

**ABSTRACT****THE ANTIBACTERIAL EFFECT OF ETHANOL EXTRACT FROM ROSELLA FLOWER (*Hibiscus sabdariffa* L.) ON THE GROWTH AND STRUCTURAL CHANGE OF CELL WALL OF METHICILLIN-RESISTANT *Staphylococcus aureus* (MRSA)**

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This study is aimed to investigate the antibacterial effect of ethanol extract from rosella flower on MRSA in vitro, to observe the relationships between giving phased concentration of Rosella flower extract and the growth obstruction of MRSA by in vitro, and to find out the picture of structural change of MRSA cell wall in the given the extract of rosella flower in some concentration. The selected method of antibacterial test is dilution method in order that by mixing MHA medium with the extract of rosella flower. The change of the cell wall structure of MRSA bacteria is observed with SEM with 5.000 – 10.000 magnification. The obtained data are analyzed with ANOVA-95% confidence interval, pearson correlation to prove the presence of relationships giving phased concentration of rosella flower extract and the growth obstruction of MRSA, and the result of SEM observation is explained descriptively. The result of antibacterial test shows that the ethanol extract of rosella flower has antibacterial activity against MRSA with MIC at  $0,25 \times 10^4$  µg/ml and MBC at  $1 \times 10^4$  µg/ml concentration. The extract of rosella flower at control, the cell morphology of MRSA bacteria still looks intact with coccus shape, smooth and protrudes. At  $0,25 \times 10^4$  µg/ml, the cell morphology of MRSA bacteria still looks intact, in coccus shape with cell diameter relatively bigger than that of control cell. The extract of rosella flower at  $0,5 \times 10^4$  µg/ml has managed to lysis some MRSA bacterial cells and the cell wall of MRSA bacteria looks closely rapture, meanwhile the extract of rosella flower at  $1 \times 10^4$  µg/ml concentration is predicted to be able to lysis MRSA bacterial cell signed with the absence of MRSA growth in macroscopic observation.

**Keywords:** *Antibacterial activity, MBC, MIC, MRSA, SEM.*