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Correspondence

Letter to Editor: Antiviral activities of ginseng and its potential benefit against monkeypox virus: A mini review



Dear Editor,

We would like to extend our heartfelt gratitude for publishing our article “Antiviral activities of ginseng and its potential and putative benefits against monkeypox virus: A mini review” [1]. Our article has attracted the attention of the scholarly community, which may potentially lead to discussions and debates, we have recognized that our article might lead to some perplexity among the academics. Therefore, we aim to address a few questions and concerns to enable clear and constructive scholarly conversation. Our article emphasized the significance of ginseng and its antiviral properties which could be a potential adaptogenic agent for the prevention of monkey pox infection, in conjunction with other medicines and vaccines. Ginseng and its extracts have been shown to strengthen the immune system in a number of ways that are advantageous when fighting pathogens such as viruses. Multiple *in vitro* and *in vivo* studies have demonstrated that ginseng and ginseng derivatives can protect the host against a variety of virus infections [2]. In addition, ginseng has been shown to improve both innate and adaptive immunity. Previously, ginseng has been employed in China as a smallpox vaccine against the variola virus, a member of the same family as monkeypox virus [3]. Thus, ginseng’s potential usefulness in treating monkey pox is greatly anticipated, however, *in vitro* and *in vivo* experiments are required to better comprehend its mode of action (M/A) and its effects, possibly, few computational studies would be advantageous at this stage. Due to their rapid spread and ability to cause widespread illness and mortality, viral diseases pose a significant threat to global public health. The COVID-19, Ebola virus, influenza, and HIV are examples of viral diseases with a global impact. Since there has not been much progress in developing medications to combat viruses, in this situation, the adaptogenic herbal products could be significant alternatives. Finally, we believe ginseng is a potential candidate for alternative treatments for viral disease including monkeypox due to its immunomodulatory and adaptogenic capabilities.

References

- [1] Chandra Das R, Ratan ZA, Rahman MM, Runa NJ, Mondal S, Konstantinov K, Hosseinzadeh H, Cho JY. Antiviral activities of ginseng and its potential and putative benefits against monkeypox virus: a mini review. *J. Ginseng Res.* 2023 in press.
- [2] Im K, Kim J, Min H. Ginseng, the natural effectual antiviral: protective effects of Korean Red Ginseng against viral infection. *J. Ginseng Res.* 2016;40(4):309–14.
- [3] Potenza MA, Montagnani M, Santacroce L, Charitos IA, Bottalico L. Ancient herbal therapy: a brief history of Panax ginseng. *J. Ginseng Res.* 2023;47(3): 359–65.

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