Fin Clipping Guidelines

Background

Fin clipping is a common practice that serves many purposes for studies involving fish. Fin clipping can be used as a form of identification in a collection of conspecifics and allow for identification for later recapture. The fin tissue can also be collected for analyses of genetics, contaminants, stable isotopes, or the generation of other data that can be used to define a number of parameters about an individual. Depending on the species being used, the experience of the researcher and the situation, the clipping of a fin can be quick, straightforward, and often results in minimal bleeding or clinical outcomes. Studies have shown that the fins of zebrafish begin to regenerate within a few days (Jáwińska and Sallin 2016) and that fin clipping in juvenile muskellunge did not compromise foraging behavior or growth in laboratory pools (Wagner et al. 2009).

Current literature does not provide consistent evidence indicating that fin clipping results in more than momentary pain or distress. Therefore, current policies for anesthetic use for fin clipping vary greatly at fish research facilities.

Field studies

There are several factors to consider when using anesthesia for fish in a field setting. Such considerations include the increased duration of time holding and handling fish when using anesthesia, how to manage anesthetic recovery and monitoring in a field setting, FDA withdrawal (holding) period following use of commonly used anesthetic MS-222, and difficulty in acquiring anesthetic approved for wild fish to be released immediately.

Laboratory studies

Guidance documents specific to zebrafish recommend the use of anesthetic agents, such as MS-222 for fin clipping procedures (Matthews and Sanders 2015, The Zebrafish Book, ZIRC manual). Anesthesia allows for ease of handling the fish, which can result in faster processing time. Minimizing fish movement could also prevent inadvertent injury to the fish and researcher due to improper technique.

Summary

The University of Illinois at Urbana-Champaign IACUC does not require anesthetic use for fin clipping. The purpose of anesthesia is to facilitate handling, thus improving procedural outcomes and ultimately animal welfare. The University of Illinois at Urbana-Champaign IACUC recommends the use of anesthetics when performing fin clipping in small (up to 8cm length) laboratory fish, such as zebrafish. A detailed description of the fin clipping procedure must be included in the animal use protocol and receive IACUC approval prior to researchers performing the procedure.

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