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## Investigation and molecular typing of *Brucella* isolated from dairy cattle herd immunized with *Brucella abortus* RB51 vaccine in Egypt

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Brucellosis is still a common in capacitating zoonoses that affecting wide range of domesticated and wild animals as well as humans. *Brucella* was firstly described by Sir David Bruce in 1887 in human. Fifty two years later (1939), the disease was reported in Egypt for the first time in a scientific report, however the doubt still exist if, whether the disease is endemic in Egypt since thousands of years. Since then the disease remained endemic nationwide and affecting all livestock animals. In Egypt, brucellosis control programs for bovines are based on a test and slaughter policy as well as vaccination. Recently, Mass vaccination with attenuated *B. abortus* RB51 has been approved nationwide; however some may lead to abortion in pregnant females. The present study was carried out in supposed *Brucella*-free dairy cow farm in Egypt to investigate a numerous occurrence of abortions occurred after immunization with *B. abortus* strain RB51. Among pregnant vaccinated cows, 10% aborted three months post vaccinations. All aborted cows show positive reaction with Rose Bengal Test (RBT) and Complement Fixation Test (CFT). *B. abortus* biovar one was isolated from four aborted fetuses. Conventional biochemical analysis revealed two *B. abortus* smooth type and two rough types. The use of the Bruce ladder PCR provided clear differentiation to the field strain and excludes the RB51 vaccine strain. Genotyping analysis of isolates by Multiple Loci VNTR Analysis (MLVA-16) cleared that there are two different isolates in the herd with low genetic diversity. Isolated *B. abortus* are located in a different cluster from the RB51 vaccinal strains which used in immunization of the herd. In Conclusion: *B. abortus* bv1 is the source of outbreak but not the vaccine. RB51 vaccine would only reduce the number of abortions caused by field strains but offer no protection from infection. The most likely source of infection appears to be the uncontrolled introduction of the agent via vectors or latent carrier. Eradication of brucellosis is a multidirectional process required combination between ordinary control program and high biosecurity level in the farms.

### Biography

Gamal Wareth has obtained his Bachelor degree (BVSc) from faculty of Veterinary Medicine, Assuit University, Egypt in 2002. He completed his Master degree in Veterinary Pathology in 2009 at Benha University, Egypt. Then he enrolled for DVM in Free University of Berlin in collaboration with Friedrich-Loeffler-Institut (FLI), Germany. He is currently works in NRL of brucellosis at Friedrich-Loeffler-Institut, Institute of Bacterial Infections and Zoonoses in Jena, Germany. The main areas of his interest are development of diagnostic products; proteomics, epidemiology, molecular epidemiology and microbiology of pathogen level 3 agents (*Brucella* spp., *Francisella tularensis*, *Burkholderia mallei/pseudomallei*, *Bacillus anthracis*, *Yersinia pestis*).

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