Video Article

Electroporation of Mycobacteria

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Abstract

High efficiency transformation is a major limitation in the study of mycobacteria. The genus Mycobacterium can be difficult to transform; this is mainly caused by the thick and waxy cell wall, but is compounded by the fact that most molecular techniques have been developed for distantly-related species such as Escherichia coli and Bacillus subtilis. In spite of these obstacles, mycobacterial plasmids have been identified and DNA transformation of many mycobacterial species have now been described. The most successful method for introducing DNA into mycobacteria is electroporation. Many parameters contribute to successful transformation; these include the species/strain, the nature of the transforming DNA, the selectable marker used, the growth medium, and the conditions for the electroporation pulse. Optimized methods for the transformation of both slow- and fast-grower are detailed here. Transformation efficiencies for different mycobacterial species and with various selectable markers are reported.

References

