



Reply to Papini, A. Comment on “Nekkaa et al. Rhamnus alaternus Plant: Extraction of Bioactive Fractions and Evaluation of Their Pharmacological and Phytochemical Properties. *Antioxidants* 2021, 10, 300”

Amine Nekkaa, Akila Benaissa, Fabrice Mutelet, Laetitia Canabady-Rochelle

► To cite this version:

Amine Nekkaa, Akila Benaissa, Fabrice Mutelet, Laetitia Canabady-Rochelle. Reply to Papini, A. Comment on “Nekkaa et al. Rhamnus alaternus Plant: Extraction of Bioactive Fractions and Evaluation of Their Pharmacological and Phytochemical Properties. *Antioxidants* 2021, 10, 300”. *Antioxidants*, 2023, 12, <10.3390/antiox12122114>. <hal-04762815>

HAL Id: hal-04762815

<https://cnrs.hal.science/hal-04762815v1>

Submitted on 31 Oct 2024

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.



Distributed under a Creative Commons CC BY 4.0 - Attribution - International License



Reply

Reply to Papini, A. Comment on “Nekkaa et al. *Rhamnus alaternus* Plant: Extraction of Bioactive Fractions and Evaluation of Their Pharmacological and Phytochemical Properties. *Antioxidants* 2021, 10, 300”

Amine Nekkaa ^{1,2,*}, Akila Benaissa ³, Fabrice Mutelet ² and Laetitia Canabady-Rochelle ^{2,*}

¹ Process Engineering Laboratory for Sustainable Development and Health Products, Department of Process Engineering, National Polytechnic School of Constantine—Malek Bennabi, Constantine 25000, Algeria

² Laboratoire Réactions et Génie des Procédés, CNRS, Université de Lorraine, F-54000 Nancy, France

³ Laboratory of Process Engineering for the Environment (LIPE), Department of Pharmaceutical Engineering, Faculty of Process Engineering, Salah Boubnider University, Constantine 3, Constantine 25000, Algeria

* Correspondence: amine.nekkaa25@gmail.com (A.N.); laetitia.canabady-rochelle@univ-lorraine.fr (L.C.-R.)



Citation: Nekkaa, A.; Benaissa, A.; Mutelet, F.; Canabady-Rochelle, L. Reply to Papini, A. Comment on “Nekkaa et al. *Rhamnus alaternus* Plant: Extraction of Bioactive Fractions and Evaluation of Their Pharmacological and Phytochemical Properties. *Antioxidants* 2021, 10, 300”. *Antioxidants* 2023, 12, 2114. <https://doi.org/10.3390/antiox12122114>

Academic Editors: Adriano Mollica and Azzurra Stefanucci

Received: 10 February 2023

Accepted: 28 November 2023

Published: 14 December 2023



Copyright: © 2023 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 (<https://creativecommons.org/licenses/by/4.0/>).

We appreciate the commentary by Alessio Papini [1] regarding our published article [2]. The taxonomy of species-rich genera often represents a challenge for scientists because reaching a sound classification requires extensive sampling. Furthermore, *Rhamnus alaternus* is an example of a species with a challenging taxonomic history, as is also the case for other genera of *Rhamnaceae*. In Section 2.2 (Botanica Description), the authors agreed to change the passage in question as follows: “*R. alaternus* belongs to the *Magnoliophyta* division, the *Magnoliopsida* class, the *Rhamnales* order, the *Rhamnaceae* family, the *Rhamnus* Genus and the *Rhamnus alaternus* species”.

The second point is the intraspecific treatment of *Rhamnus alaternus* by Nekkaa et al. [2]. We would like to thank Alessio Papini for his correction, and our intention was to mention these varieties. The authors would like to change this sentence according to the proposition of Alessio Papini: “In addition, this plant has several varieties including *R. a. var angustifolia* DC, *R. a. var balearica* DC, *R. a. var hispanica* DC, and *R. a. var vulgaris* DC”.

We now address the following pertinent question asked by Alessio Papini: how much does taxonomic inaccuracy affect the results about the pharmaceutical properties of plants? As a pharmaceutical and food-process-engineering team, we are working on the optimization of the green extraction of bioactive compounds from different parts of *Rhamnus alaternus* plants from Algeria. Before our experimental study was conducted, the botanical identification was overseen in collaboration with botanists and experts in phytochemistry from the laboratory of pharmacognosy, the Pharmacy department, University of Constantine 3 (Algeria), to ensure that we worked on *Rhamnus alaternus* plants specifically [3].

To respond to the question raised by Alessio Papini, pharmaceutical and food-process-engineering teams like ours must work in close collaboration with taxonomists and experts in phytochemistry to avoid taxonomic inaccuracy. Moreover, such collaboration would enable us to explore and understand how systematic biodiversity might influence the biodiversity of secondary metabolites in plants. Thus, we fully agree with the author of the commentary and look forward to hearing more about this promising topic in the near future.

Author Contributions: Conceptualization, A.N. and A.B.; Writing—original draft preparation, A.N.; Writing—review and editing, A.B., F.M. and L.C.-R.; Supervision, A.B., F.M. and L.C.-R.; Project administration, A.B. and L.C.-R.; Funding acquisition, L.C.-R. All authors have read and agreed to the published version of the manuscript.

Funding: This research work was supported by PHC-Tassili (Code 20MDU917). Besides, the authors acknowledge the support of the “Laboratoire Réactions et Génie des Procédés” by the “Impact Biomolécules” project of the “Lorraine Université d’Excellence” (Investissements d’avenir–ANR project number 15-004).

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

References

1. Papini, A. Comment on Nekkaa et al. *Rhamnus alaternus* Plant: Extraction of Bioactive Fractions and Evaluation of Their Pharmacological and Phytochemical Properties. *Antioxidants* 2021, 10, 300. *Antioxidants* **2023**, 12, 2113. [[CrossRef](#)]
2. Nekkaa, A.; Benaissa, A.; Mutelet, F.; Canabady-Rochelle, L. *Rhamnus alaternus* plant: Extraction of bioactive fractions and evaluation of their pharmacological and phytochemical properties. *Antioxidants* **2021**, 10, 300. [[CrossRef](#)] [[PubMed](#)]
3. Nekkaa, A.; Benaissa, A.; Lalaoua, A.E.D.; Mutelet, F.; Canabady-Rochelle, L. Optimization of the extraction process of bioactive compounds from *Rhamnus alaternus* leaves using Box-Behnken experimental design. *J. Appl. Res. Med. Aromat. Plants* **2021**, 25, 100345. [[CrossRef](#)]

Disclaimer/Publisher’s Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.