

## **Comparison of PCR assay with serum and whole blood samples of experimental trials for detection and differentiation of *Brucella melitensis*.**

### **Abstract**

Brucellosis poses a significant animal and public health problem in many developing countries and requires fast and accurate diagnosis. A PCR assay amplifying part of the *Brucella melitensis* specific IS711 gene was developed and applied to mice clinical samples on an experimental trial. Over an 8 week period of infection, whole blood and serum were examined from 78 experimental mice, with a total of 60 samples from *B. melitensis* infected mice and a group of 96 control samples from mice inoculated with *Brucella abortus* 544, *Yersinia enterocolitica* O:9 and *Brucella* broth. Regardless of date of infection, the sensitivity of whole blood and serum based PCR assay with samples from *B. melitensis* infected mice was found to be 100% (30/30) and 83.3% (25/30), respectively. Serum samples collected at 60 days post infection (p.i) of *B. melitensis* failed to show a positive result. An amplicon of 252 bp was obtained in all PCR positive samples. All samples obtained from the control groups tested negative, conferring an assay specificity of 100%. These results show that the use of serum-PCR may lead to assay simplification and shorten turnaround time, but the optimal clinical specimen for this test was not serum but whole blood, which leads to maximum assay sensitivity

**Keyword:** *Brucella*; IS711; Mice; PCR; Serum; Whole blood.