

THE UNIVERSITY OF HONG KONG
LI KA SHING FACULTY OF MEDICINE

Committee on the Use of Live Animals in Teaching and Research

To: All Heads of Departments
All Principal Investigators of CULATR approved projects

**Revised CULATR Application Form, Annual Reports and
Guidelines for the Use of Experimental Animals**

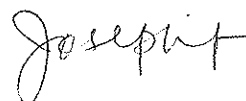
At the CULATR meeting held on January 26, 2007, the Committee received and discussed the number of animals supplied by the Laboratory Animal Unit (LAU) for teaching and research in year 2006/07. It was noted that the figures did not truly reflect the actual animal usage because some researchers imported and/or bred their own genetically modified animals/animal models. In view of such circumstances, it was suggested that the application and annual report forms be modified so that the Principal Investigators (PIs) would be required to specify the number of breeders and their offspring to be produced, as well as the number of animals to be obtained from outside sources for their protocols.

In this connection, I have attached herewith the revised application form (document M.145/507: Appendix A), revised annual report form (document M.143/507: Appendix B) and revised guidelines for the use of experimental animals (document M.144/507: Appendix C) for your reference. Please note that the revised application form/guidelines will take **immediate effect** and they can be downloaded at http://www.hku.hk/facmed/04research_animal.htm.

The revised annual report form will be implemented in the 2008 annual reporting exercise. You are therefore reminded to keep proper record on the usage/breeding of animals for your protocols. If there are any changes in the protocols in terms of their experimental procedures, principal investigators/staff/students involved, and types/number of animals used, please seek approval from the CULATR accordingly before the implementation of such changes.

Please feel free to contact the undersigned at 2819 9312 for enquiries about animal ethics applications.

Thank you very much.



(Miss) Josephine Yau
for Secretary
Committee on the Use of Live Animals
in Teaching and Research

June 8, 2007

JY/

**THE UNIVERSITY OF HONG KONG
COMMITTEE ON THE USE OF LIVE ANIMALS IN TEACHING & RESEARCH**

APPLICATION FORM: EXPERIMENTAL PROTOCOL

Before completing this form, please read carefully the “Guidelines for the Use of Experimental Animals” at http://www.hku.hk/facmed/04research_animal.htm. Please **print/type** and use separate sheets if necessary. **All sections** of the application form must be duly completed. Please enter 'Not applicable' if a section is not relevant rather than leaving it blank.

1. Title of the Research Project/Teaching Experiment (please tick):

- (a) Research Project Teaching Experiment
 (b) New submission Amendment **(please refer to Section 4 of the CULATR Guidelines posted at http://www.hku.hk/facmed/04research_animal.htm and complete Sections 1-3, 7 & 14-16 of this form only)**

2. Principal investigator(s)/staff in charge of the research project/teaching experiment:

<u>Name</u>	<u>Department</u>	<u>Post</u>	<u>Contact Tel. No.</u>

3. Other staff/students involved in the experimental procedures:

(a) <u>Name</u>	<u>Department</u>	<u>Post</u>	<u>Contact Tel. No.</u>

Note: Please attach to this application a copy of the **valid** license/permit/endorsements under Cap.340 for the persons stated in (2) and (3a) above. Students involved in teaching experiments should be covered by a “Block License” issued by the Department of Health. Application forms can be downloaded from the website of the Department of Health at http://www.dh.gov.hk/english/useful/useful_forms/useful_forms_ani.html.

- (b) Brief description of experience (including types/duration of training attended) of the persons named in (3a) with regard to animal experimentation:

4. Similarity to previously approved protocol:

(a) whether the substantive content of this protocol is similar to that of a previously approved protocol (please tick):

Yes No

(b) If yes, title of the previous project, CULATR Ref. No., and date of approval:

(i) Project Title: _____

(ii) CULATR Ref. No.: _____

(iii) Date of approval: _____

Note: Please attach a copy of the previously approved protocol for reference of the Committee.

5. Type of experiment for the currently submitted protocol (please tick the appropriate boxes):

(a) *Acute or Chronic Experiment* (please tick one)

Acute (involving euthanasia of animals only or procedures to be performed on animals under anaesthesia followed by euthanasia or procedures to be performed on conscious animals followed by euthanasia; all procedures to be completed within one working day)

Chronic (involving long-term [i.e. more than one working day] holding of animals; procedures to be performed on conscious animals with or without anaesthesia)

(b) *Non-invasive or Invasive Experiment* (please tick one)

Non-invasive

Invasive (involving puncture or incision of the skin or insertion of an instrument or foreign material into the body of animals)

6. For research project, provide a clear explanation in language understandable to a layperson of how this project advances scientific knowledge and is important to human/animal health or good of society in comparison with past experiments. For teaching experiment, provide a clear explanation of how the students will benefit from this practical session and indicate clearly the role of the students in the experiments. For both research project and teaching experiment, provide a clear indication that alternatives to experiments on live animals (i.e. reasons why non-animal models cannot be used) and/or a reduction of the number of animals to be used have been considered and why such alternatives/reductions were rejected (please attach separate A-4 size sheets if necessary):

Note: Please visit the following websites on the 3Rs Principles (i.e. "replacement", reduction and refinement):

(i) "Center for Alternatives to Animal Testing (Altweb)" at <http://altweb.jhsph.edu/>

(ii) "Fund for the Replacement of Animals in Medical Experiments (FRAME)" at <http://www.frame.org.uk/index.htm>

(iii) "Norwegian Reference Centre for Laboratory Animal Science and Alternatives (NORINA)" at <http://oslovet.veths.no/NORINA>

(iv) "National Centre for the Replacement, Refinement and Reduction of Animals in Research" at <http://www.nc3rs.org.uk/>

7. Animal Requirements:

(a) The specific species/strain and number of animals to be used (please check the appropriate box[es]):

Note: The species selected should be the lowest possible on the phylogenetic scale. The animals to be used should be of appropriate species/strain and the minimal number required to obtain statistically valid results. The applicant has to justify the number of animals required. If different animal species/strains are required, please indicate the total number of animals for each species/strain and use a list(s)/table(s) to present the data/calculation.

[i] Animals to be bred and supplied by the Specific Pathogen Free Central Breeding Area of the Laboratory Animal Unit (please attach separate A-4 size sheets if necessary):

<u>Species</u>	<u>Strain</u>	<u>Sex</u>	<u>Age</u>	<u>Number</u>	<u>Special characteristics</u> (if any)
----------------	---------------	------------	------------	---------------	-----------------------------------------

[ii] Animals to be bred by the Principal Investigator in _____ (please specify location)

Size of the Breeding Colony(ies) (i.e. no. of "breeder/stock" animals)
(please attach separate A-4 size sheets if necessary):

<u>Species</u>	<u>Strain</u>	<u>Sex</u>	<u>Age</u>	<u>Number</u>	<u>Special characteristics</u> (if any)
----------------	---------------	------------	------------	---------------	-----------------------------------------

Breeder: _____

Stock: _____

Provide animal identification methods (e.g. ear punch, tattoo, cage card, etc)

Number of offspring to be produced by the Breeding Colony(ies) which will be used in this project

<u>Species</u>	<u>Strain</u>	<u>Sex</u>	<u>Age</u>	<u>Number</u>	<u>Special characteristics</u> (if any)
----------------	---------------	------------	------------	---------------	-----------------------------------------

- [iii] Animals to be purchased/obtained from sources other than (i) & (ii) above (*please attach separate A-4 size sheets if necessary*):

(*please specify the source[s]*)

<u>Species</u>	<u>Strain</u>	<u>Sex</u>	<u>Age</u>	<u>Number</u>	<u>Special characteristics</u> (if any)
----------------	---------------	------------	------------	---------------	-----------------------------------------

- (b) Explanation for the number of animals required (list clearly the number of animals per group and number of treatment groups, provide calculation for the total number of animals required, etc.).

8. Proposed location in which animals are to be kept:

--

9. The exact site for carrying out the experiment and humane killing of animals:

--

10. The likely duration of

- (a) the research/teaching experiment: _____
- (b) the research project/teaching practical: _____
- (c) keeping the experimental animals: _____

11. Experimental Procedures:

- (a) Describe clearly ALL experimental procedures involving animals, from its entry into the experiment to the endpoint of the study, with special reference to those procedures which may be expected to cause particular suffering or injury.

Describe the adverse effects of procedures on animals. Where serious morbidity is likely (e.g. food or water deprivation, major surgery), please give frequency of assessment of well-being of animals, name/position of person(s) who will monitor well-being of animals and conditions under which animals will be terminated (during work hours, after hours and holidays). If dosing and tissue (e.g. blood) collection are required, full details on methods of restraint, route of administration, collection site, volume, frequency of dosing/collection, *etc.* have to be given. Aseptic methods are required for all surgeries.

Multiple recovery major surgical procedures on the same animal will only be permitted if (i) the researcher can provide satisfactory scientific justification for doing so; (ii) the second operation will only be carried out (by principal investigator or his/her delegates with proper training) on an animal

after it has fully recovered from the first operation (advice should be sought from registered veterinarians or LAU whenever necessary); and (iii) there will be adequate post-operative care in terms of analgesic and antibiotic coverage for and daily inspection of the animal.

Note: Please refer to the following documents posted at

http://www.hku.hk/facmed/04research_animal.htm whenever necessary:

- (i) Blood collection in mice using the saphenous vein – An alternative to retro-orbital collection, Norwegian Veterinary College (2000).
- (ii) The UKCCCR guidelines for the welfare of animals in experimental Neoplasia, United Kingdom Co-ordinating Committee on Cancer Research (1997).
- (iii) Home Office Guidance Note: Water and food restriction for scientific purposes (2003)
- (iv) Home Office Guidance Note: Antibody production - Principles for protocols of minimal severity (2000)
- (v) CCAC Guidelines on Antibody Production, Canadian Council on Animal Care (2002)
- (vi) Refinement and reduction in production of genetically modified mice: Sixth report of BVAAWF/FRAME/RSPCA/UFAW Joint Working Group on Refinement, RSM Press, *Laboratory Animals*, 37(3) Supplement (2003).
- (vii) Laboratory birds: refinements in husbandry and procedures: Fifth report of BVAAWF/FRAME/RSPCA/UFAW Joint Working Group on Refinement, RSM Press, *Laboratory Animals*, 35 (4) Supplement (2001).
- (viii) Refining procedures for the administration of substances, Report of the BVAAWF/FRAME/RSPCA/UFAW Joint Working Group on Refinement, RSM Press, *Laboratory Animals*, 35 (1) (2001).
- (ix) Institute for laboratory animal research report: Guidelines for the care and use of mammals in neuroscience and behavioral research (2003).
- (x) Guide for the Care and Use of Laboratory Animals, NRC (1996)
- (xi) Guidelines for Research Involving Recombinant DNA Molecules, NIH (2002)
- (xii) Code of Practice for Care and Use of Animals for Experimental Purposes, AFCD (2004)
- (xiii) Veterinary Care for Laboratory Animals, LAU (2005)
- (xiv) NIH Guidelines for Survival Rodent Surgery, USA (2005)
- (xv) Harmonisation of Animal Care and Use Guidelines, Science (2006)

[i] Type of procedure(s) for the currently submitted protocol (please tick the appropriate box(es)):

- antibody production genetic manipulation tumour experiment carcinogen experiment
- food water deprivation dental experiment transplantation tissue harvest after euthanasia
- single surgical procedure multiple surgical procedures (if yes, please justify in [ii] below)
- others (please specify) _____

IMPORTANT: The following section must be completed. Please do not just attach research proposal to this application and leave this section blank.

[ii] Details of the experimental procedures to be performed on animals:

(b) If surgery is required, please provide the following information:

[i] Name of the person(s) who will perform surgery and state their qualifications and/or experience:

[ii] Location of surgery (i.e. building and rooms):

[iii] Provide information on pre-operative care (e.g. fasting, analgesic loading):

[iv] Describe how ventilation will be monitored and how pain will be assessed if neuromuscular blocking/paralytic agents are used during surgery:

(c) Measures to be taken to minimise animal suffering/injury, including details of anaesthetics, sedatives, tranquillizers, analgesics and antibacterial agents to be used, etc. (please use generic names instead of brand names):

Note: Please refer to the following references whenever necessary:

- (i) Pain and distress in laboratory rodents and lagomorphs, *Laboratory Animals* **28**, 97-112 (1994)
- (ii) Handbook of laboratory animal management and welfare, S. Wolfensohn et al (2003)
- (iii) Formulary for laboratory animals, C.T. Hawk et al (2005)
- (iv) Laboratory animal anaesthesia, P. Flecknell (1996)
- (v) Anaesthesia and analgesia in laboratory animals, D.F. Kohn et al (1997)
- (vi) Guidelines for animal surgery in research and teaching, *Am J Vet Res*, **54**, 1544-1559 (1993)
- (vii) Pain management in animals. P. Flecknell & A. Waterman-Pearson (2000)

	<u>Generic Name</u>	<u>Dosage</u>	<u>Route of administration</u>	<u>Frequency of administration</u>
[i] <u>Anaesthetics/sedatives/tranquillizers</u>	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>
[ii] <u>Antibacterial agents</u>	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>
[iii] <u>Analgesics</u>	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>

(d) Please provide scientific justifications to explain why the use of anaesthetics, analgesics, sedatives or tranquillizers during and/or following painful or distressing procedures is contraindicated.

(e) Experimental Endpoint and Humane Endpoint:

Please provide:

- (i) the criteria and process for timely intervention or removal of animals if painful or stressful outcomes are anticipated (e.g. tumor size, percentage body weight gain or loss, inability to eat or drink, behavioral abnormalities, clinical symptoms, or signs of toxicity), and
- (ii) the criteria to be used to determine when euthanasia is to be performed. (Note: Death as an endpoint must always be scientifically justified.)

Note: Please refer to the following documents posted on http://www.hku.hk/facmed/04research_animal.htm:

- (i) CCAC guidelines on: choosing an appropriate endpoint in experiments using animals for research, teaching and testing (1998).
- (ii) Institute for Laboratory Animal Research Report: Humane endpoints for animals used in biomedical research and testing (2000).
- (iii) Guidelines for Endpoints in Animal Study Proposals, ARAC (2005)

(iv) Guidelines for the Assessment and Management of Pain in Rodents and Rabbits, ACLAM (2006)

(f) Where serious morbidity is likely (e.g. food or water deprivation), please provide the following information:

[i] Frequency of assessment of well-being of animals:

[ii] Name/position of person(s) who will monitor well-being of the animals (during work hours, after hours and holidays):

(g) For genetically modified (e.g. transgenic and knockout) animals, please describe any phenotypic consequences of the genetic manipulations to the animals and any special husbandry care or health monitoring that the animals will require.

(h) Post-operative care of animals and disposal of carcasses:

[i] Post-operative care

[ii] Please provide the name and position of the person(s) who are responsible for carrying out post-operative care. Indicate frequency of observation during/after work hours and holidays.

(i) Disposal method for carcasses, tissues and contaminated materials:

(j) Euthanasia of Animals:

[i] Method of euthanasia (please tick the appropriate box):

Note: Please refer to the recommended methods in the following documents which are posted at http://www.hku.hk/facmed/04research_animal.htm:
(i) 2000 Report of the AVMA Panel on Euthanasia, *JAVMA*, 218 (5), 669-696 (2001).
(ii) NIH Guidelines for the Euthanasia of Rodent Feti and Neonates (2004).
(iii) NIH Guidelines for Euthanasia of Rodents Using Carbon Dioxide (2004)

[1] Physical method: _____

[2] Chemical method (provide details of the *euthanasia agent* below):

<u>Generic Name</u>	<u>Dosage</u>	<u>Route of administration</u>
---------------------	---------------	--------------------------------

[ii] Person(s) performing the euthanasia:

<u>Name</u>	<u>Post/Department</u>	<u>Conversant with the euthanasia technique(s)</u>
-------------	------------------------	----------------------------------------------------

Yes No

[iii] Provide justification if a non-standard euthanasia method will be used (e.g. decapitation with anaesthesia, please refer to the AVMA Panel Report on Euthanasia mentioned above):

(k) Hazards/Hazardous Substances and Safety Measures

Note: The Safety Office must be consulted on risk assessment and the appropriate safety measures required before commencement of the experiment if it involves the use of hazardous substances and/or other hazards. Please visit the Safety Office website at <http://www.hku.hk/safety/> and refer to the following documents posted at http://www.hku.hk/facmed/04research_animal.htm whenever necessary:
(i) Occupational health and safety in the care and use of research animals, NRC (1997)
(ii) Biosafety in microbiological and biomedical laboratories, 5th Edition, CDC (2007)

[i] Hazardous materials to be used and other hazards involved (please tick the appropriate box[es] and provide details):

pathogenic/infectious organisms radiation radioactivity chemicals/corrosive substances

carcinogens recombinant DNA/RNA cell lines/tissues/anti-sera drugs

others (please specify) _____

[ii] Safety measures to be taken (please tick one):

- Safety Office has been consulted (please attach a copy of Safety Office's advice/recommendation to this application)
- Safety Office has not been consulted because of the following reasons:

12. Special concerns or requirements of the study (please list any special housing, equipment and animal care [e.g. special caging, water, feed or waste disposal, etc.] required.)

13. Other information considered important:

14. Declaration:

The information supplied above is to the best of my/our knowledge and belief accurate. I/we certify that that the research proposed herein is not necessarily duplicative of previously reported research. I/we shall take reasonable care to ensure that the proposed experiment(s) is conducted in accordance with the best modern practice and in such a way so as to safeguard the welfare of and minimise the pain suffered by the animals involved. I/we assure that measures to be taken to minimise animal suffering/injury are the most humane and compatible with the objectives of the experiment. If an experiment involves conscious animals without anaesthesia, supervision of the experiment shall be undertaken in the presence of the investigators concerned and by an independent assessor appointed by this Committee. I/we will obtain approval from this Committee before initiating any changes in this study and will notify this Committee regarding any unexpected study results that impact the animals and any unanticipated pain or distress, morbidity or mortality. I/we certify that I/we am/are familiar with and will comply with all pertinent institutional rules/policies; local legislative requirements and code of practice (i.e. Agriculture, Fisheries & Conservation Department's "Code of Practice for Care and Use of Animals for Experimental Purposes [2004]").

Signature of all Investigator(s):

15. To be completed by Head(s) of Department(s):

(Note: Principal Investigators from more than one department have to seek the endorsement from their respective Heads of Departments.)

I hereby endorse this application and confirm that the principal investigator(s) is/are appropriately experienced in the work proposed and that the Department has adequate facilities for the experiment(s) to be conducted in such a way as to safeguard the welfare of and minimise the pain suffered by the animals involved.

Signature of Head(s) of Department(s): _____

16. Date of submission: _____

PLEASE NOTE:

- (i) The above information should be included as a separate appendix to research grant applications, where the projects involve the use of experimental animals.
- (ii) This Committee has the right to undertake site visits of all animal care facilities and experimental laboratories within this University when appropriate.
- (iii) This Committee has also the right to videotape the process of experiments involving the use of experimental animals when it is deemed necessary to do so.

May 2007

THE UNIVERSITY OF HONG KONG

Committee on the Use of Live Animals in Teaching and Research

Annual Report on CULATR-approved Research Protocols
for the period January 1, 200X to December 31, 200XA. Particulars of Protocol

CULATR No. : _____

Protocol Title : _____

Name of Principal Investigator : _____

Date of Approval : _____

Type(s) & Number of Animals Approved : a. Animals to be bred and supplied by the Laboratory Animal Unit (i.e. the Specific Pathogen Free Central Breeding Area)

(please check the appropriate box[es])

Type: _____ Number: _____

Type: _____ Number: _____

Type: _____ Number: _____

 b. Animals to be bred by the Principal Investigator in _____
(specify location)

i. Size of the Breeding Colony(ies) (i.e. no. of "breeder/stock" animals)

Type: _____ Number: _____

Type: _____ Number: _____

Type: _____ Number: _____

ii. Number of offspring to be produced by the Breeding Colony(ies) which will be used in this CULATR project

Type: _____ Number: _____

Type: _____ Number: _____

Type: _____ Number: _____

 c. Animals to be purchased/obtained from sources other than b(i) & b(ii) above: _____

(please specify the source)

Type: _____ Number: _____

Type: _____ Number: _____

Type: _____ Number: _____

B. Progress (please check the appropriate box)

- a. The above protocol has not yet been commenced.
(No additional answers are required.)
- b. The above protocol was commenced in _____ (mm) _____ (year) and is currently active.
(Please complete Section C below.)
- c. The above protocol was completed in _____ (mm) _____ (yy)
(Please complete Section C below.)

C. Changes (please check the appropriate box)

a. There was **no change** in the above protocol during the reporting period in terms of its experimental procedures, principal investigator(s)/staff/students involved, and the types and number of animals used.

b. There was **change(s)** in the above protocol during the reporting period:

(1) Has **prior approval** been obtained from the CULATR before the change(s) took place?
(please check the appropriate box)

No (please give reasons*) _____

Yes. The approval was obtained on _____ (please attach the relevant documents, e.g. the approval letter from the CULATR)

(2) The change(s) was in the following aspect(s): (please check the appropriate box[es])

i. Experimental procedures (please specify*):

ii. Type(s) and number of animals used (please specify*):

iii. Principal Investigator(s) and other staff/student(s) involved (please specify*):

iv. Other changes (please specify*):

D. Type(s) and Number of Animals Used

Type: _____ Number: _____ (in reporting period)
Number: _____ (since commencement of this project)
Type: _____ Number: _____ (in reporting period)
Number: _____ (since commencement of this project)
Type: _____ Number: _____ (in reporting period)
Number: _____ (since commencement of this project)

E. Unexpected Animal Suffering (please check the appropriate box)

- a. No unexpected animal suffering was observed during the reporting period.
- b. Unexpected animal suffering was observed during the reporting period and the following measure(s) had been taken to minimize animal suffering (please specify*):

Important Note: You are **required** to seek CULATR's **prior approval** for any expected changes in the protocol.

Name of Principal Investigator : _____ Department : _____
Signature : _____ Date : _____

Please return the completed annual report form, together with other relevant documents as necessary, to Ms. Marina Yam either by fax (2818 4913) or internal mail (6/F, William M. W. Block, 21 Sassoon Road) on or before February X, 200X.

* Please use separate sheet(s) as necessary.

THE UNIVERSITY OF HONG KONG
COMMITTEE ON THE USE OF LIVE ANIMALS IN TEACHING & RESEARCH

GUIDELINES FOR THE USE OF EXPERIMENTAL ANIMALS

Animal Licenses

1. Teaching and research experiments involving living vertebrate animals may be performed only by staff and students who are licensed under the Animals (Control of Experiments) Ordinance, Cap. 340. A licence specifies the type of experiment, type of animal used and place(s) where experiments may be conducted. In addition, special endorsements and permits are required for performing experiments
 - a. for the purpose of attaining manual skill;
 - b. for the purpose of illustrating lectures;
 - c. without administering any anaesthetic or killing the animal.

For teaching experiments, "Block License" will be issued by the Department of Health to cover a group of named students.

If a licensee would like to conduct an experiment whose specification, including the type of experiment and type of animal to be used, differs from those stated on his/her license, another application for a separate license is necessary.

Every licensee is required under this Ordinance to submit an annual return (including information on the kinds and number of animals used, etc.) to the government on or before the first day of January each year. Application forms for licences are obtainable from the Faculty Office of the Faculty of Medicine and can also be downloaded from the website of the Department of Health at http://www.dh.gov.hk/english/useful/useful_forms/useful_forms_ani.html

The Laboratory Animal Unit will only issue animals to those licensees who have submitted their annual returns to the Director of Health and forwarded a copy of their annual returns to the Unit in early January each year.

2. Every licensee under Cap. 340 is advised to comply fully with the Agriculture, Fisheries and Conservation Department's "Code of Practice for Care and Use of Animals for Experimental Purposes (2004)" which can be downloaded at http://www.afcd.gov.hk/english/quarantine/qua_awc/qua_awc_aw/qua_am_aw_code/qua_am_aw_code.html

Application and Protocol Vetting Procedures

3. Protocols for all experiments (including preliminary and pilot experiments) involving living vertebrate animals have to be scrutinised and approved by the Committee beforehand. For an experimental protocol which is "acute" and "non-invasive" in nature and substantially similar in content to previously approved protocol(s), a "fast-track" procedure which takes approximately 10 calendar days for scrutinisation and approval may be used. For protocols on preliminary and pilot experiments, there is also a "fast-track" mechanism in place for vetting.
4. Application for "Amendment" to approved projects is limited to the following categories: (i) less than ten percent increase in the number of animals of the approved strain/species; (ii) changes in staff/students involved in the experimental procedures; and/or (iii) changes in the project title.
5. Please attach to the application a copy of a **valid** and **updated** license under the Animals (Control of Experiments) Ordinance, Cap. 340 for the principal investigator(s) and other staff/students involved in the experimental procedures.
6. Please allow at least two weeks for the Committee to process the application.

7. Applications have to be typed/printed. **All sections** of the application form must be completed. Please enter 'Not applicable' if a section is not relevant rather than leaving it blank. The application form can be downloaded from <http://www.hku.hk/rss/general/ethics&safety.htm> and http://www.hku.hk/facmed/04research_animal.htm. Protocol vetting procedures are available at http://www.hku.hk/facmed/04research_animal.htm.

Approval for Research and Teaching Experimental Protocols

8. Approval of **research** protocols has a validity period of **not more than three years**. Research protocols have to be re-submitted to the Committee for approval if the projects commence after the validity period. Research projects which are still going on after the validity period have to be re-submitted to the Committee for review and approval. The Committee will issue a circular to the principal investigators of approved projects at the end of each year requesting them to submit an annual report indicating: (i) whether the projects have commenced or have been completed, (ii) the types and number of animals approved by the Committee/used during a specific reporting period, (iii) whether there have been/will be any changes in procedures, animal species and numbers, and (iv) whether there have been any unexpected animal suffering (if so, the measures used for alleviating animal suffering have to be provided).

Approved protocols for **teaching** purpose have to be submitted to the Committee for review and approval **every year** in order to assess whether such experiments are still "genuinely necessary" to students and to ensure that the number of animals used is well justified and maintained at a minimum. Students should be given an option not to conduct animal experiments without affecting their results.

Experimental Procedures

10. Principal investigators should ensure that only the approved number of animals will be used and the approved procedures will be carried out. **Prior** approval from the Committee **must be sought** if it is necessary to make any changes to an approved protocol.
11. Principal investigators (PIs) should keep proper record of the source(s), type(s) and number of animals used every year. If the animals to be used in a project will be produced by PIs' experimental breeding colony(ies) (i.e. the required animals will not be bred and supplied by the Specific Pathogen Free Central Breeding Area of the Laboratory Animal Unit), PIs should maintain proper breeding colony management and keep correct record of the population size (i.e. "breeder/stock" animals) of these colonies.
12. A copy of the approved protocol should be kept close to the animal holding facilities so that staff on the site can easily make reference to it.
13. If experiments on live animals are to be carried out in another institution, the principal investigator should inform the Committee that approval has already been sought from the animal ethics committee of the host institution before commencement of the experiments.
14. If the experiments involve the use of hazardous substances and/or other hazards (e.g. infectious agents, radiation, radioactivity, corrosive substances, carcinogens, recombinant DNA, etc.), the Safety Office should be consulted about the safety measures (e.g. containment measures, disposal and decontamination of biohazardous materials, etc.) before commencement of the experiments. Useful guidelines/links are posted on the homepage of the Safety Office at <http://www.hku.hk/safety/>. A copy of the Safety Office's advice/recommendations should be attached to the application.
15. Experiments should be conducted in such a way as to avoid any unnecessary suffering and injury to the animals. The research proposal should not be an unnecessary duplication of previously reported experiments. Any special housing and husbandry requirements for the animals should be clearly stated, including criteria and process for timely intervention, removal of animals from a study, or euthanasia if painful or stressful outcomes are anticipated.
16. The principal investigator in charge of the experiment shall allow it to be terminated if its continuation may

result in unnecessary suffering or injury to the animals, and shall ensure that the authority to do so is delegated at times when he/she is himself/herself unavailable.

17. If the experiment or procedure is likely to cause pain and discomfort, the animals shall first be rendered incapable of perceiving pain, by anaesthetisation, and be maintained in that condition until the experiment or procedure is ended. The only exception to this guideline is where anaesthetisation would defeat the purpose of the experiment and data cannot be obtained by any other humane procedure. Such experiments or procedures shall be carefully supervised by the principal investigator (and must be covered by a special endorsement to a Cap. 340 licence – see [1] above).
18. Multiple recovery major surgical procedures on the same animal will only be permitted if (i) the researcher can provide satisfactory scientific justification for doing so, (ii) the second operation will only be carried out (by principal investigator or his/her delegates with proper training) on an animal after it has fully recovered from the first operation (advice should be sought from registered veterinarians or LAU whenever necessary), and (iii) there will be adequate post-operative care in terms of analgesic and antibiotic coverage for and daily inspection of the animal.
19. Post-operative care of animals should be provided so as to minimise discomfort and the consequences of any disability resulting from the experiment.
20. If it is necessary to kill an experimental animal, the animal shall be killed in a humane manner, i.e. in such a way as to ensure immediate death. No animal shall be discarded until after it is dead. Animal carcasses, tissues and associated wastes must be safely disposed of according to the rules laid down by the Safety Office.

Enquiries

21. Any enquiries concerning the health of experimental animals may be directed to the Head of the Laboratory Animal Unit (Tel. 2816 8515, E-mail: lahku@hkucc.hku.hk), who will give advice and/or treatment as required. A list of useful references/guidelines/links on the care, management and welfare of laboratory animals is available on the homepage of the Laboratory Animal Unit at <http://www.hku.hk/launit/>.
22. Enquiries about animal ethics applications should be directed to the Committee Secretariat at Tel: 2819 9312 or E-mail: culatr@hkucc.hku.hk.

May 2007