Review of: "[Review] The antibacterial activity of Allium sativum, Thymus vulgaris, Origanum vulgare, Curcuma longa, Rosmarinus officinalis, and Cinnamomum species against various antibiotic-resistant strains of bacteria: A Literature Review"

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Potential competing interests: No potential competing interests to declare.

Within the paper entitled "The antibacterial activity of Allium sativum, Thymus vulgaris, Origanum vulgare, Curcuma longa, Rosmarinus officinalis, and Cinnamomum species against various antibiotic-resistant strains of bacteria: A Literature Review" the authors, have presented detailed study of an influence of selected microbiome for a plant growth. I really appreciated the wide range of the topics touched within this review (very clearly presented within this study, what does not happen so often) and some open statements that have been used within this work. Battling cancer is nowadays' challenge in modern agriculture and the food industry. That is why more and more methods as well as the analytical techniques are being employed to monitor, and battle this problem. Metabolomics analyses performed with NMR and Mass Spec techniques are one of the best approaches for that. In order to improve this paper authors should refer to the test placed below:

There is a large potential in this area of research (especially metabolomics), because in the recent years a lot of the developments have been observed in the analytical as well as spectroscopic methods of the identification of the compounds (natural ones as well as pollutants) in a variety of types of tissues (Molecules. 2020 Oct 9;25(20):4597. doi: 10.3390/molecules25204597). The NMR spectroscopy techniques offered recently the next step in more detailed studying the issue related to the new potentially active or potentially toxic compounds in different types of the bio-material (like a tissue - plant or animal one) on the molecular level, one can look into direction of metabolomics, targeted and untargeted analyses (Metabolites. 2019 Jun 27;9(7):123. doi: 10.3390/metabo9070123), and its wide possibilities that would complement the complementary studies of the plant/animal material. Thanks to this approach more useful markers can be identified. Moreover, it is worth mentioning at this point the recently reported developments in the methodology that is used in e. g. NMR-based metabolomics studies in the sensitivity (RSC Adv. 2021 Feb 25;11(15):8694-8700. doi: 10.1039/d1ra01103k. eCollection 2021 Feb 23) as well as in the resolution of spectra (Mol Omics. 2021 Oct 11;17(5):719-724. doi: 10.1039/d1mo00118c). These improvements give new possibilities for a more comprehensive approach to the presented problems connected with the economically important aspects in agriculture as well as in medicine.

Moreover, there is still some more room for an improvement of this decent work of metabolomics on the potential pollutants of the environment. In order to further improve the quality of this study authors should refer to newer works studying the other pollutants in the counterparts of their clam that live in different types of marine waters. The recently published work mentioned under the given citation should be quite helpful in doing this:

https://www.frontiersin.org/articles/10.3389/fmars.2022.813404/full

After implementation of these changes mentioned above will surely make this work more attractive to the broader group of readers.

Authors should elaborate a little bit more about the statistical calculations they have used within their study. It will make their study even more useful for the more general public.

Environmental pollution with different unnatural substances and the presence of pests, and oomycetes are an increasing problem in present times. And can affect the extracts one gets from the plant material.