

**Background** Bacterial infections cause by improper cleaning and treating of wound is one of the growing concerns in wound management as it leads to impaired wound healing and in worse cases, death. Topical agents like gel patch containing antibacterial and/or antifungal formulation is of great contribution to minimize this serious problem.

**Objectives** This study aims to develop berberine-polyvinyl alcohol bounded gel patch and assess its wound healing capacity.

**Methods** Berberine and polyvinyl alcohol were mixed in different ratio to form product of gelatinous consistency. This product was subjected to Kirby-Bauer diffusion assay to test its microbial inhibiting activity. In-vivo assay was also done to determine its capacity to treat wound infected by gram(+) bacteria *Staphylococcus aureus*. Wound healing activity was evaluated by excision wound model in Wister rats.

**Result** The best ratio of berberine-pva gel patch was determined to be 4% (w/v) that exhibit inhibiting activity against gram(+) bacteria *Staphylococcus aureus*. The percentage wound closure at 10 days for the different treatment groups were as follows: 92.18% for the Berberine-PVA gel – treated animals, 51.91% for the PVA gel – treated animals and 81.24% for the positive control. Moreover, bacterial count for Berberine-PVA gel was observed to decrease greatly compared with that of the positive control.

**Conclusion** These findings suggest that berberine-PVA gel patch could be an alternative patch with wound healing activity against gram(+) bacteria comparable with conventional patch available in the market.

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**DEVELOPMENT OF ANTIBACTERIAL AND ANTIFUNGAL  
BERBERINE-PVA GEL PATCH AND ITS IN-VIVO ASSAY  
AGAINST STAPHYLOCOCCUS AUREUS INFECTED WOUND**

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