

RESEARCH ARTICLE

Potential Antiseptic of *Rhodomyrtus tomentosa* leaves extract on Healing wound in Male Wistar rats

**Endang Sri Purwanti Ningsih¹, Noorlaila¹, Muhammad Ikhwan Rizki²,
Windy Yuliana Budianto³**

¹Department of Nursing, Health Polytechnic of Health Ministry Banjarmasin, Indonesia.

²Department of Pharmacy, Faculty of Science, Universitas Lambung Mangkurat, Banjarbaru.

³Department of Pediatric Nursing, Faculty of Medicine, Universitas Lambung Mangkurat,
Jl. Ahmad Yani Km.36, Banjarbaru 70712, Indonesia.

*Corresponding Author E-mail: eenspn75@gmail.com

ABSTRACT:

Background: The process of wound healing is influenced by various factors such as age, hormones, and wound care. Wound care is done to accelerate wound healing which can be done by various methods, one of them is traditional care. Traditional wound care can use medicinal plants. *Rhodomyrtus tomentosa* is a medicinal plant that has an antioxidant, anti-inflammatory, antitumor and antibacterial content. Thus this study aims to evaluate the effectiveness of the antiseptic solution of the *Rhodomyrtus tomentosa* leaf extract on wound healing in male Wistar rats. **Method:** this research is pure experimental research with post test only control group design. Thirty male white rats were divided into five groups, namely negative control, positive control, *Rhodomyrtus tomentosa* leaf extract 15%, 30%, and 60%. *Rhodomyrtus tomentosa* leaf extraction was carried out by maceration method with 70% ethano solvent. The extraction results are divided into 3 concentrations (15%, 30% and 60%). The wound healing process was evaluated by measuring the length of the wound manually from 0 to 10 days in each group. Meanwhile, the number of fibroblast cells was calculated through hematoxylin eosin (HE) staining and observed using an Olympus CX41 microscope with a 10x magnification and objective lens magnification in 3 fields. **Result:** There was a significant difference in the reduction in wound length ($p < 0,000$) between the five experimental groups (*Rhodomyrtus tomentosa* leaf extract solution 15%, 30% and 60%, negative control and positive control. Solution of *rhodomyrtus tomentosa* leaf extract accelerated the increase in the number of fibroblasts compared to the negative control group ($p = 0.003$), but did not make a difference ($p = 0.403$) with the positive control group. *Rhodomyrtus tomentosa* leaf extraction solution had the same microscopic effect on the number of fibroblasts with a positive control group given 0.9% NaCl solution. **Conclusion:** There was a significant difference in the number of fibroblasts between all groups, but no difference in wound healing length.

KEYWORDS: Wound Healing, *Rhodomyrtus tomentosa*, Wound Length, Fibroblast.

INTRODUCTION:

Wound healing is a physiological process of body that runs dynamically, continuously, overlaps, and is programmed appropriately. The wound healing process involves many body cells and occurs in 3 phases, as inflammatory, proliferation and maturation (remodeling) phases^{1,2}.

This process is influenced by many factors such as local and systemic factors. Local factors are factors that directly affect the characteristics of the wound. This factor consists of oxygenation and infection. Meanwhile, systemic factors are factors that indirectly affect local factors. The systemic factors include age, hormones, stress, disease, and medication (treatment)^{3,4}.

Various wound care methods have been widely used locally and systemically to help the wound healing process. Different agents used for wound healing include antibiotics and antiseptics, antibacterial agents (hydrogen peroxide, eusol and collagenase ointments, wound healing promoters), several substances (tissue extracts,