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Wound healing effect of *Flabellaria paniculata* leaf extractsJoseph A.O. Olugbuyiro^{a,*}, K.A. Abo^b, O.O. Leigh^c^a Department of Chemistry, Covenant University, P.M.B. 1023, Km 10 Idiroko Road, Canaanland, Ota, Ogun, Nigeria^b Department of Pharmacognosy, University of Ibadan, Ibadan, Nigeria^c Department of Veterinary Surgery & Reproduction, University of Ibadan, Ibadan, Nigeria

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ABSTRACT

Aim of the study: This study evaluated wound healing activity of the chloroform and aqueous fractions of the methanolic extract of *Flabellaria paniculata* leaf on infected wounds in rats as a follow up to an initial study of the crude extract.

Materials and methods: Wounds were inflicted on Wistar rats using excision model. Local infection was introduced into rat abdominal wounds with *Staphylococcus aureus* and *Pseudomonas aeruginosa* using a 10⁸ cells/ml inoculum. Rate of wound healing was assessed by contraction and period of epithelization. **Results:** Chloroform fraction exhibited significant wound healing potency ($p < 0.05$) as compared with controls. The test drug achieved 100% wound contraction on day 14 in non-infected group, on day 16 in *Staphylococcus aureus* infected group and on day 18 in *Pseudomonas aeruginosa* group.

Conclusions: Chloroform extract of *Flabellaria paniculata* proves to be a potential anti-infective and wound healing agent. Its *in vitro* antibacterial and *in vivo* wound healing activities are in good agreement with the local medicinal use of the plant for skin diseases and sores.

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1. Introduction

Flabellaria paniculata Cav (Malpighiaceae) is a climbing shrub with grey silky branches and the leaves are over 5 in. × 4 in., opposite, ovate to ovate-orbicular. It is a herb indigenous to the Tropical Western African. It is known in Yoruba as "Ajidere" (Burkill, 1995). This species was chosen from a collection of medicinal plants obtained from traditional healers. The plant is used ethnobotanically for the treatment of skin infections, wounds. In Southern Nigeria, the leaves are applied to wounds and sores (Irvine, 1961). In the Mampong area of Ghana, the root ground up with pepper (i.e. "Wusa") and the dried heads of cobra, mamba and viper is a vaccine used for snake bite (Ampofo, 1983). In Western Nigeria the plant is claimed to be used for dysentery. There is very scanty literature on this species. As a follow up to an initial antibacterial study on the methanol leaf extract (Abo and Olugbuyiro, 2004), we now report here the wound healing effect of the chloroform and aqueous fractions of *Flabellaria paniculata* on wounds inoculated with *Staphylococcus aureus* and *Pseudomonas aeruginosa*.

2. Materials and methods

2.1. Test material

Fresh leaves of *Flabellaria paniculata* were collected at Ago-Iwoye in Ogun State and authenticated at the Forestry Research Institute of Nigeria (FRIN), Ibadan, where herbarium specimen had been deposited as FHI 106122. 100 g of dried (45 °C) *Flabellaria paniculata* were powdered and macerated with 70% methanol. The filtrate was concentrated to dryness *in vacuo* and weighed (15.5%). The extract was later partitioned into petroleum ether, chloroform and aqueous fractions. Petroleum ether fraction was screened out since it proved inactive in the previous anti-infective test (Abo and Olugbuyiro, 2004). Chloroform and aqueous fractions were kept in refrigerator for wound healing test.

2.2. Animals

Adult male Wistar rats (250–300 g) were used. They were obtained from the animal house in the Department of Physiology, University of Ibadan, Ibadan. They were housed individually in cages, fed with standard rat pellets and water was allowed *ad libitum*. All animals were cared for by a veterinarian in accordance with the "Guide for the Care and Use of Laboratory Animals" (NIH publication 85-23, revised 1985).

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