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ULTRASTRUCTURAL AND CYTOCHEMICAL STUDY OF Tritrichomonas foetus RAT EOSINOPHIL INTERACTION.

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Tritrichomonas foetus is a parasite of the urogenital tract of cattle where it exerts its pathogenic effects. There are some evidences that a variety of white blood cells like neutrophils and tissue macrophages are important in the pathogenicity mechanisms of these microorganisms but nothing is known about the interaction between them and eosinophil leucocytes. In this work we analysed in vitro the process of interaction of T. foetus with eosinophils by electron microscopy (by cytochemical localization of basic proteins and peroxidase activity). We used eosinophils obtained from the peritoneal cavity of Am-1 Tor rats by discontinuous metrizamide gradient. The cells were allowed to interact with trypsin-treated or antibody-coated parasites in a parasite-eosinophil ratio of 5:1 during 15 min at 37ºC. After interaction the cells were fixed in a solution containing 2,5% glutaraldehyde and 5mM $CaCl_2$ in 0,1M cacodylate buffer, pH 7,2 for 60 min at 4ºC and post-fixed in a solution containing 1% osmium tetroxide and 5mM $CaCl_2$, supplemented with 0,8M potassium ferrocyanide, dehydrated and embedded in Epon. For cytochemical detection of major basic proteins after glutaraldehyde fixation the cells were dehydrated in ethanol and incubated for 2h at room temperature in 2% PTA in absolute ethanol and embedded in Epon. For cytochemical detection of peroxidase activity, after glutaraldehyde fixation the cells were incubated for 1 h at room temperature, in the dark in a medium containing 0,5 mg/ml DAB, 0,01% hydrogen peroxide and 0,05 M Tris-HCl buffer, pH 7,4. Then the cells were post fixed and processed for electron microscopy as described above. Images were obtained showing that hyperimmune serum is required for both attachment and ingestion of the parasites. The cytochemical localization of major basic proteins and peroxidase leucocyte granules fused with parasite-containing phagocytic vacuoles and that the binding of the parasites to the eosinophils surface triggers an exocytic process with release of the granule content into the parasite surface.

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HEMOLYTIC ACTIVITY OF TRICHOMONADS OF GENUS Trichomonas DONNÉ, 1837 and Tritrichomonas KOFOID, 1920.

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The hemolytic activity of Tritrichomonas foetus strains (SP, RJ, and KV1), T. suis strain (SM), Trichomonas vaginalis strains (JT2, Y and U) and T. gallinae strains (PAP11, PAP12, PAP13 and PAP14) was investigated. The isolates of different trichomonads were tested against human erytrocytes. No hemolytic activity was detected by the isolates of genus Tritrichomonas. Whereas the strains of genus Trichomonas lysed all human blood groups. All isolates presented an hemolytic activity from 11 to 98%. Our preliminary results suggest that the hemolysis depends on the susceptibility of red cell membranes to destabilization; on the intervention of cell surface receptors in the mechanism of the hemolytic activity and the hemolysis mechanism could be subject to strains-genera-species specific variation of trichomonads.

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