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"BIOMARKERS DISCOVERY IN LATENT AND ACTIVE TB INFECTION"

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Tuberculosis (TB) is a serious infectious disease. India has far more TB cases (active and latent) than any other country, which is bad enough. Recently, along with the increased incidence of TB, extra pulmonary TB [EPTB] incidence has also increased. Despite the magnitude of the problem, the general diagnostic outlook is discouraging. In the absence of a cost-effective diagnostic method, all forms of Tb patients remains undiagnosed, which leads to the development of secondary complications that may lead to death. In our laboratory we have identified panel of M.tuberculosis specific protein biomarkers includes Ag 85 complex, ESAT-6,Hsp 65,Hsp 71, GroEs, CFP-10,45 kDa glycoprotein, Hsp 16, Rv2623, which will be useful in the differential diagnosis in all forms of TB and between latent and active TB infection . Using these biomarkers we have developed ELISA based TB antigen (peptides based also) and antibody detection kit for the early and rapid diagnosis of TB infection. we have analyzed more than 3000 serum samples for pulmonary Tb cases, 1500 CSF samples of TBM cases,160 ascitic fluid samples for TB ascites 145 cases of pleural TB,35 cases of Tb arthritis and around 200 Tb exposed population along with suitable controls with a average sensitivity of 85% and specificity of 90%. The developed ELISA kit is rapid, easy to perform and cost effective and useful in low-income TB-affected regions where more sophisticated facilities is generally not available. Evaluation of developed ELISA based antigen kit in other parts of the world where incidence of active or latent TB is high will be useful. In our laboratory we have also developed multiplex ELISA (using Ag 85b, ESAT-6, 45 kDa glycoprotein, GroEs, CFP-10 and Hsp-16) for simple and rapid (within 2hrs) and cost effective test for TB diagnosis .In addition to that QFT test based onESAT-6,Hsp 65 and CFP-10 was also evaluated in TB exposed population in TB endemic area and tribal malnourished population of melghat,

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