

Immunization of virgin cows with surface antigen TF1.17 of *Tritrichomonas foetus*.

BonDurant RH¹, Corbeil RR, Corbeil LB.

⊕ Author information

Abstract

Protection by surface antigen TF1.17 of *Tritrichomonas foetus* was investigated because it reacted with a monoclonal antibody which immobilized and mediated complement killing of the organism and prevented adherence to vaginal epithelial cells. This monoclonal antibody was used to demonstrate conservation of the antigen in most strains and to immunoaffinity purify the 50- to 70-kDa glycoprotein antigen. In preparation for immunization studies, the appropriate challenge dose of parasites was determined by intravaginal inoculation of 23 virgin cows (heifers) with 10(2), 10(4), or 10(6) live organisms at the time of estrus. More animals became infected and vaginal infection was maintained at a higher rate ($P < 0.005$) over 10 weeks for the group that received 10(6) organisms than in the other two groups. Therefore, this dose was used for challenge of immunized animals. Animals immunized with immunoaffinity-purified TF1.17 antigen in incomplete Freund's adjuvant or incomplete Freund's adjuvant plus dextran sulfate cleared the infection more quickly than adjuvant controls ($P < 0.005$). Isotype-specific enzyme-linked immunosorbent assay with *T. foetus* antigen showed that serum immunoglobulin G1 (IgG1) and IgG2 antibody responses as well as cervicovaginal mucus IgG1 and IgA antibodies peaked at about the time of clearance of infection in vaccinated animals. Controls developed later cervicovaginal mucus IgA antibody responses as would be expected in a primary local immune response to infection. These results indicate that vaccination with this immunoaffinity-purified surface antigen of *T. foetus* enhances antibody responses as well as clearance of the parasite from the female reproductive tract.