

## Diversity of Humoral Immune Responses to Recombinant Proteins of *Brucella abortus* Among Residents in Cheju Province

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Brucellosis is one of the major zoonoses infecting both humans and animals worldwide. Recent increase in bovine brucellosis, caused by *Brucella abortus*, in Korea would bring chances of human infection by the organism, particularly among farmers, veterinarians, and workers at the slaughter houses. Laboratory diagnosis of human brucellosis relies mainly on serological tests including agglutination test with whole cells consisting mainly of lipopolysaccharide (LPS) in the surface. However, due to similarity of LPS between *B. abortus* and *Escherichia coli* and *Yersinia enterocolitica*, protein antigens of *B. abortus* have been explored for use in serodiagnosis. Previously, we reported expression of 16.5 kDa, 18 kDa, 26 kDa, and 39 kDa antigens of *B. abortus*. In addition, we cloned and

expressed *eryC* gene encoding ERC protein of *B. abortus* in *E. coli*. In this study, we investigated serological reactivity to five recombinant proteins and LPS by ELISA among residents in Cheju province which has the highest prevalence of *B. abortus* infection in cattle for a long time. Of over 500 residents examined, seropositive rate was 3.3% to r16.5%, 2.8% to r26 kDa, 3.4% to r39 kDa, 1.6% to ERC protein, and 1.0% to LPS. However, few serum samples showed positive to more than two antigens used in this study, indicating marked diversity of antibody responses to *B. abortus* antigens. Further analysis using sera from cattle infected naturally with the organisms requires to define humoral immune responses in *B. abortus* infection process.