

Biodiversity of plant cell culture collections offers valuable source of natural insecticidal and fungicidal products

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Credit: Mary Ann Liebert, Inc., publishers

Screening large cell culture collections containing plant samples obtained from diverse geographic regions, climates, and soil and growing conditions for biological activity can reveal a wealth of natural

compounds with potential applications for crop improvement and protection. The capability to do reproducible screening and genomic analysis of the more than 2,000 plant cell lines maintained in culture at the Institute of Cell Biology and Genetic Engineering, in Kiev, Ukraine is describe in an article in *Industrial Biotechnology*.

In the article "[Screening Plant Biodiversity In Vitro for New Natural Products](#)," Prof. Nikolay V. Kuchuk and coauthors from the Institute of Cell Biology and Genetic Engineering and Zabolotny Institute of Microbiology and Virology, National Academy of Sciences of Ukraine, Kiev; Komarov Botanical Institute, Russian Academy of Sciences; Lawrence Berkeley National Laboratory, Berkeley, CA; and Hunter-Cevera & Associates, Ellicott City, MD, provide a detailed description of their methods for plant cell culture and the development of plant extracts for screening. The authors present the results of large-scale screening for insecticidal and fungicidal activity in 1,200 plant samples.

The article is part of the IB IN DEPTH special section entitled "Plants and Microorganisms: Moving Food and Agricultural Biotechnology Forward," led by Guest Editor Jennie Hunter-Cevera, PhD, Hunter-Cevera & Associates.

This issue of IB also features an Overview entitled "[Exploring Plant-Microorganism Relationships for Natural Solutions to Sustainable Agriculture and Food Production](#)," the Roundtable Discussion "Opportunities and Challenges for Plant Natural Product Research and Development," the Patent Update "Intellectual Property of Plants and Plant Products: Is Fruit Juice Eligible for Patent Protection?" and two Review articles: "Potential for Industrial Application of Microbes in Symbioses that Influence Plant Productivity and Sustainability in Agricultural, Natural, or Restored Ecosystems" and "Delayed Ripening of Climacteric Fruit by Catalysts Prepared from Induced Cells of *Rhodococcus rhodochrous* DAP 96253—A Case for the Biological

Modulation of Yang-Cycle Driven Processes by a Prokaryote."

"Leveraging the genetic diversity of the plant world is an important activity for agricultural, environmental, and [industrial biotechnology](#) sectors and is key to addressing a spectrum of global sustainability challenges," says Co-Editor-in-Chief Larry Walker, PhD, Professor, Biological & Environmental Engineering, Cornell University, Ithaca, NY.

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

Provided by Mary Ann Liebert, Inc

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