

Column E Explanation

Registration Number: 34-R-0001

Project 1: Three Macaques (Not required by federal mandate)

Procedure: Animals are restrained in chairs for periods less than 8 hours. The restraint occurs to facilitate behavior studies. During the studies the animals' heads, and/or arms may be physically restrained. Although the animals are trained and acclimated to the physical restraint, they may experience unrelieved distress from the procedure.

Reason pain relieving medications cannot be used: The animals are expected to experience the most distress during the acclimation process at which time they will receive sedation if necessary. However, no sedation can be used during the behavior procedures since the drugs would interfere with the studies.

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Project 7: Nine Piglets (Not required by federal mandate)

Procedure: New born piglets will be feed artificially rather than being permitted to suckle on the sow. This lack of interaction with the sow may result in more than momentary distress.

Reason: The study requires animals to receive a controlled and regular diet with a total lack of parenteral nutrition.

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Project 2: Five Pigs (Not required by federal mandate)

Procedure: The pigs undergo major abdominal surgery, and each is physically restrained for up to 12 hours in a recovery sling. The restraint is used as each animal recovers from the anesthesia. Each animal may experience unrelieved distress during the restraint period.

Reason pain relieving medications cannot be used: The animals are restrained while they are waking from anesthesia. Consequently, additional sedation cannot be used.

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Project 6: Two Rabbits (Not required by federal mandate)

Procedure: Rabbits will experience LPS-induced sepsis through injections that are expected to affect immune cells and induce vital organ damage.

Reason pain relieving medications cannot be used: Analgesics cannot be used in this experiment as they tend to affect physiological parameters including blood pressure which would affect the results and aims of the experiment. Sepsis models in general have the potential for increased morbidity and mortality and can progress quickly to a moribund state. They also cause significant disruption to physiologic systems. The aim is to see if the septic state can be alleviated by treatment with various pharmacological agents. If animals are in distress, euthanasia will be considered as a means to alleviate pain, suffering, or when close to death.

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Project 5: Four Guinea Pigs (Not required by federal mandate)

Procedure: Awake guinea pigs will be exposed to sound levels that may cause unrelieved pain and distress to the animals, and eventually result in permanent hearing loss.

Reason pain relieving medications cannot be used: The level of noise stimulation used is below the pain threshold for humans. Temporary hearing loss occurs very rapidly and during this procedure the animals appear calm. If anesthesia were to be used, animals may fall asleep on one side and one ear will be covered, such that the noise will influence each ear differently thereby increasing the variability of the results. From all observations in these studies, during the noise exposure and following the exposure, no behaviors have been observed which indicate that the animals are in any way stressed or in pain by the exposure for which anesthetics or analgesics would be utilized.

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Project 4: Eleven Guinea Pigs (Not required by federal mandate)

Procedure: The animal's ability to move around the cage is limited for 2-4 hours a day due to a tethering process that's used during behavior studies. The tether will prevent the animal from twisting or turning 90 degrees in the cage, but does not interfere with their ability to access food and water. Although the animals are slowly acclimated to the tethering system; the procedure may result in unrelieved distress.

Reason pain relieving medications cannot be used: The behavioral and psychological studies must be conducted while the animals are alert and facing forward. The use of anesthetics and sedatives would prevent the animals from participating in the behavior studies.

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Project 3: Thirty-eight Sheep (Not required by federal mandate)

Procedure: Sheep are housed in stanchions for up to 30 days post-surgery. The animals are able to stand, sit, and change positions, but they are not able to turn around in the cage. Although the sheep display no signs of distress, the potential exists for them to experience unrelieved distress.

Reason pain relieving medications cannot be used: After surgery, each animal is connected to numerous lines and tubes that are used for physiological monitoring, infusion of IV fluids and medications, and to ensure oxygen gas flow. During this time, the animals must be housed in the stanchion to facilitate physiological measurements and ensure appropriate care. Consequently, the animals are being housed using this process and cannot be sedated.

Summary of IACUC Approved Exceptions

Husbandry exceptions:

1. Based on research design and needs the IACUC has approved housing sheep in stanchions for up to 30 days, which is an exception from the defined housing requirements in the AWARs. Thirty-eight sheep experienced stanchion housing.
2. The IACUC approved housing incompatible animals singly, which is an exception to the housing requirements. Currently:
 - a. Five non-human primates are being singly housed due to incompatibility; and
 - b. on occasion rabbit males are also singly housed due to incompatibility.
3. The IACUC has approved housing piglets in a space smaller than the *Guide* recommendations while an IV catheter tethering system with jackets and cages are being utilized. In order to improve animal welfare, the neonatal pigs were made more comfortable in a closer space while still being able to make normal postural adjustments. Nine piglets have experienced the smaller housing space.