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Method for rapid identification of oral streptococci by PCR using 16S-23S ribosomal RNA intergenic spacer gene

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Abstract Mutans group streptococci play an important role in the formation of dental caries, while mitis group streptococci are considered to be associated with subacute bacterial endocarditis. Both mitis and salivarius group streptococci, which are early colonizers in the human oral cavity, have an effect on the infection and colonization of mutans streptococci. In the present study, a rapid and exact PCR method to detect those oral streptococci was developed using the 16S-23S ribosomal RNA intergenic spacer gene, which is present between 16S rRNA and 23S rRNA within the RNA operon. The PCR analysis was able to correctly identify mutans and mitis group streptococcal species. Our results indicate that the combined PCR analysis method established in the present study is useful for detecting oral streptococcal species, as well as in clinical applications to predict and prevent dental caries and etiological studies of streptococcal infective endocarditis.

Key words 16S-23S rRNA intergenic spacer gene, Oral streptococci, PCR, Species identification



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