

# Integrated approaches to customize fungal cell factories

December 19 2013

---



©2013, Mary Ann Liebert, Inc., publishers

The natural ability of certain fungi to break down complex substances makes them very valuable microorganisms to use as cell factories in industrial processes. Advances in metabolic engineering and systems biology are helping to customize and optimize these fungi to produce

specific bioproducts, as described in a Review article in *Industrial Biotechnology*.

In the Review "[Integrated Approaches for Assessment of Cellular Performance in Industrially Relevant Filamentous Fungi](#)," Mhairi Workman, Mikael Anderson, and Jette Thykaer, Technical University of Denmark, Lyngby, focus on how to apply state-of-the-art analytical tools and technologies to characterize industrially relevant fungi, improve fungal cell factories, and "utilize fungal bioproduct diversity to its full potential."

The Review is part of an IB IN DEPTH special section on Fungal Biology led by Guest Editors Scott Baker, PhD, Pacific Northwest National Laboratory (PNNL), Richland, WA, and Adrian Tsang, PhD, Concordia University, Montreal, Canada. Additional Original Research articles include "[Kinetic Modeling of  \$\beta\$ -Glucosidases and Cellobiohydrolases Involved in Enzymatic Hydrolysis of Cellulose](#)," by Marie Chauve, PhD, et al. from IFP Energies nouvelles (Solaize and Rueil-Malmaison, France), European Synchrotron Radiation Facility and Centre de Recherches sur les Macromolécules Végétales (Grenoble, France); and "[Comparative Genomics Analysis of \*Trichoderma reesei\* Strains](#)," by Hideaki Koike, PhD, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan, and colleagues from the US Department of Energy (DOE) Joint Genome Institute (Walnut Creek, CA), and PNNL.

Also included in the Fungal Biology special section are two IB Interviews: with Randy Berka of Novozymes (Davis, CA); and Igor Grigoriev, PhD, US DOE Joint Genome Institute.

"Once again, one of IB's Editorial Board members has stepped forward to tell a compelling story of [industrial biotechnology](#) development," says Co-Editor-in-Chief Larry Walker, PhD, Professor, Biological &

Environmental Engineering, Cornell University, Ithaca, NY. "The opportunities to exploit fungal biotechnology for industrial chemicals and energy are unlimited."

**More information:** The article is available on the *Industrial Biotechnology* [website](#).

Provided by Mary Ann Liebert, Inc

Citation: Integrated approaches to customize fungal cell factories (2013, December 19) retrieved 26 April 2024 from <https://phys.org/news/2013-12-approaches-customize-fungal-cell-factories.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.