

ABSTRACT**Antibacterial Activity of Indonesian Bay Leaves Extract (*Syzygium polyanthum* [Wight.] Walp.) towards *Staphylococcus aureus* Bacteria**

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Background : *Staphylococcus aureus* is a gram positive bacterium which can be found in human's body as normal flora. Under certain amount and conditions, this bacterium can grow and become pathogenic. Infection that are caused by bacteria can be treated with antibiotics, however the misuse and misprescribing of antibiotics may lead to resistance against the particular drug. The extract of Indonesian bay leaves (*Syzygium polyanthum* [Wight.] Walp.) possesses an active compound that contains antibacterial properties. Therefore, the purpose of this research is to examine the effects of Indonesian bay leaves extract as antibacterial against *Staphylococcus aureus*.

Methods : This research was categorized as an observational laboratory with dilution method. *Staphylococcus aureus* specimens were obtained from Microbiology Laboratory Faculty of Medicine Universitas Airlangga, Surabaya. Indonesian bay leaves extract (*Syzygium polyanthum* [Wight.] Walp.) was prepared with concentration as follows: 2 gr/ml, 1 gr/ml, 0,5 gr/ml, 0,25 gr/ml, 0,125 gr/ml, 0,0625 gr/ml, 0,0312 gr/ml, 0,0156 gr/ml, 0,0078 gr/ml. Dilution test with *Mueller-Hinton broth* medium were done to determine the minimum inhibitory concentration (MIC). After 24 hours of incubation, isolated bacteria inside the tube was planted back in *Nutrient agar plate* medium to determine the minimum bactericidal concentration (MBC). Replication of this experiment were conducted 3 times according to Federer's formula.

Results: Minimum inhibitory concentration (MIC) of Indonesian bay leaves extract (*Syzygium polyanthum* [Wight.] Walp.) to *Staphylococcus aureus* was determined at 0,0312 gr/ml. Meanwhile, minimum bactericidal concentration (MBC) of Indonesian bay leaves extract (*Syzygium polyanthum* [Wight.] Walp.) to *Staphylococcus aureus* was determined at 2 gr/ml.

Conclusion: Indonesian bay leaves extract (*Syzygium polyanthum* [Wight.] Walp.) can inhibits the growth of *Staphylococcus aureus*. However, further research is needed to determine the therapeutic effects and side effects of Indonesian bay leaves extract against *Staphylococcus aureus in vivo*. Similar studies with a wider range of bacteria is also needed to know the antibacterial spectrum of the Indonesian bay leaves extract.

Keywords: *Staphylococcus aureus*, *Syzygium polyanthum* [Wight.] Walp., Indonesian bay leaves, antimicrobial