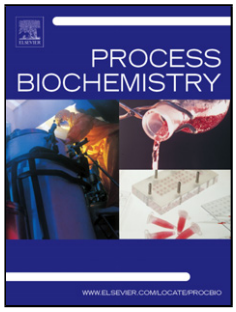

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Author: Sandrine Alfenore Carole Molina-Jouve

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Current status and future prospects of conversion of lignocellulosic resources to biofuels using yeasts and bacteria

Sandrine Alfenore[1,2,3] and Carole Molina-Jouve[1,2,3]

[1]Université de Toulouse; INSA, UPS, INP; LISBP, 135 Avenue de Rangueil, F-31077 Toulouse, France
[2]INRA, UMR792, Ingénierie des Systèmes Biologiques et des Procédés, F-31400 Toulouse, France
[3]CNRS, UMR5504, F-31400 Toulouse, France

Corresponding author:
Sandrine Alfenore
Université de Toulouse; INSA, UPS, INP; LISBP, 135 Avenue de Rangueil
F-31077 Toulouse
France
Tel.: +33 (0)5 61 55 97 59
E-mail: alfenore@insa-toulouse.fr

Highlights

- Lignocellulose pretreatments to produce liquid carbon sources or syngas suitable for use as microbial biofuels are compared.
- Recent advances in biofuel production from lignocellulosic substrates are reported.
- New engineered strains and innovative integrated bioprocesses for biofuel production (ethanol, lipids as biofuel precursor, and hydrogen) are described

Abstract

Generating bioenergy is a significant challenge in reducing the environmental impact of fossil fuel combustion and in sustaining energy and energy independence. This study focuses on the production of biofuel from lignocellulosic resources by the action of yeast or bacteria, whereas algae are excluded as a source of biofuels. Ethanol, lipids (as precursors to biodiesel and biojet fuel), and hydrogen are considered in this study. Different pretreatments for converting lignocellulose into liquid and gaseous carbon sources for the microbial production