

Detection of *M. tuberculosis* using DNA chips combined with image analysis system.

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摘要

Abstract

OBJECTIVE: To develop a packaged DNA chip assay (the DR. MTBC Screen assay) for direct detection of the Mycobacterium tuberculosis complex. DESIGN: We described a DNA chip assay based on the IS6110 gene that can be used for the detection of *M. tuberculosis* complex. Probes were spotted onto the polystyrene strips in the wells of 96-well microtitre plates and used for hybridisation with biotin-labelled amplicon to yield a pattern of visualised positive spots. The plate image was scanned, analysed and interpreted automatically. RESULTS: The results corresponded well with those obtained by conventional culture as well as clinical diagnosis, with sensitivity and specificity rates of respectively 83.8% and 94.2%, and 84.6% and 96.3%. CONCLUSION: We conclude that the DR. MTBC Screen assay can detect *M. tuberculosis* complex rapidly in respiratory specimens, readily adapts to routine work and provides a flexible choice to meet different cost-effectiveness and automation needs in TB-endemic countries. The cost for reagents is around US\$10 per sample..