



Institutional Animal Care and Use Committee

February 20, 2008

Guidelines for Satellite Housing of Ectothermic Vertebrates (including Zebrafish)

The *Guide for the Care and Use of Laboratory Animals* states that “An appropriate environment should be provided for nontraditional species, and for some species it might be necessary to approximate the natural habitat.” Deviations from practices commonly encountered in the care of laboratory mammals will be encountered in rooms housing ectothermic vertebrates, including fish, frogs, lizards, turtles, snakes, etc. Ectotherms have a broad range of husbandry requirements that differ substantially from those of standard laboratory mammals and substances and conditions and practices commonly used in the care of mammals may harm ectothermic vertebrates. Thus, a conservative approach favoring natural conditions is preferable. Ectothermic vertebrates typically require non-standard procedures that affect four general areas of animal care: 1) Room/Cage/Tank Sanitization, 2) Climate, 3) Housing and 4) Feeding.

A written Standard Operating Procedure (SOP) that addresses these 4 areas for the particular ectothermic species to be housed in a satellite location should be developed, submitted to the IACUC for approval and then posted in each satellite housing area to be maintained. The following topics must be addressed in the SOP:

1. Room/Cage/Tank Sanitization:

The goal of sanitization is to minimize disease. However, certain products routinely used for this purpose in mammalian housing areas (e.g. detergents, disinfectants, processed water and others) may be harmful to some ectothermic vertebrates. For example, low levels of chlorine in tap water are sufficient to kill many species of fresh water fishes and larval amphibians and many cleaning solvents are detrimental to the health of some reptiles. More appropriate practices with ectotherms involve periodic cleaning, but not necessarily sanitization of cages, tanks or rooms used to house these animals. ***The modified sanitization procedures that will be performed at stated intervals and recorded in the log for each room should be included in the SOP that the PI develops for the particular ectothermic species to be housed in the satellite facility.***

2. Climate

Airflow requirements for mammals do not apply to ectotherms, particularly aquatic species, and may not be attainable given the limitations imposed by other requirements. Appropriate temperatures may range from 4° to 40° C. Appropriate relative humidity may range from 10 to 100%. For many species, room climate control is not necessary because localized temperature control in cages is required. Often a climate gradient is preferred so that individual animals can choose their conditions depending on activity. For some species, lights may serve as sources of heat or specific wavelengths may be required for proper health. ***The SOP should outline the general climate conditions that are optimal for the species to be maintained and describe how those will be obtained. The conditions must be regularly monitored and records maintained for each satellite facility.***



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3. Housing:

Tanks, cages, or other housing arenas may have specific design requirements that do not conform to mammalian requirements. Minimal space requirements vary depending on activity levels and other features of the species. Some species may require live vegetation, paper, wood, dirt, mud or water as bedding or substrate. Some cages or tanks must be cleaned with the animal(s) present or while it is in temporary holding. Other devices may be required for transfer, such as containment bags, boxes, nets, hooks, poles, nooses or brooms. ***The SOP should describe the housing containers and substrate and the schedule for cleaning/replacing the bedding or substrate (e.g. water) as appropriate for each species. This should also be documented in the log for the satellite housing area.***

4. Feeding

Some ectotherms do not require daily or ad libitum access to food or water. Feeding should take place on a schedule *appropriate for the species*, and may range from daily to monthly (some snakes). Some species do not require water, while others thrive on occasional misting on the walls of the cage, and still others require constant immersion in water (fish). Live food is required for some species, and this must be kept at hand. When live vertebrates are required as food, this should be documented in the protocol and monitored. ***The SOP should describe the food and feeding schedule as appropriate for the species. Feeding must be documented in the daily log for the satellite housing area.***

The Principal Investigator is responsible for ensuring that the SOP is followed and that all of the tasks are completed and documented. Logs must be available for inspection. The PI is responsible for the safety and security of the animals in his/her satellite facility. The IACUC will inspect the satellite housing area before final approval is granted and also inspect the area during semi-annual facility inspections. All satellite areas must be accessible to the veterinary staff at all times.