

TITLE: OOCYTE HARVESTING IN *XENOPUS LAEVIS*

PURPOSE: To standardize oocyte harvesting in *Xenopus laevis*.

REVIEW/REVISIONS:

EFFECTIVE DATE: 4/1/200 - **Revised/ Re-Approved:** 12/7/00, 12/6/01, 11/2/06, November 1, 2007

(The guideline template for the U of A policy was revised and approved by the National Institutes of Health Animal Research Advisory Committee on April 13, 2005. The original template for the U of A policy may be located at <http://oacu.od.nih.gov/ARAC/oocyte.pdf>.)

PERSON(S) RESPONSIBLE: All University Animal Care and Research personnel charge with performing oocyte harvest in frogs.

POLICY/PROCEDURES:

The total number of laparotomies for oocyte harvesting must be limited and will depend on the condition of the animal and quality of the oocytes as well as the life span of the animal and duration of egg production. Up to five recovery surgeries (the 6th would be terminal) per animal are acceptable.

Surgeries must be performed by trained personnel using appropriate anesthesia such as tricaine methane-sulfonate (MS-222). MS-222 should have the pH adjusted (5-7) to minimize skin irritation. Surgeries must be done as aseptically as practical including the use of sterilized instruments and gloves. Instruments should be sterilized by autoclaving or using a glass-bead sterilizer. The use of cold sterilants should be avoided so that these potentially toxic chemicals are not inadvertently introduced into the surgical site or onto permeable amphibian skin. Animals should be placed in clean, fresh water following surgery.

The use of these chemical agents may disrupt the normal skin flora of the patient and the constant mucous production of *Xenopus* skin makes any sterilization effort transient. When chemical surgical preps are used, they should be limited to the immediate area around the incision site.

Post-surgical care of laparotomized animals should include single housing or small group housing for several days. Frogs must be monitored daily during this period for appetite as well as for any complications such as dehiscence or infection. Such adverse effects would be reasons for treatment or euthanasia.

Adequate recovery time of at least one month must be allowed between laparotomies for oocyte harvest. The investigator may alternate oocyte collection between left and right ovaries and consider rotation of frogs so that the interval between surgeries in any individual is maximized. Scientific justification must be provided for request of recovery times of less than one month which shall be individually reviewed by the IACUC.

JUSTIFICATION:

Amphibian oocytes are used for studies in molecular biology, embryology and biochemistry. Stage I-VI oocytes are obtained by surgical laparotomy. Multiple surgeries on a single animal may be justified considering the reduction in the total number of animals used over the long term. However, the total number of animals used must be considered relative to the pain or distress experienced by an individual animal.