



Plant metabolomics: Opportunities and challenges for biologists and natural product chemists

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Metabolomics, which aims at the comprehensive and quantitative analysis of wide arrays of metabolites in biological samples, is playing an increasingly important role in plant science and systems biology. It involves the use of state-of-the-art analytical methods for biological matrix fingerprinting and profiling, chemometrics, and sensitive spectroscopic methods for *de novo* identification of key biomarkers. Various biological issues have been successfully studied by this holistic approach that include global metabolite composition assessment, mutant characterization, taxonomy, developmental processes, stress response, interaction with environment, quality control assessment and mode of action of herbal medicines.

Among the different techniques enlisted for metabolome analysis, UHPLC-TOF-MS, represents a powerful platform and provides, with the help of advanced data mining, an efficient way to localise biomarkers present at the trace level. Further LC-MS triggered microfractionation of the biomarkers can be conducted based on the UHPLC-TOF-MS information for a complete structure determination at the microgram level with microflow NMR techniques (CapNMR).

Such a strategy is used in our group for identifying key biomarkers in various biological systems for the search of stress induced natural products of biologic and therapeutic interest.

The research possibilities open by metabolomics will be summarised and the challenges that both chemists and biologists have to face in this perspective will be discussed.

Conférence présentée le

LUNDI 29 NOVEMBRE 2010 à 17h30

Université de Genève – Bâtiment Sciences II
Auditoire A. Pictet – A100 (**attention : nouvel auditoire**)
30, quai Ernest-Ansermet, Genève

La conférence est publique

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