

**Fig. S3.** Glucose release from microcrystalline cellulose and carboxymethyl cellulose by three recombinant enzymes that represent genes sampled from the *R. flavipes* host gut transcriptome. **(A)** Microcrystalline cellulose is highly insoluble and is a dominant natural form of lignocellulose; whereas **(B)** carboxymethyl cellulose is a chemically modified, highly soluble, synthetic version of cellulose. The three recombinant enzymes tested were the Cell-1 endoglucanase (1), the β-glu beta-glucosidase (2), and the LacA laccase (3) (see text and Fig. 3 for details). Each enzyme was tested alone and in two- and three-way combinations. As shown in (A), >10-fold synergy in glucose release occurred when combining Cell-1 and β-glu, but output was reduced in the presence of LacA. As shown in (B), much higher activity for individual enzymes was observed with no evidence suggesting synergy (contrast against A and Fig. 1). Bars within graphs with the same letters are not significantly different by Tukey’s HSD test (*p*<0.05). Whole-model ANOVA results indicating significance are shown.