



اَلْوَطَنُ تَمِيْنٌ تَنْجُو لَوْ كُنَّ مَبَارَا  
UNIVERSITI  
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MARA

**MOLECULAR IDENTIFICATION AND CARRIAGE PATTERN OF  
*STAPHYLOCOCCUS AUREUS* FROM NASAL ISOLATES AMONG  
MEDICAL LABORATORY TECHNOLOGY STUDENTS IN UITM PUNCAK  
ALAM**

**By**

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## DECLARATION

“I hereby declare that this thesis is my original work and has not been submitted previously or currently for any other degree at UiTM or any other institutions.”

Signature

A handwritten signature in black ink, appearing to be 'Iman', written over a horizontal line.

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## ABSTRACT

### MOLECULAR IDENTIFICATION AND CARRIAGE PATTERN OF *STAPHYLOCOCCUS AUREUS* FROM NASAL ISOLATES AMONG MEDICAL LABORATORY TECHNOLOGY STUDENTS IN UITM PUNCAK ALAM

*Staphylococcus aureus* (*S. aureus*) is a normal flora of the nostrils in healthy population and most healthy carriers have *S. aureus* on their skin without showing any active infection. About 30% of human population carries *S. aureus* in their nose, which is an important risk for nosocomial and community-acquired infections worldwide. As Medical Laboratory Technology (MLT) students will be interacting and exposed to hospital environments in the future, they may be the potential nasal carriers for spreading the organism to hospital patients. This cross-sectional study involving 74 pre-clinical and 70 clinical students aims to determine the prevalence of *S. aureus* from nasal isolates among MLT students in UiTM Puncak Alam, classify these students into persistent, intermittent or non-carriers, and evaluate the association between *S. aureus* nasal colonization and possible risk factors in this population. After signing an informed consent, students completed a Survey Form related to possible risk factors for colonization, and nasal swabs were collected. *S. aureus* isolated undergo further reconfirmation by the amplification of by real-time Polymerase Chain Reaction (RT-PCR) to determine the presence of *nuc* gene. To determine the carriage types, each student were subjected to two additional nasal swabs collection, each taken three weeks apart. From 144 nasal swabs collected, 18 (12.5%) were identified as *S. aureus* carriers. Ten (6.9%) were persistent carriers, 8 (5.6%) were intermittent carriers and 126 (87.5%) were non-carriers. There were no statistical significant association between *S. aureus* nasal carrier status and gender, race, clinical status, and medical and hygienic factors ( $p>0.05$ ). In conclusion, only small percentage of MLT students were identified as intermittent or persistent carriers of *S. aureus* nasal carrier while the majority were non-carrier.

Keywords: *S. aureus*, nasal carrier, nosocomial infections, medical laboratory technology students, *nuc* gene