

**ABSTRACT**

**Background :** Red ginger (*Zingiber officinale var. Rubrum*) has been known as an antibacterial that can inhibit the growth of certain bacteria. Some previous research showed that the red ginger contains various antibacterial compounds such as gingerol, geraniol, linalool, *limonene*, sequiterpen alcohol, and sitral. *Streptococcus pyogenes* was a bacteria that often cause pharyngitis in children and adults. In recent years, a series cases of *Streptococcus pyogenes* resistance to antibiotics have been found. Therefore, further research on natural substances that have an capability to inhibit the growth of *Streptococcus pyogenes* or even kill these bacteria is needed to prevent an increase in the number of bacterial resistance to antibiotics.

**Research objective :** Knowing whether the extract of red ginger (*Zingiber officinale var. Rubrum*) has antibacterial activity to inhibit the growth of *Streptococcus pyogenes* in vitro by using the dilution method.

**Methods of research :** This study was an experimental study that used *Streptococcus pyogenes* as sample bacteria. Red ginger (*Zingiber officinale var. rubrum*) made extract, then the extract was divided into 8 different concentrations. Antimicrobial activity test performed by dilution method on Mueller Hinton Broth. This methods consisted of two process, the first was serial dilution and the second was streaking on the blood agar plate. Furthermore, the results was analyzed descriptively with Minimal Inhibitory Concentration (MIC) and Minimum Kill Concentration (MBC). Replication experiments were performed 4 times.

**Result :** Minimal Inhibitory Concentration of red ginger extract against *Streptococcus pyogenes* could not be determined due to turbidity extracts have affected the turbidity of the solution dilution test results. Minimum Kill Concentration of red ginger extract against *Streptococcus pyogenes* was 20%.

**Conclusion :** The smallest concentration of extract of red ginger (*Zingiber officinale var. Rubrum*) that could kill *Streptococcus pyogenes* was 20%.

**Keywords :** Red ginger, *Zingiber officinale var. rubrum*, *Streptococcus pyogenes*, *Streptococcus*  $\beta$ -hemolytic group A, antibacterial, dilution, MIC, MBC.