**Abstract title**:

BOOSTING QUANTIFERON-TB GOLD IN-TUBE TEST WITH RV2654 RELATED SYNTHETIC PEPTIDE

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Specificity and sensitivity of tuberculosis (TB) diagnosis is particularly important in the health care of immunocompromised patients. TNF-alpha inhibitors have demonstrated great efficacy in the treatment of immune-mediated inflammatory diseases, however, significantly higher incidence of TB was observed after the initiation of anti-TNF therapy in patients latently infected with *Mycobacterium tuberculosis* (Mtb). Therefore, sensitive diagnostic tool is needed to test Mtb infection, and to prevent and manage this adverse effect.

Insufficient sensitivity of IGRA tests can be further enhanced with the use of more antigens derived from different immundominant proteins of Mtb. Previous studies have demonstrated that Rv2654c had great potential for specific immune-based diagnosis of TB infection especially in the BCG-vaccinated population and one peptide (p38-55) has been included in the commercially available QFT-GIT test. Rv2654c protein is encoded in the RD11 region, highly specific for Mtb and absent from most of the atypical mycobacteria.

Our experiments suggested that the most immunogenic peptide that is recognized by Mtb infected but not by BCG vaccinated individuals is different from what is previously described by Aagaard and his co-workers [1]. Therefore, a systematic epitope mapping and fine characterization was evaluated for the Rv2654c protein with the aim to find peptides with high specificity. Furthermore, sensitivity of a combination of ESAT-6, CFP-10 and the newly described epitope peptide was compared in a QFT-GIT test [2].

1. Aagaard C, et. al. J Infect Dis 2004 189: 812-819.
2. Horváti, K, et.al. J Infect. 2016 72:179-88

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