

Accepted Manuscript

Lipidomics in translational research and the clinical significance of lipid-based biomarkers

Daniel J. Stephenson, L. Alexis Hoeflerlin, Charles E. Chalfant



PII: S1931-5244(17)30215-3

DOI: [10.1016/j.trsl.2017.06.006](https://doi.org/10.1016/j.trsl.2017.06.006)

Reference: TRSL 1163

To appear in: *Translational Research*

Received Date: 9 May 2017

Accepted Date: 8 June 2017

Please cite this article as: Stephenson DJ, Hoeflerlin LA, Chalfant CE, Lipidomics in translational research and the clinical significance of lipid-based biomarkers, *Translational Research* (2017), doi: 10.1016/j.trsl.2017.06.006.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Lipidomics in translational research and the clinical significance of lipid-based biomarkers

Daniel J. Stephenson¹, L. Alexis Hoeflerlin¹, and Charles E. Chalfant¹⁻⁵

¹Department of Biochemistry and Molecular Biology, Virginia Commonwealth University (VCU), Richmond VA, 23298

²Research Service, Hunter Holmes McGuire Veterans Administration Medical Center, Richmond, VA 23249

³VCU Massey Cancer Center, Cancer Cell Signaling Program, Virginia Commonwealth University, Richmond VA, 23298

⁴VCU Institute of Molecular Medicine, Richmond, VA 23298

⁵VCU Johnson Center for Critical Care and Pulmonary Research, Richmond, VA 23298

* To whom correspondence should be addressed: Charles E. Chalfant, Department of Biochemistry, Virginia Commonwealth University, Sanger Hall, 1101 E. Marshall St. Richmond VA 23298; Phone: 804-828-6594; email: charles.chalfant@vcuhealth.org

Keywords: lipidomics, translational research, biomarkers

Abstract

Lipidomics is a rapidly developing field of study that focuses on the identification and quantitation of various lipid species in the lipidome. Lipidomics has now emerged in the forefront of scientific research due to the importance of lipids in metabolism, cancer, and disease. Using both targeted and untargeted mass spectrometry as a tool for analysis, progress in the field has rapidly progressed in the last decade. Having the ability to assess these small molecules *in vivo* has led to better understanding of several lipid-driven mechanisms and the identification of lipid-based biomarkers in neurodegenerative disease, cancer, sepsis, wound healing, and pre-eclampsia. Biomarker identification and mechanistic understanding of specific lipid pathways linked to a disease pathologies can form the foundation in the development of novel therapeutics in hopes of curing human disease.

Download English Version:

<https://daneshyari.com/en/article/8769060>

Download Persian Version:

<https://daneshyari.com/article/8769060>

[Daneshyari.com](https://daneshyari.com)