

## Correspondence

### Microcolony detection for rapid diagnosis of *Mycobacterium tuberculosis* infection

In the article by Mejia et al. published in a recent issue of the Journal,<sup>1</sup> the authors report on an inexpensive, rapid and reliable method for diagnosing *M. tuberculosis* infection in decontaminated respiratory specimens by using 7H11 thin layer culture plates and observing microscopically for microcolony growth. They compared the method with conventional cultures on Löwenstein-Jensen (LJ) slants, and were able to detect more than 80% of positive cultures after 2 weeks of incubation, compared with 10% in LJ. Although in smear-negative samples LJ was more sensitive (4.57% vs 2.18%), addition of a thin layer 7H11 plate to the routine culture procedures of many tuberculosis laboratories with limited resources could represent an improvement for early detection of mycobacterial growth. These thin layer plates represent an alternative to more expensive automated liquid culture systems.<sup>2,3</sup>

In an accompanying editorial, Heifets and Lindholm-Levy highlight the problem of the increasing rates of drug resistance, and the need to implement additional measures other than directly observed therapy (DOTS) to prevent its spreading.<sup>4</sup> Detection of drug resistance in all new patients, including those who are smear-negative, would be one step in this direction. They call for laboratories in other countries to investigate the use of agar plates, like the ones used by Mejia et al., for the rapid detection of drug resistance.

We have been involved in the application of a rapid calorimetric method for the detection of drug resistance in *M. tuberculosis*.<sup>5</sup> In a comparative study with the proportion method on LJ medium, a general agreement of 97% was obtained with isoniazid, rifampicin, ethambutol and streptomycin. As was also suggested by Mejia et al. in their article, incorporation of reagents allowing faster screening of growth would improve their method even further without increasing the costs. The utilisation of coloured redox indicators would be a good alternative to this end, and preliminary experiments in our laboratory incorporating the reagents in the medium or the inoculum indicate that this would be feasible.

With the increasing rates of multidrug resistance, and recent reports about the increase of drug resistance in spite of the application of the DOTS strategy,<sup>6</sup> alternative methods like the one described by Mejia et al., which are applicable in laboratories in

low-income countries, should be further adapted and evaluated for the rapid detection of drug resistance with a low cost method.

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### References

- 1 Mejia G I, Castrillon L, Trujillo H, Robledo J A. Microcolony detection in 7H11 thin layer culture is an alternative for rapid diagnosis of *Mycobacterium tuberculosis* infection. *Int J Tuberc Lung Dis* 1999; 3: 138-142.
- 2 Woods G L, Fish G, Plaunt M, Murphy T. Clinical evaluation of difco ESP culture system 11 for growth and detection of mycobacteria. *J Clin Microbiol* 1997; 35: 121-124
- 3 Rohner P, Ninet B, Metral C, Emler S, Auckenthaler R. Evaluation of the MB/BacT system and comparison to the BACTEC 460 system and solid media for isolation of mycobacteria from clinical specimens. *J Clin Microbiol* 1997; 35: 3127-3131.
- 4 Heifets L, Lindholm-Levy P. Dilemmas and realities in the laboratory diagnosis of tuberculosis in low income countries. *Int J Tuberc Lung Dis* 1999; 3: 88-89.
- 5 Palomino J C, Portaels F. Simple procedure for drug susceptibility testing of *Mycobacterium tuberculosis* using a commercial colorimetric assay. *Eur J Clin Microbiol Infect Dis* 1999; 18: 380-383.
- 6 Portaels F, Rigouts L, Bastian I. Addressing multidrug-resistant tuberculosis in penitentiary hospitals and in the general population of the former Soviet Union. *Int J Tuberc Lung Dis* 1999; 3: 582-588.

### Molecular approach to identifying route of *Mycobacterium tuberculosis* transmission in a village

It has usually been considered that the transmission of the tuberculosis in endemic areas is produced by the endogenous re-activation of a previous strain infection.<sup>1</sup> However, RFLP molecular strains analysis is changing this concept.<sup>2</sup> In this report we analysed *Mycobacterium tuberculosis* strains from patients with active tuberculosis (TB) detected in a small village during a 3-year period when the prevalence increased three times higher than expected. Thirty-five strains of *M. tuberculosis* isolated from 18 patients (14 pulmonary, two pleural and two renal TB) were detected in Alginet, a village of around 9000 inhabitants located 25 km from Valencia.