

CAT E justification for protocol IS00009004 for Guinea Pigs–FY22- USDA 58-R-0015- University of South Florida

Guinea pigs receiving hyperoxia may experience discomfort and are therefore placed in USDA Pain Category E.

Guinea pigs undergoing hyperoxia (oxygen levels more than 75%) may have some pain and distress. Although hyperoxia in guinea pigs may cause animal discomfort, experimental animals subjected to hyperoxia manifest the hyperoxic heart injury necessary as a model to study the underlying changes. To avoid discomfort/pain animals will be monitored for signs of respiratory difficulty and euthanized if there are signs of respiratory distress. Although the use of hyperoxia may cause some pain/discomfort to guinea pigs, we will not be using any analgesics, anesthetics or tranquilizers. The main goal of the study is to investigate effect of hyperoxia on cardiovascular remodeling (electrical remodeling, functional and structural remodeling), and many reports suggest the influence of anesthetics (PMID: 31082134), analgesics (PMID: 9694923; PMID: 26461073; PMID: 6328399), and tranquilizers (PMID: 21570617). Use of these drugs may interfere with cardiovascular physiology and therefore will not be used in our study.