Tuning cellulase activity using carbohydrate binding modules

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Project Goals:

Current commercial cellulases have not been optimized to saccharify biomass pretreated with ionic liquids. To address this, we have employed a modular approach to rapidly prototype and engineer highly robust cellulases by fusing thermophillic carbohydrate-binding modules (CBMs) to catalytic domains (CD). We demonstrate that the addition of CBMs enhances enzymatic activity compared to the catalytic domain alone at high temperatures when assayed on a model energy crop, switchgrass.

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