

ABSTRACT

This exploratory descriptive study was aimed at finding genes autolysin (lytA) and pneumolysin (ply) in stored isolates of *Streptococcus pneumoniae*.

Samples were derived from *Streptococcus pneumoniae* isolates stored at -80°C, obtained from the collection of Clinical Microbiology Installations, Dr. Soetomo Regional General Hospital Surabaya, and the collection of Microbiology Laboratory R & D Installation, The General Hospital, Mataram. Gene identification was performed by PCR and sequencing. This study used two pairs of primers. Primers used for autolysin were IytA forward dan lytA reverse, and for pneumolysin the primers were ply forward dan ply reverse. PCR amplification was performed using the temperature with the following conditions: (1) pre-denaturation at 94°C, for 2 minutes (2) denaturation at 94°C, 20 seconds (3) Annealing at 56°C, 10 seconds (4) elongation/extension at 72°C, 40 seconds, final extension step at 72°C, 5 minutes. Final PCR products were analyzed on agarose gel, 2% stained with ethidium bromide and visualized under UV light.

Results showed that 10 *Streptococcus pneumoniae* isolates contained both lytA and ply genes with nucleotide sequence of 295 base pairs that encodes 76 amino acids to autolysin (lytA), while the sequence of nucleotides in pneumolysin (Ply) was 325 base pairs that encodes 93 amino acids; in which 42.11% Autolysin (lytA) consisted of Glycine (G), (Leucin (L), Alanine (A), and glutamic acid (E), while 32.26% pneumolysin (ply) consisted of Leucine (L), valine (V) and Siren (S).

It can be concluded that the lytA gene was found to achieve conformity of 98.68% (or 234 bp) compared with the GenBank (FM code. 865 979), while the ply gene was found to achieve conformity of 99.99% (or 279 bp) compared with the GenBank gene (GU968403 code). In stored *Streptococcus pneumoniae* isolates most amino acids contained in the autolysin (lytA) are Glycine (G), Leucin (L), Alanine (A), and glutamic acid (E), comprising 42.11%, whereas most amino acids contained in pneumolysin (ply) were Leucine (L), valine (V) and Siren (S), comprising 32.26%.

Keywords : *autolysin (lytA) Gene, pneumolysin (ply) Gene, Stored Streptococcus pneumoniae, Isolates, PCR, DNA Sequencing*