Reviewer's report

Title: Correlation of antiangiogenic, antioxidant and cytotoxic activities of some Sudanese medicinal plants with phenolic and flavonoid contents

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Reviewer: Devaraj M. M

Reviewer's report:

The authors describe the screening of medicinal potentials of some Sudanese medicinal plants in the manuscript entitled “Correlation of antiangiogenic, antioxidant and cytotoxic activities of some Sudanese medicinal plants with phenolic and flavonoid contents”.

Overall, this is an interesting work which provides new insight and scientific proofs, up to some extent, about the traditionally claimed medicinal uses of the studied plants of Sudan. The study is well conducted and the paper clearly written and potentially acceptable for publication in the Journal of BMC Complementary and Alternative Medicine after minor revision.

Minor Essential Revisions

Abstract:
1. In result section, page No. 13, line No. 14:- The total flavonoid content estimated in N. glauca is not clear mentioned. Which one is right? Whether 88.1 or 77.083%?
2. The authors are advised to include at least 6 key words.

Background:
3. Page No. 4, line No. 7-9:- In conventional cancer chemotherapy……side effects and chemoresistance. Rewrite the sentence.

Methods:
4. In Plant Material section, page No. 7, line No. 8, delete “for” in the sentence “Voucher specimens were deposited ….”
5. Authors are advised to maintain consistency in the style of units (particularly mL or ml and mg mL-1 or mg/ml). Use the journal’s standard style consistently throughout the manuscript.
6. In the methodology of Rat aortic ring assay (page No. 9, line 24), authors have mentioned that the % inhibition of blood vessels and IC50 were calculated, however, the results presented are only % inhibition of blood vessels. Therefore, it is advised to either provide the IC50 values or delete the statement from the methodology.
7. In the protocol of Cytotoxicity assay (page No. 10, lines 10 and 13), give a
space between numerical value and the units.

8. In the protocol of Cytotoxicity assay (page No. 10, line 14) write singular form for “salts”.

9. Authors are advised to use consistent statistical parameters in the entire data analysis. Particularly, it is advised to use either SD or SEM consistently throughout the data presentation.

10. In the protocol of “Determination of total phenols” (page No. 10, line 22), include the name of the instrument used to read the absorbance at 725 nm.

11. In the protocol of “Determination of total flavonoids” (page No. 11, line 8), it is advised to authors not to start a sentence with numerical.

12. In the protocol of “DPPH scavenging effect” (page No. 12, line 4), include the name of the instrument used to read the absorbance at 517 nm.

13. In MTT assay, it is not clear which concentration was used by authors to screen the cytotoxicity of the extracts. In methodology (Page No. 10, line 8) authors mentioned the screening concentration was 100 µg/ml whereas, in results (Page No. 13, line 16) the authors mentioned the concentration was 50 µg/ml. It is advised to clarify it in the manuscript.

Results:

14. In Anti-proliferative effect of the extracts (page No. 14, line 14) insert “of” in between “the pseudopodial projections” and “the cells”.

15. Page No. 16, line 1, change the word “phenolic” to “flavonoid”.

Major Compulsory Revisions:

Background:

16. Authors are strongly advised to include the botanically authenticated Author’s names with the plants at their first use in the text of manuscript. Most appropriately, on Page No. 6, line No. 14 – 17.

Method:

17. In Experimental animals section, page No. 7, line No. 22, authors have used only the male rats in the experiment, why not female or both sexes.? If the reason is technical, then authors are advised to include it in the manuscript in the same paragraph.

Discussion:

18. Authors have justified the significant anti-angiogenic and cytotoxic activities of polar extracts showing that the polar extracts have rich contents of phenols, however, the results showed that the hexane extracts are deprived of phenols (page No. 14, line 24). How do the authors justify the significant anti-proliferative effect of all the hexane extracts, although the hexane extracts are deprived of phenols?

19. In discussion, authors have not established the physio/pharmacological
correlation between angiogenesis and cytotoxicity. As these assays were conducted in the present study, authors are advised to justify the relationship between the assays performed in the study.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I do not have any kind of competing interests.