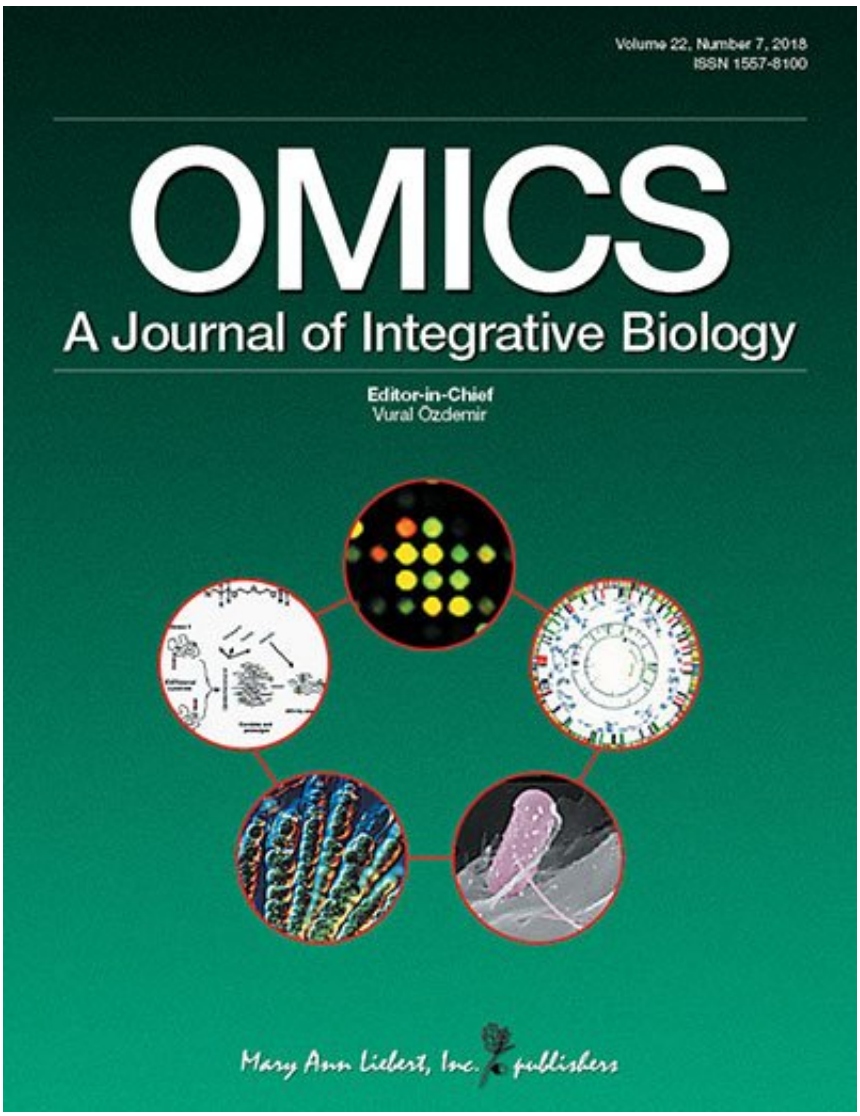
# Metabolomics applications for precision nutrition, formula, and neurodegenerative disorders

August 2 2018




Credit: Mary Ann Liebert, Inc., publishers

Metabolomics is the latest omics systems science technology with emerging applications towards psychiatry, personalized medicine, and most recently, precision nutrition research. Infant formula, for example, is manufactured to match the molecular composition of human milk. A new study reporting on the comparative lipid profiles of infant formulas and human milk using metabolomics is published in *OMICS: A Journal of Integrative Biology*.

In the article "Toward Precision Nutrition: Commercial Infant Formulas and Human Milk Compared for Stereospecific Distribution of Fatty Acids Using Metabolomics," Glaucia B. Alcantara, Universidade Federal de Mato Grosso do Sul (Campo Grande, Brazil) and coauthors present new findings on the lipid profiles of several commercially available infant formulas and compare them with human milk. The authors note that the observations can inform optimal design of infant formulas with a view to precision nutrition, and to better approximate the distribution of fatty acids naturally found in human milk, thus contributing to the better nutrition of newborns.

Attesting to the growing importance of metabolomics in medical research, "Metabolic Biomarkers and Neurodegeneration: A Pathway Enrichment Analysis of Alzheimer's Disease, Parkinson's Disease, and Amyotrophic Lateral Sclerosis," an article coauthored by Dilek Kazan, Marmara University (Istanbul, Turkey), examined neurodegenerative diseases such as Alzheimer's disease and Parkinson's disease using data on metabolite-disease associations published over a decade (2006-2016).

A strategic roadmap article on metabolomics and multi-omics science in psychiatry "Toward a Global Roadmap for Precision Medicine in Psychiatry: Challenges and Opportunities" coauthored by Shareefa Dalvie (University of Cape Town, South Africa) has been featured as

part of a two-volume special issue on Precision medicine 2.0 edited by Collet Dandara (University of Cape Town) chronicling the past, present and futures of new omics technology innovations in global health.

Access Volume I here.
Access Volume II here.

These articles and special issues highlighting the emerging and recent applications of metabolomics and omics systems sciences in precision nutrition and precision medicine are available free on the OMICS website until September 2, 2018.

"Metabolomics and multi-omics integration with genomics, proteomics and other systems science technologies bring about new insights," says Vural Özdemir, MD, Ph.D., DABCP, Editor-in-Chief of OMICS, "most notably for preventive medicine, precision nutrition and global health, disease susceptibility, and mechanisms of person-to-person variations in response to food, drugs, vaccines, and other health interventions. Each new omics technology is also an opportunity to think about responsible innovation, and the broad societal contexts in which scientific innovations emerge."

**More information:** Thiago I.B. Lopes et al, Toward Precision Nutrition: Commercial Infant Formulas and Human Milk Compared for Stereospecific Distribution of Fatty Acids Using Metabolomics, *OMICS: A Journal of Integrative Biology* (2018). DOI: 10.1089/omi.2018.0064

Provided by Mary Ann Liebert, Inc

https://medicalxpress.com/news/2018-08-metabolomics-applications-precision-nutrition-formula.html