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OPEN PEER REVIEW

Chemical Composition, Cholinesterase Inhibitory Effect and Cytotoxic Activity Study of Essential Oils Extracted from Different Parts of *Satureja isophylla* Rech.f

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About this report

This open peer review (OPR) report shows the public comments made on this article during peer review, by the reviewers, the associate editor and the editor-in-chief, for every revision round, together with the authors' replies. Comments appear only with the consent of the people who wrote them. Reviewers who chose to sign their report are named; the others are shown as "Referee". Comments are edited for language only, and confidential remarks to the editors are not included.

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1 Original submission

4 comments · 26 Mar 2024 – 6 Apr 2024

Referee 1 Reviewer

MAJOR REVISION 26 Mar 2024

The manuscript entitled " Chemical Composition, Cholinesterase Inhibitory Effect and Cytotoxic Activity Study of Essential Oils Extracted from Different Parts of Satureja isophylla Rech.f." suffers from some defects that should be addressed as follows:
1. The manuscript should be revised thoroughly to avoid any grammar mistakes.
2. The article, especially the introduction, should be rewritten to be more comprehensive and interesting.
3. Mentioning the previous reviews of the current subject is also necessary.
4. I suggest comparing the selected biological activity data where they are discussed, rather than at the end of the manuscript – it will improve the readability and presentation of the discussion.
5. The first time you use a phrase that can be abbreviated, spell it out in full and provide the abbreviation in parentheses. Use only the abbreviation thereafter.
6. The toxicity of these compounds in normal cells needs to be tested.
7. Please give reasons for selecting these cell lines in particular.
8. Line 164-163: "An evaluation of the chemical profile of Satureja isophylla essential oils was conducted along with anticholinesterase, anticancer, and antimicrobial activities," but antimicrobial activities are not mentioned in the article or title.
9. Kindly provide updated references from the last 5 years.

Referee 2 Reviewer

MAJOR REVISION 1 Apr 2024

Dear Editor
Have a nice day.
The author investigated the chemical composition, cholinesterase inhibitory effect, and cytotoxic activity of essential oils extracted from different parts of Satureja isophylla Rech.f.
I would suggest reconsidering the manuscript for publication only after the following major revisions.
1. Please check all abbreviations.
2. It is necessary to rewrite the results section more completely.
3. Please use the same units to report numerical values.
4. The background part should be more complete.
5. Section 3.2 should be written based on a valid reference.
6. Please define a parameter in table 1.
7. Please explain the possible reason for the increase in the percentage of surviving cells after 48 hours.

Referee 3 Reviewer

MINOR REVISION 3 Apr 2024

Dear editor
Have a nice time
While thanking the esteemed researchers for their valuable work on this manuscript, I would like to make some observations:

3. It seems that references 1 and 2 say nothing about the endemicity of the plant.
4. It may be better to merge part 3.6 of the manuscript with part 3.5.
5. It would have been better in the discussion section to compare the results of butyryl cholinesterase and acetyl cholinesterase inhibition.

Associate Editor

MAJOR REVISION 6 Apr 2024

Dear Authors,

We have received the reports from our reviewers on your manuscript, "Chemical Composition, Cholinesterase Inhibitory Effect and Cytotoxic Activity Study of Essential Oils Extracted from Different Parts of Satureja isophylla Rech.f.", which you submitted to Jundishapur Journal of Natural Pharmaceutical Products.
Based on the advice received, we have decided that your manuscript could be reconsidered for publication should you be prepared to make major revisions. When preparing your revised manuscript, you are asked to carefully consider the reviewers' comments and submit a list of responses to the comments. Please ensure that all changes in the revised manuscript are highlighted in yellow so that reviewers can detect them.

With kind regards,
Associate Editor

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Revision 1

AUTHORS' RESPONSE TO REVIEWERS

Authors' reply to reviewers

The next pages contain the authors' point-by-point reply to the comments of this revision round, as submitted with the revised manuscript. It is published as the authors wrote it.

Dear Editor,

Thanks for your message regarding the evaluation of the subject manuscript. Online please see the revised files changed based on the comments I received. Let me know please if you need more information please.

Sincerely yours,
The corresponding author

Reviewer 1:
1. Are different parts of the plant used fresh or dried?

My answer: Different parts of the plant were collected separately and they were dried at room temperature individually. Then, the dried parts were used for the experiments. This point is already addressed in the Materials and Methods part (Phytochemicalssection).

2. The percentage of essential oil obtained from different parts of the plant is not stated.

My answer: To address this comment, the yield of each part of the plant was mentioned in appropriate of the manuscript. Results part (Chemical compositions of volatile oils section).

3. It seems, in reference 1 and 2, nothing is said about the endemicity of the plant.
My answer: In these references, the endemicity of the planet in Iran is discussed in the introduction section with appropriate references to the past.

4. It may be better to merge part 3.6 of the manuscript in the same part 3.5.
My answer: To address this comment, the two sections were merged (new section 3.5).

5. It would have been better in the discussion section to compare the results of butyryl cholinesterase and acetyl cholinesterase inhibition.
My answer: This was discussed in several sentences in the discussion section.

Reviewer 2:
1. Please check all abbreviations.
My answer: All abbreviations were re-checked and defined as needed.

2. It is necessary to rewrite the results section more completely.
My answer: This section was modified.

3. Please use the same units to report numerical values.
My answer: In result section, all numerical values were reported as μg/mL

4. The background part should be more complete.

My answer: To address this comment, the section was completed.

5. Section 3.2 should be written based on a valid reference.
My answer: The reference of this method was added in the text.

6. Please define a parameter in table 1.
My answer: The parameter “KI” is already defined as the footnote ‘a”m below the table 1.

7. Please explain the possible reason for the increase in the percentage of surviving cells after 48 hours.
My answer: Essential oils are volatile and they deactivate very soon at high temperatures and under light. Due to this and because of possible decomposition, the activity of essential oils may decrease gradually.

Reviewer 3:
1. The manuscript should be revised thoroughly to avoid any grammar mistakes.
My answer: The article was revised again grammatically.

2. The article specially introduction should be rewritten to be more comprehensive and interesting.
My answer: This section was changed accordingly.

3. Mentioning the previous reviews of the current subject is also so needed.
My answer: In discussion section other studies about anti-Alzheimer’s disease of *Satureja* were mentioned.

4. I suggest comparing the selected biological activity data in the place, where they are discussed but not at the end of the manuscript – it will improve the readability and presentation of the discussion.
My answer: The discussion was revised to address this comment.

5. Only for the first time a phrase that can be abbreviated, spell it out in full and provide the abbreviation in parentheses. Use only the abbreviation there after.
My answer: The point was addressed throughout the manuscript.

6. The toxicity of these compounds in normal cells needs to be tested.
My answer: Thanks for this comment. Normal cell tests was added to the manuscript

7. Please give reasons for selecting these cell lines especially.
My answer: Due to previous studies the anticancer effects of *Satureja* sp. were proven and the cytotoxicity of this species was investigated in this article.

8. Line 164-163: "An evaluation of the chemical profile of Satureja isophylla essential oils was conducted along with anticholinesterase, anticancer, and antimicrobial activities, but it is not mentioned about antimicrobial activities in article or title.

My answer: Thanks to reviewer’s precision. This mistake was corrected in the manuscript.

9. Kindly provide updated references from the last 5 years.
My answer: This was addressed by adding some new references..

2 Revision 1

3 comments · 8 Jun 2024 – 10 Jun 2024

Referee 2 Reviewer

ACCEPT 8 Jun 2024

Dear Editor
Have a nice day.
The addressed issues and concerns have been effectively resolved. Consequently, the reviewer agrees to proceed with the publication of this paper in its current state.

Referee 4 Reviewer

MAJOR REVISION 9 Jun 2024

• Subject
• 1) Is the article within the scope of the journal?
Yes
• 2) Does the article have novelty?
Yes
• Title
• 3) Does the title reflect the content appropriately?
Yes
• 4) Is there any abbreviation in the title?
No

Associate Editor

ACCEPT 10 Jun 2024

Thank you for submitting your manuscript to Jundishapur Journal of Natural Pharmaceutical Products. I am glad to inform you that your manuscript has been accepted for publication in this journal.

I would also greatly appreciate your contribution and time as a reviewer for this journal. Without the dedication of reviewers like you, it would be impossible to manage an efficient peer review process and maintain the high standards necessary for a successful journal.