Despite an efficient treatment and a widely-used vaccine, one third of the world’s population is estimated to be latenty infected (LTBI) with *Mycobacterium tuberculosis* (Mtb) and are at risk of progressing to contagious active tuberculosis. New TB vaccines and improved detection of LTBI are therefore urgently required for global TB control. As a first step towards these goals, a better understanding of host recognition and response to immunogenic Mtb antigens is needed.

In this study, interferon-γ release in response to the immunodominant antigens ESAT-6, TB10.4, Ag85A, Rv2031 and DesA1 was assessed by ELISPOT on PBMC from 55 newly diagnosed pulmonary TB patients, 121 of their household contacts and 123 matched community controls, enrolled in high TB burden area.

ESAT-6 and PPD ELISOP responses were higher in the TB patient group compared to both contacts and controls (p<0.05 respectively). These responses increased with time after recruitment in the contacts and fell after successful treatment in the patients consistent with the hypothesis that responses to these antigens reflect antigenic or bacterial load. However, the response to DesA1 was significantly lower in the controls compared to the contacts (p<0.05 respectively). Receiver Operating Characteristic curve analysis showed that PPD/ESAT-6 best segregated TB patients from the other groups, while DesA1 best segregated contacts from controls. The present study therefore identifies DesA1 as an immunodominant antigen with the potential to contribute to improved immunodiagnosis.