

ABSTRACT

ANTIBACTERIAL ACTIVITY OF *n*-BUTANOL-METANOL EXTRACT (1:1) OF *Streptomyces sp.* B10 FILTRATE FERMENTATION AGAINST *Mycobacterium tuberculosis* H37Rv

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Streptomyces is one of Actinomycetes genus that contributes most of its active metabolite as antibiotics. *n*-butanol extract of *Streptomyces sp.* B10 filtrate fermentation has been known to have antituberculosis activity. Thus, an initial test would be conducted in this study to analyse the antituberculosis activity of *n*-butanol-metanol (1:1) of *Streptomyces sp.* B10 filtrate fermentation. This study aimed to attest the antibacterial activity of extract against *Mycobacterium tuberculosis* H37Rv and to determine its Minimum Inhibitory Concentration (MIC). The antibacterial activity test was performed by agar diffusion method, using Middlebrook 7H10 solid medium. The suspension of bacteria and sample solution were inserted on Middlebrook 7H10 solid media in MC Cartney bottle, then the observation was done for three weeks and Ziehl-Neelsen staining was performed in the third week. The positive control used was Middlebrook 7H10 solid medium containing *Mycobacterium tuberculosis* H37Rv while the control used as a standard in this study was Rifampicin because it was first-line OAT (anti-tuberculosis drug). The results showed that the extract of *n*-butanol-methanol (1:1) of *Streptomyces sp.* B10 fermentation filtrate actively inhibits *Mycobacterium tuberculosis* H37Rv indicated by the absence of growth in the media and the absence of rod-shaped red colonies in microscopic observations. The minimum inhibitory concentration (MIC) in this study was 5.375 ppm.

Keywords: *Streptomyces sp.* B10, *Mycobacterium tuberculosis* H37Rv, antibacterial activity, Minimum Inhibition Concentration (MIC).