Reviewer's report

Title: Rv1985c, a promising novel antigen for diagnosis of tuberculosis infection from BCG vaccinated controls

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Reviewer: SANG NAE CHO

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In the manuscript, the authors presented Rv1985c protein of Mycobacterium tuberculosis as a potential antigen for immunodiagnosis of its infection. Although both T cell and antibody responses to the antigen are far from ideal, the Rv1985c antigen seemed worthy to explore further its usefulness in the field conditions. However, the following points should be addressed before consideration of the MS for publication in the Journal.

Major:
The authors recruited tuberculosis (TB) patients and their contacts (LTBI) from three regions of China, Chongqing, Jinan, and Suzhou, but healthy controls from Fudan University, which is located in Shanghai. In addition, the mean ages of TB and LTBI subjects were older by more than 10 years than that of healthy controls. Therefore, the extent of exposure to M. tuberculosis, non-tuberculosis mycobacteria, and other infectious agents would be markedly varied resulting in difference in background immune responses to any antigen including the Rv1985c. Difficulty in recruiting healthy control subjects in the same areas as the TB and LTBI subjects would be understandable, but such limitations and potential confounding factors should be mentioned in the discussion section. If healthy subjects in the same areas and in similar age groups were recruited, the cut-off levels for T cell and antibody responses might have been elevated, which in turn affected the sensitivity and specificity of the assays using Rv1985c.

Minor:
Table 2: the title of Table 2 contains numbers of subjects of TB, LTBI, and Healthy controls. Like in Table 3, the numbers need to be indicated in the first row of the Table 2 instead.

Table 3: If LTBI subjects were not tested using the PATHOZYME-MYCO IgG kits, it would be better to indicated as “ND: not done: or :NT: not tested” instead of “-“. One may confuse the “-“ as all negative.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published
**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.