

Registration Number: 98-A024 Hurley

Number 38 total, 24 Column E of animals used in the study (during the reporting period).

Species Bovine (cattle)

**Explain Procedures producing pain/ or distress:**

The calves used in the study were monitored at 0, 4, 8, 12, 18, 24, 36 and 108 hours after birth to follow the distribution of maternal cells in their circulation and/or to evaluate the alloantigen response development of the calves. The animals had 2-3 ml of blood drawn from the juglar vein at each time point. Handling the animals and drawing blood this often over such a short period was the reason they were included among the column E animals. No other invasive or distressing procedures were conducted with these animals.

All calves were taken from the standing Dairy herd at SDSU.

Cows used in the study had multiple blood samples (4-8) of ~10ml drawn over a 10-14 day period to assess the degree of MHC relation among them. A subset of these animals were also drawn each day for use in the alloantigen evaluation listed above. The increased number of blood samples taken and increased handling of the cows over this short period was the only reason for inclusion under column E.

**Provide scientific justification why pain/or distress could not be relieved. State methods or means used to determine that pain and/or distress relief would interfere with test results.**

To the best of our knowledge, there is no appropriate means to relieve the distress of the calves in being repeatedly handled that does not pose similar or greater problems to the animals than the blood drawing procedure undertaken. The animals would require further handling to administer drugs to sedate them and the blood drawing procedure generally proceeded quickly, requiring about 5-10 minutes per animal. The animals did not appear to suffer harm from the removal of blood itself. Therefore, no method was appropriate.

Similarly, the cows tolerated the handling and blood drawing quite well. It was only the frequency of handling and blood collection that was a concern to our committee. No treatment posing lower distress or hazard to the animals was available to relieve the stress of handling or the small discomfort of blood drawing.

## Column E Explanation

1. Registration Number: 98-A001
2. Number of animals used in this study: 27
3. Species (common name) of animals used in this study: Bovine

4. Explain the procedure producing pain and/or distress.

This project includes repeated blood sampling for serum neutralization assays on seven days over a 42-day period. Additionally this procedure involves challenge of animals with a virulent respiratory virus (PRSV).

5. Provide scientific justification why pain and/or distress could not be relieved. State methods or means used to determine that pain and/or distress relief would interfere with test results.

Repeated blood samples from these same animals is needed to monitor response to vaccination protocols over time. Pain and distress associated with virus challenge (PRSV) cannot be relieved without altering the expected clinical course and subsequent evaluation of vaccination protocol.

6. What, if any, federal regulations require this procedure? Cite the agency, the Code of Federal Regulations (CFR) title number and the specific section number.

Agency: APHIS      CFR: 9CFR