Evaluation of PCR-based approach for serotype determination of Streptococcus pneumoniae

ABSTRACT

Determination of Streptococcus pneumoniae serotypes is essential for epidemiological surveillance. Therefore accurate, reliable and cost effective serotyping method is crucial. In this study, we determined the serotypes of 41 pneumococcal isolates recovered from human anterior nares by multiplex Polymerase Chain Reaction (PCR) utilizing published primers. The data was then compared with conventional serology using latex agglutination (LA) and the Quellung reaction. Based on the PCR-approach, 8 different serogroups/serotypes were detected with one isolate classified as non-typeable (cpsA- negative). In reference to the serology-based data, the results were in agreement except for one isolate. For the latter isolate, the LA and Quellung tests failed to show a reaction but the PCR-approach and sequencing identified the isolate as serogroup 15B/C. Based on this experimental setting, we found that the PCR-approach for pneumococcal serotypes determination is reliable to serve as the alternative for determining the pneumococcal serotyping.

Keyword: Streptococcus pneumoniae; PCR; Serotypes