

Addendum: An Optimised Dual Extraction Method for the Simultaneous and Accurate Analysis of Polar Metabolites and Lipids Carried out on Single Biological Samples. *Metabolites* 2020, 10, 338

Joran Villaret-Cazadamont, Nathalie Poupin, Anthony Tournadre, Aurélie Batut, Lara Gales, Daniel Zalko, Nicolas J. Cabaton, Floriant Bellvert, Justine Bertrand-Michel

► **To cite this version:**

Joran Villaret-Cazadamont, Nathalie Poupin, Anthony Tournadre, Aurélie Batut, Lara Gales, et al.. Addendum: An Optimised Dual Extraction Method for the Simultaneous and Accurate Analysis of Polar Metabolites and Lipids Carried out on Single Biological Samples. *Metabolites* 2020, 10, 338. *Metabolites*, MDPI, 2020, 10 (12), 10.3390/metabo10120490 . hal-03109907

HAL Id: hal-03109907

<https://hal.inrae.fr/hal-03109907>

Submitted on 14 Jan 2021




HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Addendum

Addendum: An Optimised Dual Extraction Method for the Simultaneous and Accurate Analysis of Polar Metabolites and Lipids Carried out on Single Biological Samples. *Metabolites* 2020, 10, 338

Joran Villaret-Cazadamont ¹, Nathalie Poupin ¹ , Anthony Tournadre ^{2,3}, Aurélie Batut ^{2,3}, Lara Gales ^{3,4}, Daniel Zalko ¹, Nicolas J. Cabaton ¹, Floriant Bellvert ^{3,4,*}  and Justine Bertrand-Michel ^{2,3,*} 

¹ Toxalim (Research Centre in Food Toxicology), Université de Toulouse, INRAE, ENVT, INP-Purpan, UPS, 31027 Toulouse, France; joran.villaret-cazadamont@inrae.fr (J.V.-C.); nathalie.poupin@inrae.fr (N.P.); daniel.zalko@inrae.fr (D.Z.); nicolas.cabaton@inrae.fr (N.J.C.)

² MetaboHUB-MetaToul-Lipidomics Core Facility, Inserm U1048, 31432 Toulouse, France; anthony.tournadre@sfr.fr (A.T.); aurelie_batut@orange.fr (A.B.)

³ MetaboHUB-MetaToul, National Infrastructure for Metabolomics and Fluxomics, 31077 Toulouse, France; lara.gales@insa-toulouse.fr

⁴ Toulouse Biotechnology Institute, Université de Toulouse, CNRS, INRAE, INSA, 31400 Toulouse, France

* Correspondence: florian.bellvert@insa-toulouse.fr (F.B.); justine.bertrand-michel@inserm.fr (J.B.-M.)

† Equally contributed to the work.

Received: 19 November 2020; Accepted: 20 November 2020; Published: 30 November 2020



The authors wish to make the following comment to the paper [1]:

Some words were unfortunately cut in the Material & Method Section 3.5. Double Extraction Method which prevents the protocol from being carried out correctly. The addition of 1 mL of water disappeared from the text; this step is crucial for a good realization of our new protocole.

So please use this completed protocole to perform the double extraction: Polar metabolites and lipids were extracted **using 4 mL of** a quenching solution consisting of a mix of cold (−20 °C) acetonitrile, methanol, and milliQ water with 0.1% formic acid 2:2:1 (*v/v/v*). Internal standards were added for polar metabolites and lipids using the same volume as described for the classical extraction. Samples were centrifuged at 400× *g*, polar metabolites and lipids were separated using a Bligh and Dyer modified extraction with 2.5 mL of dichloromethane **and 1 mL of water**. The aqueous phase (upper phase) was kept, evaporated, and resuspended in 100 μL of milliQ water for metabolites analysis. The organic phase (lower phase) was treated in the same way as described for the classical extraction procedure for apolar metabolites.

The authors would like to apologize for this omission, which compromises the success of the protocol described in this manuscript. These comments do not affect the scientific results.

Author Contributions: Conceptualization, F.B. and J.B.-M.; methodology, A.T., A.B. and L.G.; formal analysis, J.V.-C., A.T., N.P., J.B.-M. and F.B.; data curation, A.T. and L.G.; writing—original draft preparation, J.V.-C.; writing—review and editing, N.P., N.J.C., F.B., J.B.-M. and D.Z.; validation, N.J.C., N.P., F.B. and J.B.-M.; visualization, J.V.-C.; project administration, F.B. and J.B.-M.; funding acquisition, N.P., N.J.C., D.Z., J.B.-M. and F.B.; All authors have read and agreed to the published version of the manuscript.

Funding: This work was supported by the French National research Program for Environmental and Occupational Health of Anses (2018/1/172). JVC was funded by INRAE Human Nutrition division and by Région Occitanie.

Conflicts of Interest: The authors declare no conflict of interest.

Reference

1. Villaret-Cazadamont, J.; Poupin, N.; Tournadre, A.; Batut, A.; Gales, L.; Zalko, D.; Cabaton, N.J.; Bellvert, F.; Bertrand-Michel, J. An optimised dual extraction method for the simultaneous and accurate analysis of polar metabolites and lipids carried out on single biological samples. *Metabolites* **2020**, *10*, 338. [[CrossRef](#)] [[PubMed](#)]

Publisher’s Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



© 2020 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).