

Information sheet for filling in Grant Applications or similar about the animal facilities at University of Luxembourg

General Information:

Institutional Name:	University of Luxembourg – Luxembourg Centre for Systems Biomedicine (LCSB)
Contact Person Name & Title:	Maria Lorena CORDERO MALDONADO Aquatic Platform Manager
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Institution Web Site	www.uni.lu
Animal rights activity in the past 3 years:	No

Description of activity:

Indicate Species Housed at Facility	Zebrafish (<i>Danio rerio</i>)
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Program Overview

Provide list of applicable regulations that are followed at this site, <i>e.g</i> The Guide, ETS 123, Directive 201/63/EU, Animal Welfare Act	<ul style="list-style-type: none"> • Directive 2010/63 EU • Commission Implementing Decision of 20 December 2013 • Règlement grand-ducal du 11 janvier 2013 relatif à la protection des animaux utilisés à des fins scientifiques. • Règlement grand-ducal du 9 mai 2018 modifiant le règlement grand-ducal du 11 janvier 2013 • Loi du 27 juin 2018 sur la protection des animaux • ARRIVE guidelines • PREPARE guidelines
AAALAC or equivalent Accreditation Status	Not accredited. Currently working on the AAALAC program description for accreditation in the future.
Provide overview of any non-compliant items from any inspection regarding animal welfare in the last 3 years and describe action to correct them.	There have not been non-compliant items.
Does the institution have an Institutional Animal Care & Use Committee or comparable ethical review body?	<p>Yes, namely Animal Experimental Ethics Committee (AEEC) and Animal Welfare Body (AWB).</p> <p>1) AEEC operates in monthly meetings with members of 4 different categories, <i>i.e.</i> lay persons, scientists, veterinarians and animal care persons. Projects are reviewed internally by AEEC and after approval the project applications are sent to the Ministry of Health and Ministry of Agriculture for official approval.</p> <p>2) AWB meetings take place weekly (with researchers and animal caretakers) and bi-yearly (with researchers, animal caretakers and veterinarians) to revise and discuss up-to-date animal welfare and health topics, implementation of the 3Rs, enrichment, project follow ups and severity assessment.</p>

Animal Information

Species Housed	Avg. Daily Inventory	Max Capacity	List sources of animals
Zebrafish	3000 adult zebrafish	30 000 adult zebrafish	European Zebrafish Resource Center (EZRC – KIT), Zebrafish International Resource Center (ZIRC), Zebrafish facilities of other academic institutions.

Veterinary Medical Care

Is there a veterinarian available to provide emergency care 24/7 in addition to weekend and holiday animal care?	Yes 1.5 veterinarian at University of Luxembourg, available always for providing support to the researchers during animal experiments and to the animal caretakers during husbandry tasks.
Clinical Veterinarian on Site	Yes
Briefly provide details regarding veterinary qualifications (<i>i.e.</i> , diploma status, years of experience, etc.).	Veterinary degree, Laboratory animal science certificates (Function A, B, C and D), 12 years of experience in laboratory animal science (species: rodents, zebrafish, pigs, sheep's, rabbits, xenopus, notophthalmus viridescence)
Briefly, describe the process of reporting sick or injured animals to veterinary staff.	Visual evaluation of health in the animals housed in the facility is performed in a daily basis as part of the animal caretaking tasks. If a fish shows obvious signs of disease (e.g. open wound in the body, emaciation, curved spine, protruded scales, protrusion in the body) it is immediately removed from the tank and euthanized. The removed animal with all its details is then reported in a "Removed Fish Form" that is kept as documentation of the facility which is often revised by the veterinarian, and the owner of the line is timely informed. If on the other hand a fish shows signs of mild to moderate distress (e.g. swim bladder disorder, egg bound, small and thin for tank size) it can be either isolated for further monitoring or it can be subjected to corrective measurements to improve its wellbeing. In any case the user is timely informed. Additionally, bi-weekly veterinarian checks are performed and all the findings and recommendations are reported in a written form. The actions are recorded in this form, which is also kept as documentation of the facility, and the owners of the respective animals are informed.

Animal Environment, Housing and Management

(Please describe housing conditions for all species)

<p>Zebrafish Facility: Tank sizes, max. number of animals per Liter, followed guideline</p>	<p>Regular housing: 3.5 liter tanks with recommended density of 4-6 adult zebrafish per liter of water, so maximum 18-20 adult fish per tank. Genotyping-rack housing: 0.7 liter tanks with recommended density of 2 adult zebrafish using a divider for isolation only for genetic identification. Following the Directive 2010/63 EU Annex III Section B (11).</p>
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<p>Single, pair or group housing (with justification if single housing is applied)?</p>	<p>Adult zebrafish are housed in groups, minimum 2-5 to a maximum of 18-20. Single housing for limited amount of time is justified only for identification of a desired genotype and because a tagging technique is not available for zebrafish.</p>
<p>Type of enrichment (with justification if no enrichment is provided)?</p>	<p>Life food, different backgrounds on tanks bottom, tunnels inside tanks.</p>
<p>What type of monitoring is done to ensure that appropriate sanitization has been achieved?</p>	<p>Quarterly health monitoring in fully euthanized animals and in debris.</p>
<p>Do you have a back-up electrical generator in case of power failure?</p>	<p>The filtration units are not covered by a generator. All other required equipment (e.g. incubators, fridges) are electrically backed-up.</p>

Standard Operating Procedures

**Do you have Policies, SOP's or other controlled documents governing the following functions?
Please complete table below**

<p>Veterinary medical records documentation</p>	<p>Not applicable for the zebrafish facility.</p>
<p>Personnel experience and training program and documentation for animal handlers</p>	<p>The following information is kept as documentation of the facility: - Copies of Function A, B, C or D certificates - Copies of attended CPD trainings - Copies of training and assessment program Requirements to perform procedures: university degree, function A training (in house or external + in house national legislation module), non-experienced researchers need to undergo a training for the specific procedures (At level 0 on dead or anesthetized animals under direct supervision by veterinarian or a person with a trainer license, At level 1 on</p>

	<p>life animals or unanesthetized under direct supervision, at level 2 on life or unanesthetized animals under indirect supervision (supervisor must be available inside the facility for rapid intervention), At level 3 on life or unanesthetized animals under indirect supervision (Supervisor aware when procedures are taking place and available to attend to provide advice if required (i.e. in the vicinity of the establishment)), At Level 4 supervisor aware when procedures are taking place and available to attend to provide advice if required (in the vicinity of the establishment) and must be assessed by the veterinarian, after this assessment (level 5 = competence reached) the person can perform the procedure without supervision.</p> <p>Requirements to design experiments: university degree, function A training, Function B training (both in house or external + in house national legislation module), experience in animal experimentation</p> <p>Requirements to take care of animals: Official training as animal caretaker or in house theoretical and practical training (e.g., legislation, 3R, Ethics, welfare and indicators, diseases, signs of pain, euthanasia)</p>
<p>Health and safety surveillance specifically relating to animal allergens and exposures to NHP's (if applicable)</p>	<p>The facility provides all necessary PPE (labcoats, dedicated shoes, gloves) to reduce exposure to possible allergens. All staff also undergoes a medical visit every two years and ensure preventive measures to reduce any health risk to allergens exposures.</p>
<p>Use of anesthetics, analgesics, and paralytics</p>	<ul style="list-style-type: none"> - All painful procedures are performed under anesthesia unless it equals the pain of a puncture with a needle according to good veterinary practice. - Anaesthesia is performed by immersion of the animals in an anaesthetic bath for minimum 5 minutes. - Anaesthetic solutions must be prepared in buffered solutions to ensure neutral pH (~ 7.3-7.5)
<p>Animal Socialization/ Enrichment Program</p>	<p>Several enrichment categories are considered in the zebrafish facility.</p> <ol style="list-style-type: none"> 1. Social enrichment: ensures that there is no single housing unless absolutely needed and if so, that the animal is maintained in visual contact with other fish. 2. Visual enrichment: ensures that there is a background (e.g. mimicking sand or stones) at the bottom of cages when animals have to be kept outside their tanks. 3. Physical and occupational enrichment: it is achieved by adding green glass marbles at the bottom of tanks with fewer animals, or plastic tunnels to provide shelters. Also, having a constant and regular water flow in the tank allows the introduction of soft stream that can be also useful as enrichment. <p>Nutritional enrichment: ensured by feeding live food (e.g. artemia or rotifers) to stimulate a prey catching behaviour.</p>

Reporting of animal welfare concerns, investigation, and resolution.	Animal welfare concerns are discussed on a regular base during the animal welfare body meetings. Strategies are then developed and discussed either globally or with specific person(s) preventing this problem in the future.
Humane euthanasia	Euthanasia must be done with the most humane available method. If other methods than the ones stated in the annex IV of the directive 2010/63/EU are necessary to reach the scientific outcome, this must be subject to a derogation in which a clear justification of the benefits should be given. In addition, it must be explained that the method chosen is the less harmful method of euthanasia to reach the scientific outcome. Euthanasia must be performed by persons that have the qualification, training, and assessment of the specific procedure.
Humane Endpoints	There are general humane endpoints established in a score sheet. If such humane endpoint criteria are observed by the animal caretakers, veterinarian, or the user of the animal, euthanasia must be performed. This needs to be informed to the user, veterinarian, and facility manager. In addition, specific humane endpoints according to the needs of specific animal experiments must be pointed out in the animal experimental application and must be approved by the AEEC and Ministries.