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## THE EFFECT OF CINNAMOMUM BURMANNII WATER EXTRACTION AGAINST STAPHYLOCOCCUS AUREUS, ENTEROBACTER SPP., PSEUDOMONAS AERUGINOSA, AND CANDIDA ALBICANS: IN VITRO STUDY

 Bernadette Dian Novita, Silvia Sutandhio

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### ABSTRACT

Indonesian cinnamon (*Cinnamomum burmannii*) is a native plant of Indonesia that has a lot of potential. The most consumed part is the bark. This study aims to examine the antimicrobial effect of *Cinnamomum burmannii* bark extract on various types of pathogenic microbes, namely *Staphylococcus aureus*, *Enterobacter spp.*, *Pseudomonas aeruginosa*, and *Candida albicans*. An experimental study using a water extract (infusion) of *Cinnamomum burmannii* bark and a microbial test obtained from the Faculty of Pharmacy, Widya Mandala Catholic University, Surabaya. The antimicrobial effect test was carried out by the microdilution method in 96-well-microplate to determine the Minimum Inhibitory Level (MIC) and implantation on solid media to determine the Minimum Kill Rate (KBM). The MIC and KBM against *Staphylococcus aureus* were 625-1,250 ppm and 1,250-2,500 ppm, respectively. MIC and KBM for *Enterobacter spp.*, *Pseudomonas aeruginosa*, and *Candida albicans* were not found at the highest concentrations tested at 10,000 ppm. *Cinnamomum burmannii* extract can be used as a potential ingredient with antimicrobial effects, especially against Gram-positive bacteria. Future studies should pay attention to the quality of *simplicia*, particle size, and the most effective extraction methods extracting antimicrobial substances from *simplicia*.

### KEYWORDS

Antibacterial activity; water extraction of *Cinnamomum burmannii*; *Staphylococcus aureus*; *Pseudomonas aeruginosa*; *Enterobacter spp.*; *Candida albicans*

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