## Column E Explanation

Annual Report of Research Facility
FY: 2019

1. Registration #: 72-R-0003

2. Number of animals categorized as column E used in this study: nine (9)

3. Species (common name) of animals used in this study: horse

4. Explanation:

The horses in this study received an intravenous administration of either saline, lipopolysaccharide (LPS, a bacterial component used to stimulate a systemic inflammatory response), or LPS + pentoxifylline (PTX, an anti-inflammatory drug). The treatments were administered via an IV jugular catheter that was placed following aseptic preparation of the skin. A local anesthetic (lidocaine) was injected at the catheter site to prevent discomfort during the procedure. Therefore, the horses experienced minimal to no discomfort during the catheter placement.

The dosage of LPS administered in this study is considered humane and has been used in numerous previously published equine studies. All horses in this study receiving LPS experienced mild, transient clinical signs including: increased heart rate, increased respiratory rate, increased body temperature, mild depression, and mild signs of colic. If any horses had experienced more than mild clinical signs (severe depression or severe colic signs such as rolling), they would have been removed from the study and treated with appropriate anti-inflammatories, analgesics, and fluid therapy.

5. Why anesthetics, analgesics and tranquillizers could not be used:

The purpose of this study was to determine the effects of systemic inflammation on concentrations of inflammatory biomarkers in the blood of horses and the effects of treatment with PTX on these biomarker concentrations. Therefore, it was necessary to elicit a systemic inflammatory response in the horses in this study using LPS administration. Drug intervention with anti-inflammatories, anesthetics, analgesics, or tranquilizers would have confounded the results of the study, as these drugs would have either suppressed the inflammatory response or prevented proper assessment of the horse's clinical status. Therefore, treatment for the mild, transient clinical signs observed in the horses receiving LPS could not be administered. However, as previously stated, if any horse had experienced more than mild clinical signs, that horse would have been removed from the study and treated with appropriate anti-inflammatories, analgesics, and fluid therapy.

6. What, if any, federal regulation require this procedure?

N/A