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Wound healing activity of *neocarya macrophylla* seed oil in wistar rats

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Neocarya macrophylla seed oil (NMSO) which was evaluated for wound healing activity was examined for the presence of various phytoconstituents following standard methods. Antimicrobial activity was evaluated by testing the extracts on selected drug resistant bacteria and fungi using agar technique of pour plate and surface plate dilution. Wound healing activity of NMSO was investigated by formulating a dosage of 5 % and 10 % of NMSO in paraffin. 21 Wistar rats shared into three groups of 7 rats each were properly fed and given free access to water for a period of 21 days. The weight of the rats was taken every four days. Wound healing activity of NMSO was evaluated by measuring the wound area (mm²) and percentage of wound closure on the 4th, 8th, 12th, 16th and 20th day. The wound epitheliasation was determined from the 16th to 20th of the experiment. Histopathological and haematological analyses of the rats' skin tissues, liver, kidney, heart, lung and spleen and the blood samples were carried out respectively.

Phytochemical analysis showed that NMSO contain terpenoids and glycosides. NMSO inhibited the growth of *E. coli*, *P. aeruginosa*, *S. aureus*, *B. subtilis*, *C. albicans* and *A. niger* at 12.5 % and it showed maximum activity against *E. coli* giving a zone of inhibition diameter of 26.00±0.00. There was increase in the weight of the control and test rats throughout the period of study. Group 2 rats treated with 5 % NMSO gave a faster and better epitheliasation time than the control rats. There was no significant difference between blood parameters of the control and test rats. The rats were not anaemic; NMSO had no adverse effect on the blood parameters of the rats. Histopathological examination of the skin tissue revealed the presence of a mature granulation tissue in almost all the depth of the dermis for excision wound model.

N. macrophylla seed oil healed the wound created on Wistar rats at a faster time than the control ointment; it seemed suitable for adoption into modern health care.

Keywords: *N. macrophylla*; phytochemical, epitheliasation time; histopathological, wound healing

Biography

Ibironke Adetolu Ajayi obtained her Ph. D in Industrial Chemistry from University of Ibadan, Ibadan, Nigeria in 2002. She is presently a Senior Lecturer in the same university. She has published more than 65 papers in reputed journals and has been serving as reviewer of repute journals.

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