

# Sam Houston State University Science Annex

## **Danio rerio Care**

SOP #: DR-001

Date adopted : \_\_\_\_\_

Last revision : \_\_\_\_\_

### **Purpose**

To explain the daily responsibilities associated with the care of *Danio rerio* or zebrafish.

### **Responsibility**

It is the responsibility of the Operations Manager of the Science Annex to ensure that all fish care needs are provided for while adhering strictly to the procedures outlined in this document.

It is the responsibility of the Principal Investigator to ensure that the Operations Manager is fully aware of any special requirements or treatments. Additionally, it is incumbent upon the Principal Investigator to address any care issues he or she observes with the Operations Manager.

### **Procedures**

*Danio rerio* are eurythermal and can be maintained anywhere from 24-30°C depending on the needs of the investigator, with 28.5°C being considered optimal. Likewise, zebrafish can tolerate a range of pH from 6.0-8.0.

A stocking density of five adult fish/L is maintained and zebrafish are always maintained in groups, as they prefer to shoal.

Water is kept free of chlorine and chloramines, which can be removed using a commercial product such as Nov Aqua Plus Water Conditioner.

Aquarium water must be subjected to both mechanical and biological filtration.

Special care must be taken to ensure that no amount of any cleaning product is introduced into the water supply, as this will likely kill the fish.

Substrate is not necessary but can certainly be used if a study so necessitates.

*Danio rerio* are maintained on a 12:12 photoperiod.

An activity log is maintained to keep track of feeding, aquarium cleaning, temperature, water quality, filter operation and fish condition. This log is to be kept on a secure, dry shelf near the aquaria.

Zebrafish are fed twice daily, with each feeding consisting of the amount of food consumed in 5 minutes. Commercially available floating fish flakes like TetraMin are suitable for subadults and adults. It is best to turn the filters off during feeding.

In the case of an adverse event, the Principal Investigator is to submit an Adverse Event Form to IACUC immediately.

### **Daily**

Observe animals daily for both general condition and habitat condition and record observations in the appropriate log.

Ensure that the filtration system is running properly.

Any animals showing any indication of illness, pain or distress are quarantined in a separate container for observation and the Principal Investigator is notified immediately.

Sweep the floor in the fish room.

### **Weekly**

Perform a 10% water change depending on observed parameters.

Rinse removable filters in tank water to remove debris build up.

Wipe down all shelves and surfaces with clean paper towels and water.

### **Monthly**

Gently mop the floor with a dilute veterinary grade disinfectant, being mindful not to allow any cleaner to splash onto equipment that contacts the fish or their water.

Conduct water tests for pH, ammonia and nitrites. Additional tests for water hardness and nitrates can be conducted as needed.