Category E justification

Registration Number: 91-G-0001

Research Facility Headquarters: ADRU

Number of animals used in the study: 15

Species by common name: cattle

Explain the procedure producing pain and distress

Inoculation of cattle with Theileria parva, which causes East Coast Fever is used for two purposes. First, ticks must be fed on infected animals to produce T. parva infected tick salivary glands, which is the infectious stage of the organism. The tick salivary glands are then used in immunization and challenge experiments with the goal of developing a recombinant vaccine.

Provide scientific justification for not providing the appropriate anesthetics, analgesics, or tranquilizing drugs during the procedures where the animal experienced accompanying pain or distress greater than momentary or slight.

We must allow cattle to develop clinical disease in order to generate infected ticks and measure the protective capacity of vaccine candidates. Cattle infected with *Theileria* sp. often develop sustained, high fevers (105-108 degrees F), as well as pulmonary edema and pleural effusion. Although we provide supportive care in the form of oral electrolyte therapy, NSAIDs (flunixin meglumine), and diuretics (furosemide) to ease these clinical signs, animals often remain febrile (although to a lesser extent) and may experience sustained, mild respiratory compromise. Although our treatments make the clinical manifestations of these infections less severe, the animals remain distressed.