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Enhanced enzymatic hydrolysis by adding long-chain fatty alcohols using film as a structure model

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Highlights

Effects of LFAs on enzymatic hydrolysis were investigated by biomimetic films.

The cellulose digestibility of lignin-cellulose film increased from 53.9% to 66.2%.

LFAs improved digestibility of cellulose film from 65.1% to 77.9%.

LFAs reduced the invalid adsorption of cellulase.

Abstract

Many positive effects of additives on enzymatic hydrolysis of lignocellulosic materials have been investigated, but limited information has been reported on the use of long-chain fatty alcohols (LFAs) for enzymatic hydrolysis by biospired models. In this study, effects of LFAs on enzymatic hydrolysis were evaluated using biomimetic film as a structure model. LFAs clearly improved the digestibility of cellulose film from 65.1% to 77.9%, which was higher than that the digestibility of lignin-cellulose film from 53.9% to 66.2%. Further study indicated that the promotion ascribed to the effect of LFAs, which might provide more active points of chemical reaction and keep the stability of

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