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Production of a universal plant-based substrate system for cellulase activity assays

Cellulases and other cell wall degrading enzymes are currently being engineered with improved traits for application in the breakdown of lignocellulosic biomass. The majority of assays with these 'designer' enzymes have been carried out using synthetic substrates such as crystalline bacterial micro cellulose (BMCC). The use of synthetic substrates may not reflect the actual action of these cellulases on real plants. In the following study, suspension cell walls from several plant species were examined as possible alternatives for synthetic cellulose substrates. The results suggest that isolated plant cell walls can be used to reproducibly assay for cellulase activity.

Biography

Kathleen Hefferon has completed her PhD from the University of Toronto and postdoctoral studies from the Department of Food Sciences, Cornell University. She is the Fulbright Canada Research Chair of Global Food Security. She is currently on Faculty at Cornell University and is writing a second edition to her book "Biopharmaceuticals in Plants". She has published in multiple research journals and has edited 6 books. She just completed as editor of an Encyclopedia on Food Security and Sustainability. .

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