

## COMPARISON BETWEEN TRADITIONAL TECHNIQUES AND POLYMERASE CHAIN REACTION (PCR) FOR HUMAN TUBERCULOSIS DIAGNOSIS

**THESIS.** A. C. B. Assis submitted this thesis for her Doctorate in Tropical Diseases at Botucatu School of Medicine, São Paulo State University, UNESP, Botucatu, São Paulo, Brazil, 2005.

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**ABSTRACT:** Traditional microbiological diagnostic techniques such as bacilloscopy and culture were compared with polymerase chain reaction (PCR) for isolation of *Mycobacterium* spp from human patient secretions. PCR was standardized to diagnose tuberculosis. Three pairs of primers were used: one for *Mycobacterium* spp detection, one for the *Mycobacterium tuberculosis* complex, and one specific for *Mycobacterium bovis*. Two hundred clinical samples (195 of sputum and 5 of urine) were sent to the Mycobacterium Laboratory of Adolfo Lutz Institute - Bauru, São Paulo, for tuberculosis analyses. Bacilloscopy and culture were positive in 8.5% (17/200) of the samples, with no direct correspondence between them. This value is within the 10% disease prevalence for the city of Bauru. *Mycobacterium flavescens* was biochemically identified from HIV-infected patient. *Mycobacterium bovis* was not isolated. PCR was positive in 13% of the samples (26/200). There was an agreement between the three diagnostic techniques; PCR was more effective than bacilloscopy and culture, with no difference between them. PCR sensitivity, specificity, negative and positive predictive values were 65.38%, 100%, 100% and 96%, respectively. Bacilloscopy and culture sensitivity and specificity were 64.7% and 96.7%, respectively. PCR showed a fast, specific, and more sensitive technique than the traditional techniques for tuberculosis diagnosis.

**KEY WORDS:** Tuberculosis, diagnosis, PCR

### CORRESPONDENCE TO:

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