

Additives for cellulase enhancement

ABSTRACT

Cellulases have been vital for the saccharification of lignocellulosic biomass into reduced sugars to produce biofuels and other essential biochemicals. However, the sugar yields achievable for canonical cellulases (i.e. endoglucanases, exoglucanases and β -glucosidases) have not been convincing in support of the highly acclaimed prospects and end-uses heralded. The persistent pursuit of the biochemical industry to obtain high quantities of useful chemicals from lignocellulosic biomass has resulted in the supplementation of cellulose-degrading enzymes with other biological complementation. Also, chemical additives (e.g. salts, surfactants and chelating agents) have been employed to enhance the stability and improve the binding and overall functionality of cellulases to increase product titre. Herein, we report the roadmap of cellulase-additive supplementations and the associated yield performances.