

## Abstract

The skin is a vital outer layer that serves as protection. Once the protective layer is disrupted, for example the formation of wounds due to outer layer damage, it may increase the likelihood of contraction skin infection, which is a global burden. When open wounds are in contact with microorganisms, it allows attachment and proliferation, resulting in the development of biofilms. Antibiotics are usually the first-line treatments when addressing wounds, however, with the increasing amount of resistant-strain bacteria developing, treatment became more difficult. Medicinal plants are known to contain phytochemical constituents that exert therapeutic and pharmacological effects. This systematic review aims to evaluate studies on medicinal plants that have exerted both antibiofilm and wound healing activities with their phytochemical constituents in *In Vitro* and/or *In Vivo* models. A total of 2,686 publications were identified between 2013 and 2023, where only five publications (0.18%) passed the rigorous inclusion and exclusion criteria, yielding data of five plant species that examined a total of 41 MIC values against *Pseudomonas aeruginosa* (26.8%), *Escherichia coli* (17.1%), *Staphylococcus aureus* (12.2%), *Staphylococcus lugdunensis* (9.8%), MRSA (17.1%), and MDR-*Pseudomonas aeruginosa* (17.1%). Four out of the five studies utilized *In Vivo* wound models, including infection-induced, linear, or circular excision models, whereas only one utilized wound scratch assay (*In Vitro*) to assess wound healing activity. The medicinal plants include *Buchanania lanzan*, *Capsicum annum*, *Sanguisorba officinalis*, *Paeonia tenuifolia*, and *Achillea fragrantissima*, where 40% were extracted for their aerial parts, 40% were extracted for their roots, and 20% whole plant extract utilizing methanolic, ethanolic, and aqueous extraction type. This review allows current understanding of antibiofilm and wound healing activity from medicinal plants.

Keywords: Medicinal Plant, Wound Healing, Antibiofilm, Phytochemical OR Phytochemistry