

Subunit vaccine based on the p67 major surface protein of *Theileria parva* sporozoites reduces severity of infection derived from field tick challenge.

Abstract

Two recombinant vaccines against *Theileria parva*, based on a near full-length version of the sporozoite surface antigen p67 (p67(635)), or an 80 amino acid C-terminal section (p67C), were evaluated by exposure of immunized cattle to natural tick challenge in two sites at the Kenya Coast and one in Central Kenya. Vaccination reduced severe ECF by 47% at the coast and by 52% in central Kenya from an average incidence of 0.53 \pm 0.07 (S.E.) in 50 non-immunised controls to an average of 0.27 \pm 0.05 in 83 immunised animals. The reduction in severe East Coast fever was similar to that observed in laboratory experiments with p67(635) and p67C. The p67 coding sequence from thirteen *T. parva* field isolates including seven from vaccinated cattle that were not protected, was 100% identical to the gene on which the recombinant vaccine is based, suggesting a predominantly homologous p67 antigenic challenge. The same parasite isolates were however genetically heterogeneous at several loci other than p67