

INVITED LECTURE H14

Lipidomics, novel tools and applications

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Genes encode for proteins which, together with environmental factors, lead to the metabolite inventory of an organism. Lipids are a critically important class of metabolites yet many functions of lipids remain poorly understood, in particular at the molecular level.

Systems scale research of lipids (lipidomics) has gained from a number of recent achievements and developments. First, genetic and cell biological research has provided new insights into molecular mechanisms of lipid action. Second, it is becoming increasingly clear that deregulated lipid metabolism plays an important role in many human diseases. Third, novel tools for lipid detection are being developed at a very rapid pace.

It should be stressed that lipidomics is a discipline which, due to its focus on lipids, is intrinsically allied with many other fields of research. Hence, a proposed research program in lipidomics will develop its full potential best when aligned and integrated with other areas of life science and environmental research.