

Authors

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Manuscript No.FBL15321 - Accept in Current Form

Manuscript Information

Journal	FBL
Article Type	Original Research
Article Title	Pharmaceutical Development of Intraperitoneal Arachis hypogaea As a Renal Protective Agent
Section	--
Special Issue	--
Abstract	<p>Kidneys are among the vital organs of the human body; therefore, damage from any exogenous /endogenous agent may put human life at risk. Arachis hypogaea (AH) contains different free radical scavenging flavonoids, stilbenes, and tannins. The aim of this research was to elucidate the possible nephroprotective mechanism of AH methanolic crude extract (AHcr) and n-hexane oil fraction (AHO) against gentamycin-induced nephrotoxicity. After the extraction of the crude oil of the plant, they were tested against GM treated group of Swiss Albino mice for their nephroprotective action. Animals were divided in six (6) equal groups with five (5) animals in each group. These groups were: control group (0.5 mL normal saline via intraperitoneal -i.p), gentamycin group (gentamycin 100 mg/kg i.p), Silymarin + gentamycin group (Silymarin 50 mg/kg and gentamycin 100 mg/kg i.p), plant extract (AHcr1) and gentamycin group (AHcr1 250 mg/kg and gentamycin 100 mg/kg i.p), AHcr2 + gen-tamycin group (AHcr2; 500 mg/kg and gentamycin 100 mg/kg i.p) and the hexane oil fraction (AHO) + gentamycin (AHO 1 mL/kg and GM 100 mg/kg i.p). After completion of doses, animals were sacrificed for the collection of blood to further investigate biochemical changes and histopathological changes in kidney tissues. Serum creatinine, urea, and blood urea nitrogen significantly increased ($P < 0.001$) in gentamycin-treated group as compared to the control group. The elevated level of serum creatinine, urea, and blood urea nitrogen were decreased significantly ($P < 0.001$) in groups treated with AHcr and AHO compared to the gentamycin group. Similarly, the histopathological study of kidney tissues from the gentamycin group showed tubular necrosis, vacuolation, and fibrosis. It is concluded that the effect of crude extract and hexane soluble fraction of AH caused a significant reversal of gentamycin-induced nephrotoxicity.</p>
Keywords	medicine;crop growth;food market and development;human and illness;sustainable growth
Funding	--
Discount	--

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Suggested & Opposed Reviewers ^

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Academic Editor Decision ^

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Reviewer(s) Decision ^

Reviewer 1 **Reviewer 2**

Report 1 ^

Comments to Author

The topic is interesting and the experimental procedure has been well designed. However, I suggest the following revisions before the paper can be considered for publication:

- The manuscript needs linguistic revision. There are some repetitions (for example: "Kidney diseases", line 29; "aminoglycosides", lines 38-39; "shows...showed....showed", lines 240-241) and many grammatical errors. I report some examples: "medicines which have.....IS also a major source..." (lines 36-37); "Example..... ARE..." (line 38); "caused" should be replaced by the simple present form (line 43); the sentence at lines 46-47 needs to be rephrased; "compound" (line 57) should be written in the plural form; the sentence at line 70 should be rephrased; "the components...WAS collected..." (lines 72-73); "GUIDLINE...WERE followed" (line 125); "in the later" (line 226) should be replaced by "in the LATTER"; "the results SHOWS" (line 240); "Narasimhan et al HAS" (lines 260-261); "VACCULATION" (line 304); sometimes "tubular" is erroneously written as "tubal"; contracted forms of verbs (for example "didn't" [line 341]) should be avoided.
- Line 40: the Authors mention the seeds of *Arachis hypogaea*. However, the plant has never been cited or described so far in the "Introduction" section but only in the Abstract, which must be considered separately from the text. Please modify.
- Line 56: the Authors state that they used "both in vitro and Swiss albino mice models". Nevertheless, there are no experiments performed in in vitro models throughout the text.
- Were blood samples also collected at baseline?
- Line 128: please specify what Group 1 received as it was indicated for all the other groups.
- Lines 142-147: please specify that also groups IV, V and VI were treated for 10 days.
- Line 176: please correct "+ mean standard error" with "mean \pm standard error of the mean (SEM)". Some correction should be made also in the caption of Figure 2.
- Lines 278 and 283: "Shrinking glomerular filtration" and "Reduction in Renal Blood flow" should be written in bold
- Line 297: "Figure 4a & b" is wrong, please correct.
- Lines 303-304: there is no Figure 5 in the manuscript file, please correct.
- Line 313-314: the sentence is incomplete.
- Table 4: please specify the meaning of S1, SII, and SI.
- Lines 337-338: please specify in the caption what the arrows drawn in the Figure 4 indicate.
- Lines 360-361: according to what has been stated by the Authors before about the cytotoxic action of some chemicals present in the oil (lines 343-344), could a higher dose be instead more harmful? Please add a comment on this.

Author Response to Report

We would like to thank you for your careful and thorough reading of this manuscript as well as for the thoughtful comments and constructive suggestions, which help to improve the quality of this manuscript. We have carefully edited the manuscript according to your input. We truly hope that the revised manuscript is clear to follow. The response and amendment for each comment are as below.

The topic is interesting and the experimental procedure has been well designed. However, I suggest the following revisions before the paper can be considered for publication:

- The manuscript needs linguistic revision. There are some repetitions (for example: "Kidney diseases", line 29; "aminoglycosides", lines 38-39; "shows...showed....showed", lines 240-241) and many grammatical errors. I report some examples: "medicines which have.....IS also a major source..." (lines 36-37); "Example..... ARE..." (line 38); "caused" should be replaced by the simple present form (line 43); the sentence at lines 46-47 needs to be rephrased; "compound" (line 57) should be written in the plural form; the sentence at line 70 should be rephrased; "the components...WAS collected..." (lines 72-73); "GUIDLINE...WERE followed" (line 125); "in the later" (line 226) should be replaced by "in the LATTER"; "the results SHOWS" (line 240); "Narasimhan et al HAS" (lines 260-261); "VACCULATION" (line 304); sometimes "tubular" is erroneously written as "tubal"; contracted forms of verbs (for example "didn't" [line 341]) should be avoided.

Ans- The authors are thankful to the reviewer- all the suggested changes have been made.

- Line 40: the Authors mention the seeds of *Arachis hypogaea*. However, the plant has never been cited or described so far in the "Introduction" section but only in the Abstract, which must be considered separately from the text. Please modify.

Ans- Thank you for pointing this out. The required suggestion has been included in the introduction (highlighted in red)

- Line 56: the Authors state that they used "both in vitro and Swiss albino mice models". Nevertheless, there are no experiments performed in in vitro models throughout the text.

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baseline.

- Line 128: please specify what Group 1 received as it was indicated for all the other groups.

Thank you- this has been corrected

- Lines 142-147: please specify that also groups IV, V and VI were treated for 10 days.
Thank you-this has been included

- Line 176: please correct "+ mean standard error" with "mean \pm standard error of the mean (SEM)". Some correction should be made also in the caption of Figure 2.

Thank you- this has been included in the Figure 2

- Lines 278 and 283: "Shrinking glomerular filtration" and "Reduction in Renal Blood flow" should be written in bold

Thank you- this has been rewritten in bold

- Line 297: "Figure 4a & b" is wrong, please correct.

Thank you- this has been recorrected

- Lines 303-304: there is no Figure 5 in the manuscript file, please correct.
Thank you- this has been corrected

- Line 313-314: the sentence is incomplete.
Thank you-this sentence has been rewritten

- Table 4: please specify the meaning of S1, SII, and SI.

- Lines 337-338: please specify in the caption what the arrows drawn in the Figure 4 indicate.

Ans- Thank you-this has been added in the caption of the Figure 4.

- Lines 360-361: according to what has been stated by the Authors before about the cytotoxic action of some chemicals present in the oil (lines 343-344), could a higher dose be instead more harmful? Please add a comment on this.

Ans- Thank you for the comment- theoretically, yes, but we cannot say with surety that by increasing the dose, the cytotoxic action will increase because it is an oil fraction (containing different constituents) therefore, by varying the dose, there is the possibility that the cytotoxic effect may decrease.

Report 2

Comments to Author

The Authors edited the manuscript as suggested. In my opinion, only minor revisions remain to be made according to my previous report. In particular:

- I suggest to replace "tubal" with "tubular".
- The Authors did not meet the second point of the revision (" - Line 40: the Authors mention the seeds of Arachis hypogaea. However, the plant has never been cited or described so far in the "Introduction" section but only in the Abstract, which must be considered separately from the text. Please modify)
- Please specify more clearly that in vitro models mean histopathological studies.
- The Authors did not specify what Group 1 received and did not correct the part regarding SEM as well as "Figure 4a & b" in the text.
- As already requested, please specify the meaning of S1, SII, and SI in Table 4.
- Please describe more in detail the meaning of the arrows drawn in the various parts of Figure 4.

Author Response to Report

Dear reviewer,

We would like to thank you for your careful and thorough reading of this manuscript as well as for the thoughtful comments and constructive suggestions, which help to improve the quality of this manuscript. We have carefully edited the manuscript according to your input. We truly hope that the revised manuscript is clear to follow. The amendment for each comments were highlighted in yellow in the revised manuscript.

Thank you.

Best regards

Help us improve by sharing your feedback.



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Reviewers

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Reviewer(s) Decision

Reviewer 1 [Reviewer 2](#)

Report 1

Comments to Author

Corrections should be done especially in lines:

Line 265 3.5 "Effect on Histopathology" should be changed with Histopathological aspects

Line 194 where comma is missing

Line 218" Serum urea plays an important role in the nephrotoxicity [24]an increase in serum level of urea is mainly

Lines 289-290 " As discussed in the introduction section that currently there is no data to support the difference in 289 mechanism and degree of toxicity of aminoglycosides [31], investigation of Juan et al., that GM causes"

Lines 344-345 " Another reason may be dose of the oil that may have 344 been chosen less than enough to incite minimum effective concentration "

The word "witnessed" used to describe histopathological aspect should be changed (example with certify etc) and also word "exhibition" should be changed with a sinonimous.

At the final of the manuscript you should write about the limitation of the study, eg.

Chromatographic assay instead of semiquantitative determination for Phytochemical Screening etc.

The conclusion should be focused on your own results, like peanut extract showed better nephroprotective results than oil etc.

Author Response to Report

We would like to thank you for your careful and thorough reading of this manuscript as well as for the thoughtful comments and constructive suggestions, which help to improve the quality of this manuscript. We have carefully edited the manuscript according to your inputs. We truly hope that the revised manuscript is clear to follow. The response and amendment for each comment are as below.

Corrections should be done especially in lines:

Line 265 3.5 "Effect on Histopathology" should be changed with Histopathological aspects

Thank you for the suggestion- this has been changed as per the suggestion

Line 194 where comma is missing

Thank you- the coma has been added

Line 218" Serum urea plays an important role in the nephrotoxicity [24]an increase in serum level of urea is mainly

Thank you- this has been addressed

Lines 289-290 " As discussed in the introduction section that currently there is no data to support the difference in 289 mechanism and degree of toxicity of aminoglycosides [31], investigation of Juan et al., that GM causes"

Thank you- this has been addressed

Lines 344-345 " Another reason may be dose of the oil that may have 344 been chosen less than enough to incite minimum effective concentration "

Ans-Thank you- this has been corrected

The word "witnessed" used to describe histopathological aspect should be changed (example with certify etc) and also word "exhibition" should be changed with a sinonimous.

Thank you for the suggestion- the synonyms has been added

At the final of the manuscript, you should write about the limitation of the study, eg.

Chromatographic assay instead of semiquantitative determination for Phytochemical Screening etc.

Thank you- section 3.6 has been added to highlight the limitations of this study

The conclusion should be focused on your own results, like peanut extract showed better nephroprotective results than oil etc.

Ans- Thank you-the conclusion has been rewritten as per the reviewers guidelines

