



14 November 2019

Reference: Registration No. 64-R-0001, USDA Annual Report of Research Facility

FY 2019 APHIS Form 7023 Column E Explanation:

- 79 rhesus macaques (*Macaca mulatta*) underwent whole body irradiation as a part of an IACUC approved protocol designed to assess the potential of antibiotics as a medical countermeasure to mitigate infection resulting from acute exposure to radiation which could arise in the human population secondary to a radiological or nuclear event, e.g. a “dirty” bomb or nuclear accident. Based on veterinary treatment recommendations, the pain and distress of these animals was mitigated using analgesics, antipyretic agents, food supplements, oral electrolyte supplements, and anti-emetics. The SR IACUC decided that since the pain and distress caused by irradiation and the extent to which that pain and distress was able to be relieved varied, animals undergoing whole body irradiation should be classified into USDA Pain and Distress Category E.
- 1 ferret (*Mustela putorius furo*) used on an influenza challenge protocol developed clinical illness and is considered to have experienced some degree of unrelieved pain and/or distress secondary to influenza challenge. The withholding of anesthetics and analgesics was approved by the SR IACUC after justification by the Study Director who stated:
 “Illness experienced by challenged animals must not be treated with analgesics, as this would compromise the scientific integrity of the study, mask the pathogenesis of the disease, obscure secondary efficacy parameters such as amelioration of clinical signs, could inadvertently accelerate the disease process, and confound the interpretation of euthanasia criteria. Importantly, the use of analgesics could alter the pathogenic and immunologic response to infection, thus making it impossible to interpret the data obtained in this study. Narcotic analgesics were shown to interfere with the mechanism(s) responsible for interferon production (Geher, W.F. et al., J. Toxicol Environ Health 2:577-582, 1977; Hugh, C.Y. et al. Proc Soc Exp Biol Med 142:106-111, 1973). Moreover opioids can suppress Natural Killer (NK) cell activity (Beilin, B., et al. Brain Behav Immun 3:129-137, 1989). Also analgesics including buprenorphine can cause histamine release (Marone, G., et al. Int Arch Allergy Immunol 124:249-252, 2001; Stellato, C., Ann NY Acad Sci 406:32-47, 1995). Histamine is a well-known inflammatory mediator and plays a central role in the pathogenesis of allergic and inflammatory diseases by modulating vascular and airway response. Histamine has been shown to induce activation of human macrophages (Mozzoni, A., et al. J Immunol 170:269-2273, 1999), inhibit interferon alpha release from dendritic cells (Marone, G., et al., Int Arch Allergy Immunol, 124:249-252, 2001) and increase the synthesis and release of IL-10 from human macrophages (Sirois, J., et al. J. Immunol 164:2964-2970, 2000). Clearly, the



analgesic-induced release of histamine would directly interfere with the inflammatory process. Studies by Piersman et al, (Lab Anim 33:328-333, 1999) provide an additional example of how analgesics may modify the expression of the disease process. These investigators, using an established murine model of endotoxemia, showed that the opioids fentanyl and buprenorphine directly altered the outcome of their experiments by modulating the immune response. In this case, both opioids caused significant decreases in circulating levels of tumor necrosis factor alpha following administration of lipopolysaccharide (LPS)."



Southern Research's IACUC called committee convened on Thursday 04 APR 2019 at 8:00 a.m. CST at Southern Research (SR), in Birmingham, Alabama and at 9:00 a.m. EST at Southern Research (SR-F), in Frederick, Maryland. Both sites communicated via teleconference.

The following participants were present:

Birmingham Site		Frederick Site	
Participant	Voting Status	Participant	Voting Status
IACUC Member 48	Voting	IACUC Member 13	Voting
IACUC Member 4	Voting	IACUC Member 15	Voting
IACUC Member 9	Voting	IACUC Member 22	Voting
IACUC Member 14	Voting	IACUC Member 38	Voting
IACUC Member 28	Voting	IACUC Member 71	Voting
		IACUC Member 40	Non-Voting

The following members were not present:

Participant	Voting Status	Reason
IACUC Member 49	Voting	Work
IACUC Member 63	Voting	PTO
IACUC Member 74	Voting	Work

The Chairperson called the meeting to order at 8:00 am CST and stated this was a called meeting to discuss the current housing situation of NHPs housed in (b) (4). She explained the current housing of the pair-housed animals is less than the required floor space, and this needed to be brought to the attention to the committee.

Currently there is a group of 50 cyno- Group 3 monkeys that are under 10 kg. 44 of these animals are being socially housed in vertical cages (on loan from another Institution), so they only have the floor space, based on AWA requirements and Guide Recommendations for one animal. The Guide states that NHPs of this size need 8.6 sq. feet of floor space and vertical height of 30". These animals have 6.2 sq. ft. of floor space and a vertical height of at least 64". The internal cage volumes are similar for horizontal and vertical cage configurations but since this amount of floor space is a departure from the Guide, this must be approved by the IACUC. There are 2 perches (one high and one low) per pair of animals for additional resting space. In vivo technicians are observing the animals more frequently since they are being acclimated to FOB (Functional Observation Battery) testing and they are making certain there is no negative impact to the animals. There have not been any observations of abnormal behavior or fighting.

Member 4, the Attending Veterinarian attests all the animals are doing well and in his judgement he feels they are better off housed socially. He mentioned that there is no functioning interlock to match the cages side by side. Hence, this is the only way to socially house the animals. Member 15 feels that the use of the vertical space is acceptable. Statements from the Guide and AWARs were reviewed.



There will be two studies for these animals. One ends in May and one in July. Several cage clips which connect the rack together are bent or broken. If there is something that can be fabricated or bought or if any repairs can be made which would allow for a horizontal cage configuration this will be done.

A motion was made to approve the current housing situation while the Responsible Scientist (RS) writes an Amendment to the ACUP detailing this social housing situation (amendment to follow). A second was given and by voice vote the motion was approved. The Chairperson will contact the RS and have her write the Amendment.

A motion was made to adjourn the meeting, a second was given and the meeting adjourned at 9:30 am CST.