

Title: Evaluating the potential of IP-10 and MCP-2 as biomarkers for the diagnosis of TB

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Is your work based in a TB high burden country? no

Are you a student fellow or trainee? yes

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## **Title**

Evaluating the potential of IP-10 and MCP-2 as biomarkers for the diagnosis of TB

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## **ABSTRACT:**

### **Aim**

The aim of the study was to evaluate the potential of diagnostic tests based on IP-10 and MCP-2, and compare the performance with the Quantiferon-Gold In-Tube (QFT-IT) test.

### **Methods**

IP-10 and MCP-2 were determined in plasma from whole blood stimulated with *M.tuberculosis*-specific antigens. Samples were obtained from 80 patients with culture and/or PCR proven TB, and 124 unexposed healthy controls; 86 high school students and 38 high school staff. IP-10 and MCP-2 test cut-offs were established based on ROC curve analysis and applied in diagnostic test algorithms with positive, negative and indeterminate test outcome.

### **Results and discussion**

TB patients produced significantly higher levels of IP-10 (median 2158pg/ml) and MCP-2 (median 379pg/ml) compared with IFN- $\gamma$  (median 215pg/ml,  $p<0.0001$ ). The QFT-IT, IP-10 and MCP-2 tests detected 81%, 83% and 71% of the TB patients; 0%, 3% and 0% of the high school students

and 0%, 16%; and 3% of the staff. Agreement between tests was high ( $>89\%$ ,  $k>0.77$ ). By combining IP-10 and IFN- $\gamma$  tests the detection rate increased among TB patients to 90% without a significant increase in positive responders among the students.

In conclusion, IP-10 and MCP-2 responses to *M.tuberculosis* specific antigens could be used to diagnose infection. Combining IP-10 and IFN- $\gamma$  may be a simple approach to increase the detection rate of the *M.tuberculosis* specific T cell assays.

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