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Staphylococcus argenteus: An Emerging Subclinical Bovine Mastitis Pathogen in Thailand

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Abstract : Staphylococcus argenteus is the emerging species of S. aureus complex. It was generally misidentified as S. aureus by standard techniques and their features. S. argenteus is possibly emerging in both humans and animals, as well as increasing worldwide distribution. The objective of this study was to differentiate and identify S. argenteus from S. aureus, which has been collected and isolated from milk samples of subclinical bovine mastitis cases in Maha Sarakham province, Northeastern of Thailand. Twenty-one isolates of S. aureus, which confirmed by conventional methods and immune-agglutination method were analyzed by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) and multilocus sequence typing (MLST). The result from MALDI-TOF MS and MLST showed 6 from 42 isolates were confirmed as S. argenteus, and 36 isolates were S. aureus, respectively. This study indicated that the identification and classification method by using MALDI-TOF MS and MLST could accurately differentiate the emerging species, S. argenteus, from S. aureus complex which usually misdiagnosed. In addition, the identification of S. argenteus seems to be very limited despite the fact that it may be the important causative pathogen in bovine mastitis as well as pathogenic bacteria in food and milk. Therefore, it is very necessary for both bovine medicine and veterinary public health to emphasize and recognize this bacterial pathogen as the emerging disease of Staphylococcal bacteria and need further study about S. argenteus infection.

Keywords : Staphylococcus argenteus, subclinical bovine mastitis, Staphylococcus aureus complex, mass spectrometry, MLST
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