

Bioprospecting study finds biosurfactantproducing microbes target biodiversity in Latin America

March 9 2016



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The natural biodiversity in Latin America has made it a hotspot for research and applications of biosurfactants, with Brazil leading the way in intellectual property and patents for novel processes and sustainable production methods to manufacture biosurfactants at low cost from agro-industrial waste. A review of bioprospecting studies to identify biosurfactant-producing microorganisms, the renewable substrates used in fermentation processes, and the range of biosurfactant applications being developed across Latin America is presented in an article in *Industrial Biotechnology*.

Larissa Pereira Brumano, Matheus Francisco Soler, and Silvio Silvério da Silva, University of São Paulo, Lorena, Brazil, describe the growing interest in and applications for replacing synthetic surfactants with biosurfactants synthesized by microorganisms. In the article "Recent Advances in Sustainable Production and Application of Biosurfactants in Brazil and Latin America," the authors describe the advantages of biosurfactants compared to their chemical counterparts, including their higher biodegradability and lower toxicity. They note, however, that new strategies and technologies are needed to reduce the cost of large-scale biosurfactant production to make it economically competitive, and they review some of the key advances being achieved by scientists in Latin America, including in green chemistry and genetic engineering of microorganisms.

The article is part of an IB IN DEPTH special issue on "*Industrial Biotechnology* in Brazil: Innovation, Opportunities, and Challenges," led by Guest Editor Pabulo Henrique Rampelotto, PhD, Federal University of Rio Grande do Sul, Porto Alegre, Brazil, and member of the *Industrial Biotechnology* Editorial Board. Other articles in the issue include: "Second-Generation Ethanol: The Need Is Becoming a Reality"; "The Virtual Sugarcane Biorefinery—A Simulation Tool to Support Public



Policies Formulation in Bioenergy"; "Brazilian Biofuels Policies, Production Trends, and Challenges"; "The Brazilian Life Sciences Industry: Advances and Challenges"; and "Patent Policies and Intellectual Property Challenges in Brazil."

"Bioprospecting for new industrial microorganisms with unique metabolic pathways that can be driven to produce novel biochemicals is an important element of *Industrial Biotechnology*," says Co-Editor-in-Chief Larry Walker, PhD. "We thank our Brazilian colleagues for providing us with this insightful study."

More information: Larissa Pereira Brumano et al. Recent Advances in Sustainable Production and Application of Biosurfactants in Brazil and Latin America, *Industrial Biotechnology* (2016). <u>DOI:</u> <u>10.1089/ind.2015.0027</u>

Provided by Mary Ann Liebert, Inc

Citation: Bioprospecting study finds biosurfactant-producing microbes target biodiversity in Latin America (2016, March 9) retrieved 28 April 2024 from https://phys.org/news/2016-03-bioprospecting-biosurfactant-producing-microbes-biodiversitylatin.html

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