ABSTRACT

Natural raw materials have been used for human health for centuries. Because of their distinct chemical composition and structure, wood and its bark are among the most important raw materials. The inner bark has a strong defense mechanism, which is supported by phenolic compounds and may contain a variety of antimicrobial agents that can be extracted and used as a food preservative. This study was carried out to determine the antimicrobial properties of the bark of a native Papuan tree, *Kayu Bawang Gisikisik* (KB) and *Kayu Teh Kamlowele*n (KK) using different polarity solvent. The antimicrobial analysis was done using the disk-diffusion method with 5% and 10% concentration yield extract. The phythochemical that was analyses in this study were alkaloids, tannins, phlobatannins, saponins, flavonoids, terpenoids, and cardiac glycosides. The results show that increase in the polarity of the solvent increases KK extraction yield but not KB extraction yield. Most potential antioxidant activity was exhibited by 5% of KB ethyl acetate extract which had inhibition zone of 5.00 ± 1.41 mm and 5.50 ± 0.71 mm for *E. coli* and *S. aureus*, respectively. The phytochemical analysis showed that KK extract contained all the seven phytochemicals. While KB extract did not contain tannins and flavonoids. However, there was no relationship between the type of phytochemicals found in both tree bark samples and potential antimicrobial activity.

Keyword: *tree bark, extraction yield, different polarity solvent, phytochemical, antimicrobial, disk diffusion method.*