OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Conference on
Clinical & Cellular Immunology

October 15-17, 2013 Hampton Inn Tropicana, Las Vegas, NV, USA

Approaches towards improving the diagnosis of bovine tuberculosis infection in Egypt by applying the gamma interferon assay

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Bovine tuberculosis (BTB) can be detected in live animals by the use of tests of cellular mediated immunity, such as tuberculin skin test and gamma-interferon assay (Bovigam™). In Egypt, the diagnostic tool for detection of BTB is skin testing, although various factors can influence the sensitivity and specificity of these. Currently, the Bovigam™ test is routinely used in many countries as a complementary test for it is capability to improve the overall probability of detecting infected cattle in herds accounting for a high incidence of BTB. The goal of this study was to evaluate the performance of the Bovigam™ test to diagnose the BTB infection in Egypt. Association between single (STT) or single comparative intradermal (SCIT) skin tests; Bovigam™ test, BTB status of cattle, and postmortem test results was investigated. To exclude the false positive test results caused by sensitization of the animals with environmental mycobacteria and or increase the test efficacy to detect the infection in inconclusive or negative skin test animals, the Bovigam™ test was modified into a triple comparative test set-up. In addition to the standard test format based on stimulation of whole blood with bovine and avian tuberculin PPD, IFN-γ produced in response to ESAT-6/CF-10, was explored. To improve test validity for Egyptian cattle, the most appropriate cut-off values for the test under local conditions were determined. Our data suggested that the highest test specificity could be achieved by using tuberculin and ESAT-6/CFP-10 in combination. All Animals that tested positive with ESAT-6/CFP-10 and tuberculin negative showed typical visible lesion. The findings recommended the use of the triple comparative Bovigam™ test as an ancillary or supplemental test in TB program herds known or suspected of having bovine TB.

Biography

Gaber Abdellrazeq has completed his Ph.D. at the age of 31 years from Alexandria University and visiting scholar at Washington State University. He is the principle investigator of three Egyptian Projects focused on mycobacterial diseases. He has published 2 papers in reputed journals and serving as an editorial board member of repute.

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