APPLICATION OF SPA-GENE AS A MARKER OF MOLECULAR EPIDEMIOLOGY IN THE CASE OF METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS (MRSA) WHICH ITS FROM DAIRY COWS IN SURABAYA REGION

Asri Rizky

ABSTRACT

The aim of this study was to isolate and identify the strain of methicillin-resistant Staphylococcus aureus (MRSA) from cow’s milk in Surabaya and the determination of fragment spa-Gene in MRSA strains. Cow milk samples of 50 samples obtained from four dairy farm. The identification of 50 samples were obtained 19 samples (38%) positive bacterium Staphylococcus aureus. Antibiotic sensitivity testing using the antibiotic oxacillin and erythromycin showed 6 samples were resistant to the antibiotic oxacillin and 6 samples were resistant to the antibiotic erythromycin. MRSA confirmation test conducted on 6 samples obtained 5 positive of MRSA strain. The results of electrophoresis of Polymerase Chain Reaction (PCR) of 5 MRSA strain contained four positive samples showed the presence of fragment spa-Gene. Results showed that three models of picture fragments spa-Gene; The first has a length of 90 bp and 140 bp, second has a length 140 bp, and third with a length of 90 bp. This study reveals the nature of spa-Gene polymorphism of MRSA strains isolated from milk samples. It was concluded that the spa-gene can be used as a marker molecular epidemiology of MRSA strains.

Key words: Staphylococcus aureus, methicillin-resistant Staphylococcus aureus (MRSA), spa-Gene, polymorphism, epidemiology molecular