# Detection and Quantification of Duffy Antigen on Bovine RBC Membranes Using a Polyclonal Antibody

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Babesiosis, transmitted by *Babesia spp*., is one of the most important diseases affecting cattle business worldwide. The genera *Babesia* and *Plasmodium* are Apicomplexa hemoparasites and share features such as red blood cell (RBC) invasion process. However, there is little information on molecular interaction between Babesia parasite and its receptors on bovine host cell surface. Glycoprotein Duffy is the only human erythrocyte receptor for *P.vivax* and a mutation which abolishes expression of this glycoprotein on erythrocyte surfaces is responsible for making the majority of black African people resistant to *P. vivax* parasite. Moreover, animals from subspecies *Bos taurus indicus* are more resistant to babesiosis than those from *Bos taurus taurus*. In order to investigate if this resistance is due to the absence or lower expression of Duffy antigen gene on *Bos taurus indicus* RBC surfaces this work detected and quantified Duffy antigen on erythrocyte surfaces of *Bos taurus indicus* and *Bos taurus taurus* since these subspecies have 99,6% of identity in their *Duffy* gene DNA sequence. A polyclonal antibody was produced in mice by means of a synthetic decapeptide corresponding to aminoacid 34 to 43 of N-terminal extracellular domain of bovine Duffy and tested by indirect and blocking ELISA in microplates coated with RBC membranes from both subspecies. These assays showed that the antibody elicited could detect the presence of Duffy antigen in RBC from both subspecies and quantitative analyses revealed that the amounts of this antigen on those erythrocyte membranes are similar. These results suggest that *B. taurus indicus* higher resistance to babesiosis can not be explained by the absence or lower expression of Duffy antigen on RBC surfaces.

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