

**Use of MGIT 960 for rapid quantitative
measurement of the susceptibility of Mycobacterium
tuberculosis complex to ciprofloxacin and
ethionamide**

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摘要

Abstract

Objectives: Tentative standards for testing MICs for Mycobacterium tuberculosis include agar dilution and the BACTEC method. However, the conventional agar dilution method requires 3–5 weeks to complete; whereas BACTEC, although a rapid test, involves the use of radioisotopes. In contrast, the MGIT 960 system uses a fluorescence quenching based oxygen sensor that can be read automatically. This system is not only robust, safe and simple, but has been validated for susceptibility tests of first-line antituberculous agents.

Methods: We evaluated 46 clinical strains of M. tuberculosis isolated from patients admitted to Kaohsiung Veterans General Hospital. Testing of MICs of ciprofloxacin and ethionamide was carried out by MGIT 960 and compared with the agar dilution method.

Results: Good agreement was found between MGIT 960 and agar dilution. The greatest concordance between the agar dilution and MGIT assay at ± 1 and ± 2 dilution was 80.4% and 97.8% for ciprofloxacin, and 82.6% and 93.5% for ethionamide, respectively.

Conclusion: MGIT 960 was found to be comparable to the current NCCLS standard method, agar dilution, and has the advantage of being rapid (obtaining results within 5–17 days, average 8.9 days) and easy to achieve standardization