

# The Comparison of ica AD Genes in Methicillin resistant staphylococcus aureus (MRSA) biofilm producing between healthcare workers in hospital and general population in Banyumas district, Indonesia

Gembong Satria Mahardhika<sup>1</sup>

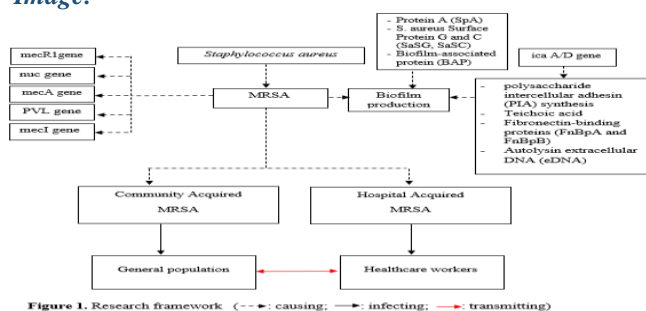
<sup>1</sup> Jenderal Soedirman University, Indonesia



## Abstract

The emergence of strains of bacteria that are resistant to many antibiotics including *Staphylococcus aureus* bacteria, is a serious problem, moreover it is supported by the ability of these bacteria to form biofilms, causing antimicrobial agents and immune system responses are not effective in eliminating biofilm cells. The aim of this study is to understand the comparison of ica A/D genes in MRSA producing biofilms between health workers in hospitals and the general population in Banyumas. This study is a cross sectional study aimed at describing the ica A/D gene in biofilm-producing MRSA among health workers in TK Wijayakusuma Hospital compared to the general population in Banyumas. Samples were taken using the nasal swab method. Microbiological examination was carried out to identify MRSA strains. Biofilm identification uses a microtiter plate biofilm assay, after that it detects the ica A/D genes. A number of 120 samples were examined, one sample (0.008%) showed MRSA results and 6 samples (0.05%) showed MSSA results. A number of 7 samples were examined for biofilm showing one sample with moderate biofilm results, 2 weak biofilm samples, 4 non biofilm samples. Examination of ica A/D gene was performed on 3 samples that showed moderate biofilm and weak biofilm results. The results in 3 samples showed positive ica A/D gene results. Comparison between ica A/D genes in health workers in hospitals with the general population cannot be done, because MRSA samples are only found in the health care group in hospitals. The conclusion from this study is there was no difference in the ica A/D gene in MRSA producing biofilms between health workers in the hospital compared to the general population in Banyumas district, because only one MRSA sample was found, that was in the group of health workers.

## Image:



## Biography:

Gembong Satria Mahardhika has done some researches on antibiotic resistance and its development while finishing his master degree. Being able to experience life in Asia, he is quite familiar with tropical medicine and it made him interested on that as well as infectious disease and any other internal medicine. His passion and dedication towards healthcare and education has made him fully committed on engaging his fellow doctors and junior on understanding human better. He is enthusiast on continuing his journey for medical research and pursuing further education.

## Speaker Publications:

1. Anjarwati, D.U., Rujito L; "Health Nurse as a career of methicillin resistant staphylococcus aureus (MRSA) in government hospitals and private hospitals in Banyumas regency"; Mandala of Health/ (2011) Volume 5 no 1.
2. "Performance Standards for Antimicrobial Susceptibility Testing"; Clinical and Laboratory Standards Institute/ (2019) : 29th edition.
3. Hassan, A., Usman, J., Kaleem, F., Omair, M., Khalid, A. and Iqbal, M; "Evaluation of different detection methods of



biofilm formation in the clinical isolates”; Brazilian Journal of Infectious Diseases/ (2011) Vol 15: 305-311.

4. Kenneth JR, Ahmad Nafees, Alspaugh J Andrew, Drew W Lawrence, et al.; Sherris Medical Microbiology/ (2018). New York : McGraw Hill Education.

[7<sup>th</sup> World Congress and Exhibition on Antibiotics and Antibiotic Resistance](#); London, UK- March 16-17, 2020.

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