

PHYTOCHEMICAL SCREENING AND ANTIBACTERIAL  
ACTIVITY OF *Alpinia galanga* (Linn.) AND *Averrhoa*  
*billimbi* (Linn.) AGAINST PATHOGENIC  
HAND BACTERIA

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## ABSTRACT

### PHYTOCHEMICAL SCREENING AND ANTIBACTERIAL ACTIVITY OF *Alpinia galanga* (Linn.) AND *Averrhoa bilimbi* (Linn.) AGAINST PATHOGENIC HAND BACTERIA.

The transmission of pathogen can be caused by the physical contact between people, animals and objects. Handwashing with soap and water is the effective way to prevent spreading of germs and avoid diseases. Most of the soaps that were produced contains chemical compounds and researchers found that too much used of soaps can cause bacterial resistance instead of killing the bacteria. Many plants can act as remedies and can used for treatment in many types of diseases. *Alpinia galanga* (L.) known as “lengkuas” in Malay belong to Zingiberacea. *Averrhoa bilimbi* (L.) locally known as “Belimbing buluh” in Malaysia belongs to Oxalidaceae family. The aim of this study is to determine the phytochemical constituents, antibacterial activity, the MIC and MBC, and to identify the synergistic effect of *Alpinia galanga* (L.) and *Averrhoa bilimbi* (L.) against *S.aureus* and *E.coli*. The phytochemicals analysis of *Alpinia galanga* (L.) revealed the presence of alkaloids, saponins, carbohydrates and terpenoids while *Averrhoa bilimbi* (L.) showed the presence of tannins, saponins and carbohydrates by using ethyl acetate extraction solvent. *Alpinia galanga* (L.) have the susceptible antibacterial activity with zone of inhibition of 21 mm while *Averrhoa bilimbi* (L.) have the zone of inhibition of 18 mm. Both MIC and MBC values for *Alpinia galanga* (L.) are 6.25 mg/ml against *S.aureus*. The MIC values of *Averrhoa bilimbi* (L.) is 12.5 mg/ml while values of MBC is 100 mg/ml against *S.aureus*. However, both plant extracts showed no antibacterial activity against *E.coli*. The synergistic activity showed that the ratio of 20:80 (*Averrhoa bilimbi*: *Alpinia galanga*) showed the effective antibacterial activity, which is 25 mm zone of inhibition against *S.aureus*. Both combination of plants showed antibacterial activity against *E.coli* compared to extracts alone except for ratio 80:20 (*Averrhoa bilimbi*: *Alpinia galanga*).