

Expression analysis of adherence-associated genes in pneumococcal clinical isolates during adherence to human respiratory epithelial cells (in vitro) by real-time PCR.

ABSTRACT

Pneumococcal virulence determinants have been extensively studied but molecular evidence on virulence gene expression pattern is still lacking. We undertook this study to analyze the regulation pattern of adherence-associated genes; *psaA*, *pspC*, *cbpG*, including *ply* of serotypes 1, 7F, 19F and 23F clinical isolates during the bacterial adherence to human lung epithelial cells (in vitro), by real-time PCR. We were able to harvest the bacterial RNA (0.5-1 µg µL⁻¹) from the infected host cell and analysis showed a consistent upregulation of *psaA*. Differential expressions were observed for *pspC*, *cbpG* and *ply* genes but the former was mostly upregulated whereas the later two frequently showed either no significant change or a downregulation. Partial nucleotide sequences of *psaA*, *cbpG* and *ply* were highly homologous among the isolates as well as against GenBank sequences (99%) whereas those for *pspC* were similar (98%) to allelic variants *pspC*-3 and *pspC*-5.

Keyword: *cbpG*; Gene expression; *ply*; Pneumococci; *psaA*; *pspC*.