

"N-HEKSAN EXTRACT CAPABILITY OF RED GINGER (*Zingiber officinale rose var rubrum*) TOWARDS *Streptococcus mutans* BACTERIA (The Comparison of Root Canal Filling Materials with 3 MIX Antibiotics)"

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Abstract

Background: Dental caries is a dental and oral health problem that commonly found in society. *Streptococcus mutans* bacteria play an important role in the caries process to root canal bacteria invasion generally caused by caries. The success of root canal treatment depends on the selection of ingredients, obturation techniques and final restoration. Root canal fillers that are able to kill root canal bacteria is 3MIX antibiotics. The use of various types of antibiotics could trigger bacterial resistance, so that other root canal fillers from natural ingredients are needed, one of the ingredients is red ginger which has antibacterial contents. **Objective:** To determine the antibacterial ability of red ginger extract (*Zingiber officinale rose var rubrum*) towards *Streptococcus mutans* bacteria. **Method:** The research method used experimental laboratory with post test only control group design. Testing the effectiveness of red ginger (*Zingiber officinale rose var rubrum*) by inhibiting the growth of *Streptococcus mutans* bacteria by well method, red ginger is made with maceration techniques, the concentration is 5%, 10% and 20% with positive antibiotic control 3 MIX. With the repetition 6 times then observe the inhibition zones. Data analysis using the *Kruskal wallis and Mann-Whitney* tests. **Results:** Red ginger extract (*Zingiber officinale rose var rubrum*) at 5% concentration showed a moderate inhibition zone with an average of 6,65 mm. The inhibitory zone at 10% concentration was effective in inhibiting the growth of *Streptococcus mutans* bacteria with an average diameter of 10,00 mm (medium) while the 20% concentration resulting the average inhibition zone morethan 12,08 mm. The positive control treatment of antibiotic 3 MIX showed an average inhibitory zone 21,26 mm. **Conclusion:** Red ginger (*Zingiber officinale rose var rubrum*) is effective in inhibiting the growth of *Streptococcus mutans*.

Keywords: root canal filler, red ginger, *Streptococcus mutans*, 3MIX