

## **Antibacterial activity of fingerroot (*Boesenbergia rotunda*) extract against acne-inducing bacteria**

### **ABSTRACT**

Fingerroot (*Boesenbergia rotunda*) is a medicinal and culinary herb in the ginger family (Zingiberaceae). It has been used for beauty and skin treatment, however, antibacterial activity of *B. rotunda* extract against acne-causing bacteria has not been investigated. The aim of this study is to analyse the antibacterial activity of *B. rotunda* extract against acne-inducing bacteria; *Propionibacterium acnes*, *Staphylococcus aureus*, and *Staphylococcus epidermidis*. The methanolic extract of *B. rotunda* was tested for antimicrobial activity against acne-causing bacteria in term of disk diffusion, minimum inhibitory concentration (MIC), minimum bactericidal concentration (MBC) and kill-time curve using the standard methods of Clinical and Laboratory Standard Institute (CLSI). The *B. rotunda* extract has inhibited the growth of *P. acnes* ATCC6919, *P. acnes* clinical strain, *S. epidermidis* KCCM40003 and *S. aureus* KCCM12255 with MIC value of 0.63-, 0.63-, 0.31-, and 0.02 mg/mL, respectively. Moreover, MBC of *B. rotunda* extract was 1.25-, 1.25-, 0.63-, and 0.04 mg/mL on *P. acnes* ATCC6919, *P. acnes* clinical strain, *S. epidermidis* KCCM40003 and *S. aureus* KCCM12255, respectively. Time-kill curves analyses demonstrated that the bactericidal endpoint of *B. rotunda* extract on *P. acnes* ATCC6919, *P. acnes* clinical strain, and *S. aureus* KCCM12255 was 4× MIC after 4 h of incubation. Meanwhile, endpoint of *B. rotunda* extract on *S. epidermidis* was killed at 8×MIC after 0.5 h of incubation. The result show that *B. rotunda* extract have potent antibacterial activity against acne-inducing bacteria.

**Keyword:** Antibacterial; Acne; Fingerroot; *Boesenbergia rotunda*; Temukunci.