

# HPLC ANALYSIS OF MYCOLIC ACIDS IN EVALUATION OF DRUG SUSCEPTIBILITY OF *MYCOBACTERIUM TUBERCULOSIS* STRAINS - COMPARISON WITH CONVENTIONAL METHODS

Renata Walkiewicz, Ryszarda Chazan, Hanna Grubek-Jaworska

*Department of Internal Medicine, Pneumology and Allergology,  
Medical University of Warsaw, Warsaw, Poland*

## **Abstract**

The commonly used phenotypic tests of *M. tuberculosis* drug susceptibility evaluate drug effects on quantity of colony forming units (CFU) on solid media or CO<sub>2</sub> secretion/O<sub>2</sub> consumption by cultures in liquid media. These tests are not precise enough and need a long time for the growth of the bacilli, so new more accurate and rapid methods are highly needed. The aim of this study was to determine the utility of quantitative HPLC analysis of mycolic acids for drug susceptibility of *M. tuberculosis*. In 119/120 (99.16%) of the performed tests the HPLC methods showed excellent agreement with the conventional phenotypic tests. The quantitative HPLC analysis of mycolic acids is a fairly exact indicator of tubercle bacilli growth and may be used as a quick and reliable measure of their drug sensitivity.

**Keywords:** HPLC, mycolic acids, drug susceptibility, *M. tuberculosis*