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Targeted strategies in clinical lipidomics studies

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Abstract

Targeted lipidomics studies have several advantages that are superior to non-targeted studies in clinical research. First, trace metabolites are not ignored and second, absolute levels of metabolites, rather than relative levels, are reported.

We will present our strategy of utilizing direct infusion ESI analyses with high resolution (140,000) mass spectrometry of a large array of targeted lipid metabolites followed by LC- and GC-tandem mass spectrometry for further validation. In all cases, analytical standards and stable isotope internal standards are utilized. Standard curves with ESI, GC-MS/MS and LC-MS/MS all demonstrate a broad linear range.

We will review the lipidomics of lymphoblasts from patients with peroxisomal disorders to demonstrate the utility of this approach.

Biography

Paul Wood has completed his Ph.D from Queen's University and postdoctoral studies from the NIMH. He is the director of the Metabolomics Unit at Lincoln Memorial University and is professor of pharmacology and physiology. He has published more than 280 peer-reviewed papers, serves as Editor-in-Chief of Metabolomics, and is a member of the editorial board of the JAOA.