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PREFERENTIAL MULTIPLICATION OF *BABESIA GIBSONI*
IN RETICULOCYTES *IN VITRO*

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In order to clarify the effect of age of host erythrocytes on the multiplication of *Babesia gibsoni*, parasitized erythrocytes were mixed with either reticulocytes (culture A), or mature erythrocytes (culture B) from dogs made anemic by phlebotomy, and incubated at 37°C for 9–14 days at hematocrit (Ht) values of 3% and 10%. At the onset of culture, reticulocyte counts were 66.0–98.8% in culture A and 0% in culture B, and the percentage of parasitized erythrocytes was 0.3% in both cultures.

The results were as follows: (1) In culture A with an Ht value of 3%, the percentage of parasitized cells linearly increased associated with the increase of hemoglobin in the medium, reached 28.8% at day 7 and then gradually decreased. A large number of poikilocytes, e. g. fragmented red cells and microspherocytes, were observed on days 7–14. When reticulocytes were suspended in the medium at an Ht value of 10%, the percentage of parasitized cells was not increased, and a severe hemolysis was observed during incubation even in control culture. (2) In culture B, the highest percentage of parasitized cells was only 2.5% on day 5. Neither hemolysis nor poikilocytes were observed during incubation. (3) The concentration of cellular ATP increased to 1.6-fold that of the initial value when the percentage of parasitized cells reached 25.9% in culture A, followed by a decrease with a simultaneous decrease in the parasitized cells.

These results clearly demonstrated that *B. gibsoni* preferentially multiplied in reticulocytes rather than mature erythrocytes, and that host cells were strongly damaged by the multiplication of the parasites.