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Molecular and serological diagnosis of different types of *Brucella* species infecting human and animals

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Brucellosis is one of the most important diseases affecting human and animals in most of the developing countries including Saudi Arabia. Rapid and accurate diagnosis is fundamental for control and eradication of brucellosis. The present work aim to evaluate different types of brucella species infecting human and animals in Shaqra at Saudi Arabia and El Fayouim Governorate, Egypt by using serological and molecular methods of PCR. A total of 400 samples (200 serum samples from male and 200 serum samples from female) as well as the same number from male and female whole blood samples with (EDTA anti-coagulant) at different ages and 300 serum samples from different samples and the same number of samples whole blood with EDTA anti-coagulant collected (camel, sheep, goat and beef cattle) through the period between (February 2015 to July 2015) in Shaqra, Saudi Arabia and El Fayouim Governorate, Egypt. Sera were examined by ELISA, SAT and TAT. DNA extracted and examined by PCR involving specific primers for *Brucella* species (*B. spp*), *Brucella melitensis (B. melitensis)* and *Brucella* abortus *(B. abortus)* based on IS711 in the brucella chromosome. Comparing serological tests with MPCR in human (male and female) serum and blood samples gave total positive of ELISA IgG, (32.32%), ELISA IgM (20.58%), RBT (25.29%), SAT test (25.29%), TAT (25.29%) and Multiplex PCR (32.9%). The highest positive percent ELISA IgG and PCR for detection of *B. spp*. prevalence of *B. spp* in these animals may be considered the main source of Brucellosis in human through consumption of raw or under cooked meat contaminated with *B. spp* or exposure infected aborted material and discharge of infected animals with different *B. spp*. ELISA proved to be simple, accurate, rapid, does not require specialized training or equipment and economical for the detection of *Brucella* antibody. It can be concluded that this assay could be ideal as a serological test for developing countries and rural settings, suitable for large-scale screening or presumptive test. Also, Multiplex PCR base assays were able to identify *B. spp* infections followed by ELISA, RBT, followed by SAT and TAT.

Biography

Abeer M Abdalhamed has completed her PhD from Cairo University. Currently, she is a Researcher at National Research Center (NRC) – Cairo – Egypt. She worked as a Lecturer at the Department of Microbiology and Virology at College of Medicine and Applied Medical Sciences – 2015 up to date. She also worked as an Assistant Professor and Departmental Supervisor at Medical laboratory Science at Medical applied Science, Shaqra University (SU), Saudi Arabia. She has published more than 12 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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