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Title (English)

Bacterial species determination using bioinformatic tools and the Pyrosequencing technology

Title (Swedish)

Abstract

Pyrosequencing™ is a technology for real-time DNA sequencing. It can be used in a variety of application including microbial identification. In this study methods for bacterial classification using the Pyrosequencing technology have been evaluated. The rRNA gene *rnpB* was used as target and members within the *Streptococcus* genus as model species. Bioinformatic tools were used to evaluate and find discriminatory regions of the target gene as well as developing result evaluation tools.

The relatively short sequences that can be obtained by Pyrosequencing were found to be discriminatory enough to separate 27 of 48 streptococci species and subspecies. When a second target region was selected, 42 species could be distinguished. The Pyrosequencing assay designed for streptococci identification was highly accurate and reproducible.

Keywords

Pyrosequencing, DNA sequencing, bacterial identification, *Streptococcus*, *rnpB,* RNase P.

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