Journal of Analytical Methods in Chemistry

Special Issue on
Clinical Metabolomics towards Biomarker Discovery

CALL FOR PAPERS

Metabolomics is a promising tool that aims to comprehensively analyse all the metabolites (i.e., molecules lower than 2 kDa) that are reflecting the intracellular biochemical reactions. Metabolomics has a potential in clinical research as most of clinical assays and theraputic drugs are based on small molecules. Due to the complexity of the metabolome and the large diversity of metabolites, complementary analytical platforms are typically required, such as Nuclear Magnetic Resonance (NMR) and high resolution Mass Spectrometry (MS) combined with Liquid Chromatography (LC) and Gas Chromatography (GC). However, despite its attractiveness, untargeted metabolomics remains little used in routine analysis, and further research is still needed in this field to allow for personalized medicine, earlier diagnosis, and better prognosis. Integrated analyses combining metabolomics with genomics, transcriptomics, and proteomics approaches will result in a significantly improved understanding of the disease mechanisms at systems level, the pathophysiology of the target clinical phenotype, and ultimately diagnostic, prognostic, and therapeutic biomarkers or metabolite fingerprints.

The metabolome is not only sensitive to genetic and environmental variations but also to analytical characteristics, highlighting the multiple challenges encountered in clinical metabolomics, including the study design, sample collection, storage and preparation, and data acquisition and processing. Similar to other clinical fields, the whole metabolomics workflow—from clinical phenotype to biomarker discovery, replication studies, and validation—needs to be standardized using the most reliable, robust, and reproducible procedures.

The scope of this special issue is to attract original research as well as review articles in the application of metabolomics and lipidomics in biomarker discovery for potential clinical utilization in a large diversity of diseases, personalized medicine, and pharmacometabolomics, as well as drug discovery. This special issue also targets original research articles as well as review articles focusing on inborn errors of metabolism, chronic kidney diseases, multiple sclerosis, neurodegenerative diseases, and other neuropsychological disorders. We encourage comprehensive articles from phenotyping to biomarker discovery with implicit analytical method development.

Potential topics include but are not limited to the following:

- Metabolomics studies in inborn errors of metabolism
- Diagnostic, prognostic, and therapeutic metabiomarker discovery in multiple sclerosis, osteoporosis, obesity, diabetes, and cancers as well as renal, cardiac, and neuronal diseases.
- Lipidomics in diseases such as cystic fibrosis, inflammation, neurological disorders, and metabolic syndrome.
- Metabolomics role in translational medicine research
- Metabolomics towards personalized medicine
- Pharmacometabolomics as a tool of drug efficacy and side effect prediction
- Method of data acquisition and analysis, statistical, chemo/bioinformatics, and chemometric approaches

Authors can submit their manuscripts through the Manuscript Tracking System at https://mts.hindawi.com/submit/journals/jamc/cmbd/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

Lead Guest Editor
Anas M. Abdel-Rahman, King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia
aabdelrahman46@kfshrc.edu.sa

Guest Editors
Isabelle Kohler, Leiden Academic Center for Drug Research, Leiden, Netherlands
i.kohler@lacdr.leidenuniv.nl

Vidya R. Velagapudi, University of Helsinki, Helsinki, Finland
vidya.velagapudi@helsinki.fi

Submission Deadline
Friday, 29 June 2018

Publication Date
November 2018