Accepted Manuscript

Title: Comprehensive Lipidomic Analysis of Human Plasma using Multidimensional Liquid- and Gas-Phase Separations: Two-dimensional Liquid Chromatography–Mass Spectrometry *vs*. Liquid Chromatography–Trapped-Ion-Mobility–Mass Spectrometry

Authors: Anna Baglai, Andrea F.G. Gargano, Jan Jordens, Ynze Mengerink, Maarten Honing, Sjoerd van der Wal, Peter J. Schoenmakers

PII: S0021-9673(17)31662-X
DOI: https://doi.org/10.1016/j.chroma.2017.11.014
Reference: CHROMA 358998

To appear in: *Journal of Chromatography A*

Received date: 1-6-2017
Revised date: 6-11-2017
Accepted date: 9-11-2017

Please cite this article as: Anna Baglai, Andrea F.G.Gargano, Jan Jordens, Ynze Mengerink, Maarten Honing, Sjoerd van der Wal, Peter J.Schoenmakers, Comprehensive Lipidomic Analysis of Human Plasma using Multidimensional Liquid- and Gas-Phase Separations: Two-dimensional Liquid Chromatography–Mass Spectrometry vs.Liquid Chromatography–Trapped-Ion-Mobility–Mass Spectrometry, Journal of Chromatography A https://doi.org/10.1016/j.chroma.2017.11.014

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.

ACCEPTED MANUSCRIPT

Comprehensive Lipidomic Analysis of Human Plasma using Multidimensional Liquid- and Gas-Phase Separations: Two-dimensional Liquid Chromatography - Mass Spectrometry *vs.* Liquid Chromatography – Trapped-Ion-Mobility - Mass Spectrometry

Anna Baglai[1, 2], Andrea F. G. Gargano[1, 2], Jan Jordens[3], Ynze Mengerink[3], Maarten Honing [3,4], Sjoerd van der Wal[2], Peter J. Schoenmakers[2]

[1] TI-COAST, Science Park 904, 1098 XH Amsterdam, The Netherlands.

[2] University of Amsterdam, Van't Hoff Institute for Molecular Sciences, Science Park 904, 1098 XH Amsterdam, The Netherlands.

[3] DSM Resolve, Urmonderbaan 22, 6167 RD, Geleen, The Netherlands.

[4] Division of BioAnalytical Chemistry, Vrije Universiteit, De Boelelaan 1083, 1081 HV Amsterdam, The Netherlands.

E-mail: a.baglai@uva.nl; anna.baglai@gmail.com

Highlights

- RPLC×HILIC-MS method developed for untargeted lipidomic analysis of human plasma
- Method provided separation of the major lipid classes and a peak capacity of approximately 100,000
- LC-TIMS-MS method developed for lipidomic profiling of human plasma
- Two multidimensional separation platforms (LC×LC-MS *vs.* LC-TIMS-MS) were compared
- Main advantages and drawbacks of both approaches are discussed

Abstract

Recent advancements in separation science have resulted in the commercialization of multidimensional separation systems that provide higher peak capacities and, hence, enable a more-detailed characterization of complex mixtures. In particular, two powerful analytical tools are increasingly used by analytical scientists, namely online comprehensive two-dimensional liquid chromatography (LC×LC, having a second-dimension separation in the liquid phase) and liquid chromatography-ion mobility-spectrometry (LC-IMS, second dimension separation in the gas phase).

The goal of the current study was a general assessment of the liquid-chromatography – trapped-ion-mobility – mass spectrometry (LC-TIMS-MS) and comprehensive two-dimensional liquid

Download English Version:

https://daneshyari.com/en/article/7609343

Download Persian Version:

https://daneshyari.com/article/7609343

Daneshyari.com