Abstract

Anaplasma marginale, intracellular bacteria causes bovine anaplasmosis, characterized by progressive anemia, fever, decrease in body weight and death occasionally. The use of A. marginale in vitro cell culture - derived has been suggested as an alternative for development new prevention tools and control strategies. The purpose of this study was to establish the in vitro culture procedure in bovine corneal or umbilical cord and monkey retina endothelial cell lines. These were subsequently exposed to A. marginale infected erythrocytes. Different staining methodologies, immunofluorescent antibody assays or genome detection tests were used in an attempt to demonstrate the invasion of nucleated cells. In all cases, only negative results were obtained and no cytopathic effects observed; when the co-cultivation methodology was applied, it was blunt the fact that if endothelial cells are present, A. marginale can be preserved longer periods than cultivating infected erythrocytes alone. Susceptible cattle were inoculated with culture-derived biological material, and samples taken to monitor physiological variables, rickettsemia and immune response against the bacteria. Animals did not show clinical signs of anaplasmosis. Even though a calf inoculated with the cornea cell line co-cultivated with infected erythrocytes, showed antibody against A. marginale; endothelial cell lines involvement in Anaplasma marginale infection could not be clearly demonstrated in this study.

Keywords

Anaplasma marginale, Culture, Endothelial cells.