectively after
 17 incubation for 1 h at 50°C and 200 rpm. The addition of BGL will further hydrolyze away the
 18 accumulated cellobiose in the enzymatic pathway and attenuate the negative feedback inhibition. But
 19 as the proportion of cellulase in the synergistic system becomes lower, the upstream ability to
 20 gradually decompose cellulose chains into cellobiose becomes weaker. Therefore, the optimal ratio
 21 of C:BGL in the subsequent synergistic enzymatic system was determined to be 1:2.