Laboratory-Based Evaluation of PVL-RPLA “Seiken”

to Detect Panton-Valentine Leukocidin Produced by Staphylococcus aureus

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It is well known that some isolates of *Staphylococcus aureus* produce pathogenic toxin, Panton-Valentine leukocidin(PVL), and that the toxin has been reported to be highly associated with community acquired-methicillin resistant *S. aureus*(CA-MRSA). Currently, the PCR method using specific primers for the PVL gene(*LukS-PV-lukF-PV*) have been widely used to detect PVL. In this study, we evaluated the PVL-RPLA “Seiken”, diagnostic reagent based on a reserved passive latex agglutination reaction with a specific monoclonal antibody for detecting PVL. A total of 630 clinical isolates were used. PCR method detected 34 PVL-positive(28 MRSA and 6 MSSA), and, of these, PVL-RPLA “Seiken” read positive for 32 isolates(27 MRSA and 5 MSSA), the result indicating two false negative occurrences. The concordance rate was 99.7%. In addition the recommended BHI broth, CCY medium, Dolman broth and Todd-Hewitt broth were applied for toxin preparation media. Toxin concentration produced in CCY medium was significantly higher than those in the remaining culture medium(\(p < 0.05\)).

PVL-RPLA “Seiken” is a method for detecting the PVL in the culture broth by antigen-antibody reaction after an overnight shaking culture. This method does not require any expensive equipments or facilities. Thus this reagent provides us with rapid, easy-to-perform, less expensive test method to detect PVL in clinical microbiology laboratories.【Original】

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