Use of Replication-Defective Adeno-Associated Viral Vectors in Rodents

Introduction

While Adeno-associated virus (AAV) is not known to cause disease in healthy adult humans, recombinant AAV vectors are considered recombinant DNA and are thereby subject to the NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules. Per the *NIH Guidelines*, all recombinant DNA must be inactivated/treated prior to disposal. This may be done either via (1) chemical treatment, (2) autoclaving the AAV vector waste on-site, or (3) disposal as medical waste for treatment by UCLA's vendor.

When AAV vectors are administered to animals, there is the possibility that the recombinant vectors could be excreted (shed) in the animal's urine and feces. As a result, the bedding from rodent experiments could contain recombinant DNA. It is estimated that shedding could occur for the first 72 hours following vector administration.

Policy

Rodents containing AAV vectors which the IBC has determined can be handled at BSL-1/ABSL-1 may be housed in disposable or reusable cages; however, the cages must be changed only by the laboratory staff for the first 72 hours post-administration of AAV vectors. Bedding from the first cage change and any additional cage changes taking place in the first 72 hours post AAV vector administration must be disposed of as biohazardous waste. If disposable cages are used, the entire cage should be disposed of as biohazardous waste.

It is the responsibility of the PI/researcher to bring the appropriate biohazardous waste bags and secondary medical waste containers to the location where cage changing will take place to accommodate this requirement. Following 72 hours post AAV vector administration, the cage change label should be removed and DLAM staff may then take over cage changing responsibility.

Carcasses and tissues from animals exposed to AAV vectors do not need to be disposed of as biohazardous carcass waste and can instead be disposed of as nonbiohazardous carcass waste, which are sent out for incineration.

This policy applies only to replication-defective AAV vectors that the IBC has determined can be handled safely at BSL-1/ABSL-1. Based on the IBC's risk assessment of individual research applications, additional restrictions or requirements may be placed on experiments involving AAV vectors.

References

1. EH&S SOP: Handling of Recombinant AAV-injected Rodents at BSL-1 Containment
2. EH&S Medical Waste Fact Sheet: https://ucla.app.box.com/ehs-bio-mwm-fact-sheet
3. Reuter, JD, et al (2012) Assessment of Hazard Risk Associated with the Intravenous Use of Viral Vectors in Rodents. Comparative Medicine: 62(5): 361-370.