Pulsed-field gel electrophoresis (PFGE) has been shown to be highly reproducible and discriminatory for the molecular subtyping of a broad range of bacteria (Swaminathan et al., 2001). In the case of Streptococcus pneumoniae, PFGE has been successfully applied as an epidemiological tool to investigate the spread of drug-resistant pneumococci (Hall, 1998). In addition, the increase in nosocomial infection due to Gram positive bacteria is commonly reported. Lefevre and co-workers (1993) evaluated PFGE of pneumococci and found that the technique was excellent in differentiating between epidemiologically unrelated pneumococcal strains. PFGE of chromosomal DNA from drug resistant pneumococci isolated in Iceland, Portugal and France has demonstrated the clonal spread of Spanish multiresistant strains to these countries (Soares et al., 1993; Gasc et al., 1995; Vaz Pato et al., 1995). The emergence of drug-resistant strains makes antibiotic sensitivity tests less useful in differentiation individual strains. Hence, there is a need for a discriminative, rapid and reproducible method to detect minor differences among drug-resistant strains so as to trace the source of infections. However, the main disadvantage of PFGE method is that it is time-consuming. The technique involves extracting the whole genomic DNA of a bacterial cell that is embedded in agarose. The DNA-agarose plug is then digested with a rare-cutting restriction enzyme. The large-DNA fragments are then separated by applying a pulsed electric field in a standard PFGE apparatus. The standard procedure might take up to 6 days to complete, from the day of pure culture bacterial isolation (Dipersio et al., 1996). This has become a disadvantage as a clinical laboratory needs quick result especially in cases of outbreaks where a large number of isolates will have to be analysed. Thus, a PFGE method, that is simple and rapid to perform but at the same time retain the quality of the result, needs to be developed. Here, we present a modified, rapid PFGE method for the analysis of clinical isolates of Streptococcus pneumoniae and Group B Streptococcus obtained from the University of Malaya Medical Centre. The modified method is even shorter and comparable to the earlier report for rapid PFGE protocol for Gram-negative bacteria (Thong and Pang, 1996).

The PFGE method described was adapted from previously published method (Dipersio et al., 1996;