

Institutional Animal Care & Use Committee (QU-IACUC)

Policy: Use of Avian Embryos

Responsible University Office:

Office of Research Ethics & Integrity, Research Planning & Development

Effective: November 1, 2017

Last Updated: October 31, 2017

Responsible University Administrator:

Vice President for Research & Graduate Studies

Date Approved: October 31, 2017

Policy Contacts: QU-IACUC

- I. Purpose:** This policy applies to all avian embryos used in teaching and research at Qatar University. The intent of this policy is to describe euthanasia procedures for chick embryos in various stages of development as well as to ensure euthanasia procedures are in place for inadvertently hatched chicks.
- II. Background:** Avian embryos are not considered live animals by various international regulatory agencies and accordingly the Ministry of Public Health in Qatar does not have specific regulations pertaining to this. As such, many universities do not regulate their use in research. Nonetheless, there is a consensus in the scientific community that avian embryos that have attained > 50% incubation have developed a neural tube sufficient for pain perception. Also, if avian embryos hatch, intentionally or unintentionally, they are live vertebrate animals and thus, are regulated by the IACUC.

Consequently, QU-IACUC has adopted the following guidelines. These guidelines were developed based on recommendations of the Institute for Laboratory Animal Research (ILAR)¹ and the American Veterinary Medical Association (AVMA) Guidelines for the Euthanasia of Animals: 2013 edition². Chicken embryos, which hatch in approximately 21 days, are considered the model species. If other avian species are used, then the guidelines should be adjusted based on relative time to hatching.

III. Guidelines³

- a) Investigators using avian embryos must inform the IACUC by means of the “Notice of Intent to Use Avian Embryos” form. This form serves as a record of avian embryo use for the IACUC. If embryos will be sacrificed prior to 3 days before hatching (i.e. before embryonic day 18 (ED18)), the research is not subject to IACUC review, unless specifically requested by the investigator. **Studies using embryos within three days of hatching (i.e. day ≥ 19), or using hatchlings, must be reviewed by the normal IACUC procedure for vertebrate animals.**
- b) Chick embryos **younger than embryonic day 10 (ED10)** are assumed to be unable to experience pain. It is recommended that ED10 or younger embryos be euthanized by hypothermia, typically by placing the eggs in a -20°C freezer for a minimum of 4 hours.
- c) Chick embryos from **ED11 to ED18** may experience pain and therefore should be euthanized by rapid decapitation. Additional humane methods of euthanasia may be considered¹.
- d) Embryos **ED19 and older** must be euthanized by CO₂, decapitation or prolonged exposure to anesthetic agents through the air cell. Avian embryos are resistant to CO₂. Therefore, embryonated eggs must be

¹ ILAR. 1991. ILAR News 33(4):68-70. Issues for Institutional Animal Care and Use Committee.

² American Veterinary Medical Association Guidelines for the Euthanasia of Animals: 2013 Edition. AVMA: Schaumburg, IL.

³ Brown University Policy for Use of Avian Embryos & National University of Singapore Guidelines



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exposed to 90% CO₂ for a minimum of 20 minutes. Dry ice is unacceptable as a source of CO₂ for euthanasia.

- e) The IACUC recognizes that inadvertent hatching may occur. In such cases, only AVMA approved euthanasia methods may be used and investigators are asked to describe their methods for humane euthanasia of hatchlings.
- f) It is mandatory that a copy of the health certificate/assurance or official stamped letter from source company of avian embryos is submitted to QU-IACUC ensuring that fertilized eggs are free from pathogens.