

## **Identification of Secreted Antigen 3 from *Babesia gibsoni***

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### **Abstract**

A cDNA expression library of *Babesia gibsoni* was screened with the serum collected from a dog experimentally infected with *B. gibsoni*. A novel antigen sharing homology with secreted antigen 1 of *B. gibsoni* was isolated. The genomic analysis indicated that the BgSA3 gene exists as multicopies in the genome of *B. gibsoni*. The putative peptide encoded by the BgSA3 gene showed some characteristics of secreted proteins. The serum raised in mice immunized with the recombinant BgSA3 expressed in *Escherichia coli* could recognize a native parasite protein with a molecular mass of 70 kDa. Moreover, a sandwich enzyme-linked immunosorbent assay with anti-BgSA3 antibodies could detect the circulating BgSA3 in the blood plasma of dogs experimentally infected with *B. gibsoni*. The identification of BgSA3 provided a useful target for the development of a diagnostic test for detecting specific antibodies and circulating antigens.