

University of Vermont
Institutional Animal Care and Use Committee

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FROG OOCYTE HARVEST POLICY

Overview:

Xenopus frog oocytes are used for studies of molecular biology, embryology and biochemistry. Stage I-IV Xenopus oocytes are often obtained by survival surgical laparotomy. Multiple surgeries on a single animal may be justified considering the simplicity of the procedure, the lack of complications when performed by competent personnel, the effectiveness of anesthetic regimens, and reduction in the number of animals required obtaining the tissue used if the number of survival surgeries were restricted.

Policy:

The number of laparotomies on frogs to obtain oocytes should be determined by the condition and relative health of the individual animal, the quality of the oocytes obtained, the age of the animal, and the probable duration of egg production. Xenopus frogs may not undergo oocyte harvest laparotomies more frequently than every four weeks. Frogs must be identified to ensure the appropriate recovery time between survival surgeries. Beads sewn onto the skin or freeze-branding have worked effectively to identify individual animals.

Laparotomies will not be performed on frogs with incision complications or poor body condition. Without compromising the health or well-being of the frogs, the total number of laparotomies performed on each frog will be variable, and should not exceed *six** survival surgical procedures. The following are the guidelines to determine if Xenopus oocyte harvest is appropriate.

1. The condition of the frog will be evaluated before any surgery is attempted. Frog body condition should be good to excellent before it is used for survival surgery.
2. Evidence of surgery-related stress such as poor body condition (loss of 20% in weight or more from prior weight before surgery), poor oocyte quality or quantity at the last surgery, and/or clinical disease require evaluation by the clinical veterinarian and clearance before further surgery.

The rationale for a performance-based standard for oocyte harvest is as follows. Oocyte quality and quantity is a genetically determined trait among Xenopus. Once a "high performance" Xenopus frog is identified, maximal usage of these frogs increases the uniformity of the oocytes and greatly reduces the frog numbers required for each experiment. Substandard oocyte quantity and quality are early indicators of frogs in declining health and often occurs before clinical disease becomes evident. Evaluation of oocyte quality and yield should therefore be used as an early biologic indicator of frog well-being and is a reasonable parameter for determining when frogs should be removed from the pool of donor frogs.

*Exceptions may be made with appropriate justification on a case by case basis with veterinarian approval and oversight.