

# IL-10 and IL-12 Production in Response to *Mycobacterium Tuberculosis* Total Lipid Antigens in Multidrug-Resistant Tuberculosis

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## ABSTRACT

**Background:** *Mycobacterium tuberculosis* lipid antigens take part in pathogenicity of the bacterium but the response of monocytes/macrophages to these antigens in tuberculosis is not well known. **Objective:** The aim of current investigation was to study the *M. tuberculosis* lipid antigens in tuberculosis pathogenesis. **Methods:** In the present study *M. tuberculosis* lipid antigens were extracted. Monocytes and macrophages from multidrug-resistant tuberculosis (MDR-TB), TB patients, asymptomatic healthy individuals with positive tuberculin skin test positive and healthy individuals with negative tuberculin skin test were collected using magnetic cell sorting. The cells were stimulated by *M. tuberculosis* total lipid antigens and IL-12 and IL-10 in their supernatants were measured by enzyme-linked immunosorbent assay. **Results:** The IL-12 production by monocytes in response to *M. tuberculosis* total sonicate antigens in the MDR-TB patients did not show a considerable difference with the PPD positive healthy subjects, whereas in the active TB patients, IL-12 levels significantly decreased ( $p < 0.05$ ). IL-10 production by monocytes in TB patients in response to total lipid antigens showed a significant increase in comparison to MDR-TB patients and healthy individuals. **Conclusion:** In the MDR-TB patients, IL-10 and IL-12 production by monocytes in response to *M. tuberculosis* lipid antigens are similar to the healthy subjects.

**Keywords:** Multidrug Resistant Tuberculosis, IL-12, IL-10, Monocyte, Macrophage, Lipid

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