

Paper: “Characterization of Mycosporine-like Amino Acids in Chlorophyll f Producing Cyanobacteria from Shaded Niches”

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Corresponding Author: Mamadou Chetima Maina Boukar

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Peer review:

Reviewer 1: Blinded

Reviewer 2: Blinded

Reviewer 3: Blinded

Reviewer A:
Recommendation: Revisions Required

The TITLE is clear and it is adequate to the content of the article.

Yes

The ABSTRACT clearly presents objects, methods, and results.

Yes

There are a few grammatical errors and spelling mistakes in this article.

I found only one :)... You may see the text.

The study METHODS are explained clearly.

Yes

The body of the paper is clear and does not contain errors.

I should have changed the paper's body... I mentioned it in the text.

The CONCLUSION or summary is accurate and supported by the content.

Yes

The list of REFERENCES is comprehensive and appropriate.

A very small mistake... I mentioned it.

Please rate the TITLE of this paper.

[Poor] **1-5** [Excellent]

5

Please rate the ABSTRACT of this paper.

[Poor] **1-5** [Excellent]

5

Please rate the LANGUAGE of this paper.

[Poor] 1-5 [Excellent]

5

Please rate the METHODS of this paper.

[Poor] 1-5 [Excellent]

5

Please rate the BODY of this paper.

[Poor] 1-5 [Excellent]

4

Please rate the CONCLUSION of this paper.

[Poor] 1-5 [Excellent]

5

Please rate the REFERENCES of this paper.

[Poor] 1-5 [Excellent]

5

Overall Recommendation!!!

Accepted, minor revision needed

Comments and Suggestions to the Author(s):

Please see the paper's text. I suggested another division of paper's body.

Reviewer B:

Recommendation: See Comments

The TITLE is clear and it is adequate to the content of the article.

The title is clear, and it is adequate to the content of the article. However, the authors could incorporate descriptive language or wordplay to draw attention to the key findings of the study (attention-grabbing or engaging).

It could be rephrased as "Unveiling Sunscreen Secrets: Exploring UV Protection in Shaded Cyanobacteria with Chlorophyll f" (just a suggestion). This title still maintains the essence of the original while adding a touch of intrigue and highlighting the unique aspect of UV protection in cyanobacteria adapted to shaded environments.

The ABSTRACT clearly presents objects, methods, and results.

The abstract provides a concise overview of the objectives, methods, and results of the study. However, the transition from one section/sub-section to another (e.g., the transition from methods to results) can be improved to provide a smoother flow and better guide the readers through the manuscript. Consider reorganizing some paragraphs to enhance the overall coherence and readability of the paper (this comment applies to the entire manuscript).

Finally, the researchers should consider a graphical abstract.

There are a few grammatical errors and spelling mistakes in this article.

There are some errors in sentence structure and grammar, but they do not hinder comprehension of the content. However, the authors could seek help from some "academic English editing services" to further enhance the readability of their manuscript.

The study METHODS are explained clearly.

The steps are clearly outlined, facilitating the reproducibility of the experiments. However, is there any reason for targeting chlorophyll f-producing cyanobacteria? If yes, kindly state that (obviously, the authors stated that these chlorophyll f-producing organisms were initially isolated, but was there evidence or speculation suggesting a potential link between chlorophyll f and MAA production?). Also, they should state whether there are specific adaptations or environmental conditions associated with chlorophyll f production that make these cyanobacteria particularly relevant for studying MAAs (from the previous study)?

For some of your methods, you need to provide citations to buttress your approaches.

The body of the paper is clear and does not contain errors.

The body of the paper presents the experimental results. Figures and tables are used effectively to illustrate the findings. However, the authors should consider reorganizing some paragraphs to enhance the overall coherence and readability of the paper.

For the results and discussion section:

1. What do the absorption spectra reveal about the presence of chlorophyll and mycosporine-like amino acids (MAAs) in the cyanobacterial samples?
2. The authors should consider quantifying the concentration of MAAs in the cyanobacterial samples using standard methods or techniques.
3. There is a need to compare the obtained spectra with reference spectra of known MAAs, such as mycosporine-glycine, and it has to be stated in the write-up (how closely do they match, and are there any deviations or unique features). This could be done using the NIST, Wiley registry, ... etc.
4. The authors should state how the spectral findings contribute to the scientific understanding of the adaptive strategies of cyanobacteria in shaded environments, particularly in terms of UV protection and photoprotection mechanisms.
5. More comparisons should be made between the findings of this present manuscript and existing literature. It has been done, but too little.

The CONCLUSION or summary is accurate and supported by the content.

No conclusion title is provided, which has to be done. The authors should offer specific recommendations for future research or practical approaches based on the results. Especially, they should state if there are any potential limitations or challenges associated with studying MAAs in chlorophyll f-producing cyanobacteria (could the presence of chlorophyll f affect the extraction, detection, or quantification of MAAs, or introduce confounding factors in the interpretation of results?).

The list of REFERENCES is comprehensive and appropriate.

All the in-text citations in the manuscript are included in the list of references, and vice versa. However, most of the references are dated, suggesting a potential gap in incorporating recent developments in the field. To enhance the scholarly value, it would be advisable to include more recent references (3-5 years old references), ensuring the study aligns with the latest advancements and provides readers with up-to-date information in this research area.

Please rate the TITLE of this paper.

[Poor] **1-5** [Excellent]

3

Please rate the ABSTRACT of this paper.

[Poor] **1-5** [Excellent]

2

Please rate the LANGUAGE of this paper.

[Poor] **1-5** [Excellent]

2

Please rate the METHODS of this paper.

[Poor] **1-5** [Excellent]

2

Please rate the BODY of this paper.

[Poor] **1-5** [Excellent]

2

Please rate the CONCLUSION of this paper.

[Poor] **1-5** [Excellent]

1

Please rate the REFERENCES of this paper.

[Poor] **1-5** [Excellent]

2

Overall Recommendation!!!

Return for major revision and resubmission

Comments and Suggestions to the Author(s):

The authors should consider addressing all corrections and suggestions made. Also, while resubmitting, they should number each line in the final manuscript.

Reviewer C:

Recommendation: See Comments

The TITLE is clear and it is adequate to the content of the article.

Oui le titre est clair et adéquat au contenu

The ABSTRACT clearly presents objects, methods, and results.

oui, cependant il pourrait inclure brièvement la conclusion.

There are a few grammatical errors and spelling mistakes in this article.

Pas de remarques

The study METHODS are explained clearly.

certaines parties pourraient être simplifiées en regroupant les résultats ou les méthodes similaires afin d'améliorer la lisibilité. par exemple au niveau de l'identification MAA dans *Chroococcidiopsis* souches.

The body of the paper is clear and does not contain errors.

Pas de remarques

The CONCLUSION or summary is accurate and supported by the content.

la conclusion pourrait ressortir l'importance de l'étude sur les cyanobactéries et les acides aminés de type mycosporine.

Aussi les auteurs pourraient aborder les limites de cette et les perspectives.

The list of REFERENCES is comprehensive and appropriate.

la référence "Chen et al., 2012" n'est pas incluse dans la liste des références. Aussi les références sont pertinentes, toute fois, elles pourraient être mise à jour pour inclure les études plus récentes.

Please rate the TITLE of this paper.

[Poor] **1-5** [Excellent]

5

Please rate the ABSTRACT of this paper.

[Poor] **1-5** [Excellent]

4

Please rate the LANGUAGE of this paper.

[Poor] **1-5** [Excellent]

5

Please rate the METHODS of this paper.

[Poor] **1-5** [Excellent]

4

Please rate the BODY of this paper.

[Poor] **1-5** [Excellent]

3

Please rate the CONCLUSION of this paper.

[Poor] **1-5** [Excellent]

3

Please rate the REFERENCES of this paper.

[Poor] **1-5** [Excellent]

Overall Recommendation!!!

Accepted, minor revision needed

Comments and Suggestions to the Author(s):

Ils peuvent tenir compte de ces commentaires ci-dessus.
