

# Response to Article “Evaluation of the Antioxidant and Wound Healing Properties of 80% Methanol Extract and Solvent Fractions of the Leaves of *Vernonia auriculifera* Hiern. (Asteraceae)” [Letter]

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## Dear editor

We are interested to read the latest “Evaluation of the Antioxidant and Wound Healing Properties of 80% Methanol Extract and Solvent Fractions of the Leaves of *Vernonia auriculifera* Hiern. (Asteraceae)” in the *Journal of Clinical, Cosmetic and Investigational Dermatology* 2023;16:279–299.<sup>1</sup>

The study might improve with a few little adjustments. According to Abubakar et al<sup>2</sup> to produce high-quality research findings, the first and most crucial step is to prepare medicinal plants for study. It requires extracting and evaluating the quantity and quality of bioactive components before the process starts. Possibly hazardous contaminants and residues need to be addressed next following WHO criteria for herbal medicines. Contaminants and residues may come from a variety of sources, and their possible visibility at various production phases is also a concern. Some of them are viewed as inescapable contaminants or residues from herbal medications. The three kinds of contaminants that can be identified in herbal remedies are physical, chemical, and biological. A number of agrochemicals and organic solvents may have considerable residues in some herbal medicines.<sup>3</sup> To complete the processes in the near future for the preparation of medicinal plants, it may also be evaluated to conduct the test for possibly hazardous pollutants and residues in herbal medicine.

The four stages of wound healing—hemostasis, inflammation, re-epithelialization, and remodeling—require a complicated interplay of local mesenchymal and epithelial cells to be completed.<sup>4</sup> In this study, histopathological analysis on examination of inflammatory cell infiltration was carried out using general staining using hematoxylin-eosin (H&E). According to previous research, early and late periods of inflammation are distinguished in the healing of typical wounds. Mononuclear cell-rich and neutrophil-rich infiltrates are representatives of the former and latter, respectively, for neutrophil identification uses an anti-neutrophil antibody, and for macrophage, identification uses an anti-macrophage-3 antibody.<sup>5</sup>

It would be better to analyze growth factors to examine the inflammatory response including tumor necrosis factor  $\alpha$  (TNF- $\alpha$ ) and interleukin 6 (IL-6). According to Lei et al, growth factors are secreted into injured regions to control cellular reactions during the wound healing process involving lowering the inflammatory response, re-epithelialization, and enhancing angiogenesis.<sup>6</sup> Here, it can be suggested to carry out specific staining using immunohistochemical or immunofluorescence as suggested above in the later studies.

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## Disclosure

The authors declare no conflicts of interest in this communication.

## References

1. Ashenafi E, Abula T, Abay SM, Arayaselassie M, Sori M. Evaluation of the antioxidant and wound healing properties of 80% methanol extract and solvent fractions of the leaves of *Vernonia auriculifera* hiern. (Asteraceae). *Clin Cosmet Investig Dermatol*. 2023;16:279–299. doi:10.2147/CCID.S393379
2. Abubakar A, Haque M. Preparation of medicinal plants: basic extraction and fractionation procedures for experimental purposes. *J Pharm Bioallied Sci*. 2020;12(1):1–10. doi:10.4103/jpbs.JPBS
3. World Health Organization. *WHO Guidelines for Assessing Quality of Herbal Medicines with Reference to Contaminants and Residues*. World Health Organization; 2007.
4. Yang Z, Hu X, Zhou L, et al. Photodynamic therapy accelerates skin wound healing through promoting re-epithelialization. *Burn Trauma*. 2021;9:1–12. doi:10.1093/burnst/tkab008
5. Nakajima Y, Mukai K, Rahayu HS, et al. Cold plasma on full-thickness cutaneous wound accelerates healing through promoting inflammation, re-epithelialization and wound contraction. *Clin Plasma Med*. 2014;2(1):28–35. doi:10.1016/j.cpm.2014.01.001
6. Lei L, Wang X, Zhu Y, Su W, Lv Q, Li D. Antimicrobial hydrogel microspheres for protein capture and wound healing. *Mater Des*. 2022;215:110478. doi:10.1016/j.matdes.2022.110478

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