Review Form 3

Journal Name:	**Journal of Applied Life Sciences International**
Manuscript Number:	**Ms_JALSI_121672**
Title of the Manuscript:	**Phytochemical Characterization and Investigation of Anthelminthic, Antidiabetic, and Toxicological Effects of Polyscias scutellaria**
Type of the Article	

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PART 1: **Review Comments**

Compulsory REVISION comments	**Reviewer's comment**	**Author's Feedback** *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.	It was reported by WHO that diabetes was a direct cause of 1.5 million deaths last 2019. Helminth infections are still considered endemic in many low- and middle-income families. The topic of the manuscript is of importance however, the authors were not able to establish the significance of the study in the manuscript. The rationale for testing two pharmacologic properties, anthelmintic and antidiabetic, was not also mentioned.	
Is the title of the article suitable? **(If not please suggest an alternative title)**	The title should identify the variables under investigation. Since a specific extract and plant part was utilized, it is recommended to include them in the title. The word "investigation" serves no purpose and should be avoided. Alternative title: "Phytochemical Characterization, and Anthelmintic, Antidiabetic, and Toxicological Activities of *Polyscias scutellaria* Leaf Extract"	
Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.	Introduce diabetes and parasitic disorders. These health problems under investigation should be discussed briefly in the abstract. The main objective of the study was not stated. Description of the methods used were too long. Suggestion is to just mention the name of the methods used. Rational order of testing should be followed. For example, the toxicologic test should be mentioned prior to the antidiabetic and anthelmintic tests. Application of the results of the study should be corrected as acute toxicologic studies are not used to reduce "drug intoxication". It is used to determine the safety and possible adverse effects of the plant being investigated. Description of the results are too long and should be reduced. Please limit the abstract to 250-300 words.	
Are subsections and structure of the manuscript appropriate?	The subsections are appropriate, however, here are some recommendations under Methodology: 1. 3. *In-vitro* Experiment 2. 3.1 Adult Worm Motility Inhibition Test 3. 4. *In-vivo* Experiments 4. 4.1 Experimental Animals 5. 4.2 Acute Toxicity Test 6. 4.3 Antidiabetic Test	
Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.	The manuscript titled demonstrates sufficient scientific robustness and technical soundness. The study is methodologically appropriate but requires a detailed phytochemical screening. Employing appropriate statistical analysis is needed to ensure the validity of the findings. The presentation of results, underscores the manuscript's scholarly value. Although minor presentation issues, such as italicizing foreign terms, need addressing, they do not compromise the scientific integrity or the overall quality of the work. To further enhance the manuscript, a more detailed discussion of the anthelmintic activity should be included to provide a complete assessment of the extract's efficacy.	
Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form. **-**	I find the references listed are lacking. Some references cited are not related to the study. Reference list entries are also not arranged alphabetically. It is recommended that the entries be alphabetized by the last name of the first author of each work. Here are some suggestions: Naglaa S. Ashmawy, Haidy A. Gad, Mohamed L. Ashour, Sherweit H. El-Ahmady, Abdel Nasser B. Singab, The genus Polyscias (Araliaceae): A phytochemical and biological review, Journal of Herbal Medicine, Volume 23,2020,100377,ISSN 2210-8033, https://doi.org/10.1016/j.hermed.2020.100377. Budiono, Budiono & Budi Pertami, Sumirah & Kasiati, Kasiati & Herawati, Tutik & Pujiastuti, Nurul & Arifah, Siti & Fitri Atho'illah, Mochammad. (2023). Polyscias scutellaria Aqueous Leaves Extract	

	Increases Insulin Levels and Improves Mammary Gland Histology in Lactating Rats. The Indonesian Biomedical Journal. 15. 333-8. 10.18585/inabj.v15i4.2425. Ishnava, K.B., Konar, P.S. In vitro anthelmintic activity and phytochemical characterization of *Corallocarpus epigaeus* (Rottler) Hook. f. tuber from ethyl acetate extracts. *Bull Natl Res Cent* 44, 33 (2020). https://doi.org/10.1186/s42269-020-00286-z Kujur RS, Singh V, Ram M, Yadava HN, Singh KK, Kumari S, Roy BK. Antidiabetic activity and phytochemical screening of crude extract of Stevia rebaudiana in alloxan-induced diabetic rats. Pharmacognosy Res. 2010 Jul;2(4):258-63. doi: 10.4103/0974-8490.69128. PMID: 21808578; PMCID: PMC3141138. Mumed HS, Nigussie DR, Musa KS, Demissie AA. *In Vitro* Anthelmintic Activity and Phytochemical Screening of Crude Extracts of Three Medicinal Plants against *Haemonchus Contortus* in Sheep at Haramaya Municipal Abattoir, Eastern Hararghe. J Parasitol Res. 2022 Jun 28;2022:6331740. doi: 10.1155/2022/6331740. PMID: 35800037; PMCID: PMC9256452. Salehi B, Ata A, V Anil Kumar N, Sharopov F, Ramírez-Alarcón K, Ruiz-Ortega A, Abdulmajid Ayatollahi S, Tsouh Fokou PV, Kobarfard F, Amiruddin Zakaria Z, Iriti M, Taheri Y, Martorell M, Sureda A, Setzer WN, Durazzo A, Lucarini M, Santini A, Capasso R, Ostrander EA; Atta-ur-Rahman; Choudhary MI, Cho WC, Sharifi-Rad J. Antidiabetic Potential of Medicinal Plants and Their Active Components. Biomolecules. 2019 Sep 30;9(10):551. doi: 10.3390/biom9100551. PMID: 31575072; PMCID: PMC6843349. Melesie Taye G, Bule M, Alemayehu Gadisa D, Teka F, Abula T. In vivo Antidiabetic Activity Evaluation of Aqueous and 80% Methanolic Extracts of Leaves of *Thymus schimperi* (Lamiaceae) in Alloxan-induced Diabetic Mice. Diabetes Metab Syndr Obes. 2020 Sep 15;13:3205-3212. doi: 10.2147/DMSO.S268689. PMID: 32982351; PMCID: PMC7501980.	

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Minor REVISION comments **Is the language/English quality of the article suitable for scholarly communications?**	Yes, the language and English quality of the article are generally suitable for scholarly communications. The manuscript is well-written and clear; however, there are a few minor errors, such as the failure to italicize foreign words, that should be addressed to enhance the overall presentation. These corrections can be easily made and do not detract significantly from the readability or scholarly value of the work.	
Optional/General comments oup	**Introduction** "Furthermore, phytochemicals have long been used to treat a wide range of illnesses and have been shown to prevent the transcription and reproduction of viruses. In reality, Western countries consume half of all medications that are produced from plants [5]. Plant-derived products are used to create antivirals because they are less toxic and have a lower potential for resistance development. Moreover, various advantageous new drug delivery systems (NDDS) may be used to enhance the therapeutic potential of physiologically active phytochemicals [6]. Research collaborations between allopathic medicine and medicinal systems like naturopathy and Ayurveda, which often use naturally produced compounds and phytochemicals, are also being promoted. It is anticipated that this partnership will improve knowledge of how to include natural materials in wound care and other therapeutic domains [7]." These sentences do not add value and creates confusion and should be deleted. There is too much focus on phytochemicals. Other variables of the study were not introduced. The research gap was not discussed. "The historical use of *P. scutellaria* for body odor treatment indicates its antibacterial characteristics. The hypothesis is based on the discovery that human axilla microbiota transforms odorless body secretions into volatile odorous molecules that cause body odor." These sentences are not related to the topic and should be deleted. Basis for studying the antidiabetic and anthelmintic properties of the plant was not established. **Materials and Methods** *Phytochemical Screening Test*: Method of qualitative screening for the presence of phytochemicals was not discussed. *Experimental Animals* Use a third person point of view to describe the laboratory animals and the conditions use *Experimental Design* Change format of the experimental design. Paragraph forms for treatment designs are not advisable. Group I: Normal control + physiological saline (without any drug treatment); Group II: Diabetic control (alloxan-injected mice) + physiological saline; Group III: Diabetic mice (alloxan injected) treated with 0.025 Insulin units (1U/kg BW); Group IV: Diabetic mice (alloxan injected) treated with 0.075mg Glibenclamide (3mg/kg BW); Group V: Diabetic mice (alloxan injected) treated with physiological saline (48.4mg/kg BW); Group VI: Diabetic mice (alloxan injected) treated with physiological saline (93.5mg/kg BW); Group VII: Diabetic mice (alloxan injected) treated with physiological saline (180.9mg/kg BW); Group VIII: Diabetic mice (alloxan injected) treated with MEPSL (350 mg/kg BW). There is only one treatment group. There is no low.mid. and high dose but the alloxan-injected treated with physiological saline has 3 groups (Group V, VI, and VIII). *Acute Toxicity Test*: Arrangement of the test was already mentioned above. Toxicity test should be before the anti-diabetes test. *Statistical Analysis*: Mean and standard deviation cannot be used to draw a conclusion. Recommendation: The difference in blood glucose level and body weight between groups of mice maybe analyzed by one-way analysis of variance (ANOVA) with Tukey's Honestly Significant Difference (Tukey HSD) *post hoc* test. Identify the software to be used. Hypothesis was not stated. Recommendation is to consider the results statistically significant if $p < 0.05$. **RESULTS** *Anthelmintic Activity* The table legend states, "Time Taken for Paralysis" and "Time Taken for Death". Since 20 worms were used per group, please adjust the results to indicate the "average" or use "±".	

	No explanation of the anthelmintic results was found in the manuscript. *Acute Toxicological Activity* Arrangement of the results was already mentioned above. Results of the toxicity test should be before the anti-diabetes test. **DISCUSSION** "In Pharmacological study, the mechanism of action of anthelmintic drug is too absolute. Only a little amount of studies can precisely determine the anthelmintic's primary mechanism of action." – Please rephrase since the statement is confusing. What does absolute mean? For the discussion of the antidiabetic results, a statistical method of analysis (please refer to my comment on statistical analysis above) should be conducted to determine if the antidiabetic effects of the plant extract are comparable to the standard, Glibenclamide. **CONCLUSION** Conclusion briefly mention the phytochemicals present in the plant extract (1 sentence). It should state the results of the anthelmintic activity (1 sentence) and should include the if to accept or reject the null hypothesis in the antidiabetic activity (1 sentence). A recommendation was also not seen in the conclusion.	

PART 2:

	Reviewer's comment	**Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

Reviewer Details:

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