

ABSTRACT**EFFECTIVITY EVALUATION OF *Plumeria alba* EXTRACT AS
ANTIMICROBIAL AGAINST *Streptococcus pyogenes***

Introduction: Infection is one of the health issues which is caused by pathogenic microorganisms and one of the most common microorganism is *Streptococcus*. There are 616 pharyngitis cases that are caused by *Streptococcus pyogenes* worldwide. The disease can lead to other complications if it is not treated well. In addition, treatment using antibiotics has a risk of resistance. Therefore, it is necessary to develop research on herbals as treatment. The white Frangipani flower (*Plumeria alba*) is known to have antimicrobial activity against various microorganisms. Based on this background, the aim of this study is to determine the antimicrobial activity of *Plumeria alba* against *Streptococcus pyogenes* that can be observed through the MIC (Minimum Inhibitory Concentration) and MBC (Minimum Bactericidal Concentration).

Methods: This research was done through a true experimental method. Agar dilution method is used to determine the MIC and MBC. The concentrations used in this research are 250 mg/ml, 125 mg/ml, 62.50 mg/ml, 31.25 mg/ml, 15.63 mg/ml, 7.81 mg/ml, 3.91 mg/ml, 1.95 mg/ml, 0.98 mg/ml, positive control (+) and negative control (-).

Results: Through the observation of the research, the MIC cannot be determined. The value of MBC is 7.81 mg/ml which indicate the minimum concentration when there is zero growth of the bacteria colony.

Conclusion: Ethanol extract of the white Frangipani flower (*Plumeria alba*) has antimicrobial activity against *Streptococcus pyogenes*. In this *in vitro* study using agar dilution method, the MBC for *Streptococcus pyogenes* is at 7.81 mg/ml.

Keyword: *Plumeria alba* - *Streptococcus pyogenes* - pharyngitis - antimicrobial - agar dilution method.