Xenopus Oocyte Harvesting via Laparotomy

**Purpose**
To define the IACUC policy regarding the harvest of oocytes from *Xenopus* (“African Clawed frogs”).

**Background**
Amphibian oocytes play an important role in molecular biology, embryology and biochemistry studies. The Office of Laboratory Animal Welfare (OLAW) requires scientific justification for multiple survival surgeries performed on any research or teaching animal. For example, a researcher might document in their protocol that they need to obtain an amount of genetic material from the same frog that is more than can be obtained during a single surgical procedure.

**Policy**
Multiple major surgical procedures on a single animal are acceptable only if they are included in and an essential component of a single research protocol, and it’s scientifically justified. (i.e., multiple surgeries on a single animal are justified considering consistency of oocyte quality and the reduction in the total number of animals used). The total number of laparotomies must be described in the approved animal care and use protocol. The total number of laparotomies approved per frog cannot exceed five (5) recovery surgeries (a 6th must be terminal) and will depend on the health and lifespan of the animal, as well as the duration of oocyte production.

**Procedure**
1. Surgeries must be performed by trained personnel using appropriate anesthesia, such as buffered, pharmaceutical grade, tricaine methane-sulfonate (MS-222). Contact the Office of the Attending Veterinarian at (530) 752-0514 for additional information pertaining to Xenopus anesthesia. Surgeries must be performed using sterilized instruments, materials, and non-powdered gloves.

2. Surgical/post-operative records must be maintained until the wound is healed or sutures are removed. Daily observations and treatments must be recorded on the post-operative record. An example [1] of a surgery/post-op record can be found here [2].

3. Post Procedural Care: Single housing or small group housing for several days after surgery should be considered as part of the post-surgical care of laparotomized animals. If recovering animals are to be housed with other frogs in different stages of recovery, they must be marked for easy identification. Frogs must be monitored at least daily during this period for appetite as well as any complications such as dehiscence or infection. Such adverse effects would be reasons for immediate euthanasia.
• A recovery tank should be prepared before the surgery is started.

• Frogs may be placed in a separate recovery tank when they are able to swim normally and where one or more post-operative frogs can be monitored more easily. Alternately post-operative animals may be returned to a home tank with a small enough population density so that they can be easily observed.

4. A minimum of one month recovery time is required in between survival surgeries. Investigators should consider rotating frogs so that the interval between surgeries is maximized for a particular animal, or alternating oocyte collection between the left and right ovaries.

Procedure: IACUC-33
Date: March 22, 2012
Enabled by: PHS
Supersedes: May 06, 2010

Contact

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More information
/institutional-animal-care-and-use-staff-listing [3]

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Source URL (modified on 12/29/15 05:52pm): http://ehs.ucdavis.edu/article/xenopus-oocyte-harvesting-laporotomy

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