



**CHULALONGKORN UNIVERSITY**

**CHULALONGKORN UNIVERSITY  
ANIMAL CARE AND USE PROTOCOL (CU-ACUP)**

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Protocol Review No.

Protocol review numbers are composed of the last two digits of Christian Era, followed by two digits of faculty code number, and the last three digits run by faculty IACUC on queue.

\*\*\*Protocol should be written in English\*\*\*Hand written forms will not be accepted\*\*\*

<b>OFFICE USE</b>	<b>DATE RECEIVED:</b>	<b>APPROVAL DATE:</b>	<b>DATE EXPIRED:</b>
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**Faculty or Institute:** .....

**1. Project or Proposal (if applicable):** .....

**2. Animal Use Protocol Title:(Eng)**.....  
**(Thai)**.....

**3. Submission of this protocol as:**

- New submission**
- Renew CU-ACUP**

Previous approved protocol number .....

**4. Name of Principal Investigator (PI):... MUST COMPLETE A PERSONNEL FORM (attached).**

Name: .....

Degree: ..... Position: .....

Animal User ID: .....

Department: .....

Faculty/Institute: .....

Tel: ..... Fax: .....

E-mail: .....

**5. Co-Investigator(s) and person(s) involving animal use:**

Name / Surname	Affiliation Address	Position	Phone	Fax / E- mail

**6. Name of Secondary or Emergency Contact Information:...*MUST COMPLETE A PERSONNEL FORM (attached).***

Name: .....

Degree: ..... Position: .....

Animal User ID: .....

Department: .....

Faculty/Institute: .....

Tel: ..... Fax: .....

E-mail: .....

**7. Name of Attending veterinarian: .....**

Name: .....

Degree: ..... Position: .....

Animal User ID: .....

Department: .....

Faculty/Institute: .....

Tel: ..... Fax: .....

E-mail: .....

**8. Nature of protocol:**

Research in the field of .....

- Testing/ Monitoring, please specify .....
- Teaching: Course .....
- Biological production, please specify .....
- Animal breeding, please specify .....
- Other, please specify .....

**9. Funding source/Budget**

- Grant has been:  Submitted  
 Sponsor:.....
- Approved  
 Sponsor:.....
- Duration of approval .....
- Amount: .....
- Other, please specify .....

<b>DEPARTMENT ENDORSEMENT (Required)</b>		
<i>I endorse this project for review.</i>		
<i>Head of Department or Designee</i>	<i>Signature</i>	<i>Date</i>
<i>Comments:</i>		

<b>ATTENDING VETERINARIAN REVIEW (Required)</b>		
<i>I have reviewed this animal use protocol in regard to the proposed care and use of animals. The principal investigator has been informed of any concerns/comments I have regarding this protocol.</i>		
<i>Attending Veterinarian's Name</i>	<i>Signature</i>	<i>Date</i>
<i>Comments:</i>		



**13. Benefits of the Study:** .....  
.....  
.....

**14. Justification for the Use of Animal and Consideration of Alternatives to Painful or Distressful Procedures:**

14.1 As Principal Investigator, I have considered alternative to procedures that might cause more than momentary or slight pain or distress. I have used the following methods/sources to search for such alternative: (Please provided at least two databases search) .....  
.....

14.2 Keywords and Search Strategy: Provide the keyword combinations (Keywords should relate to the painful procedures and pain or distress associated with the induced disease condition in this project)

Keyword .....  
Date Search Conducted .....  
Period Covered by Search .....

**Were any alternatives to procedures which may cause more than momentary or slight pain or distress discovered in the results of the search(s) indicated above?**

- No
- Yes (state what alternatives to the use of painful or distressful procedures were discovered and the scientific reason for rejecting use of these alternatives.)

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.....

**Does the proposed research duplicate any previous work?**

- No
- Yes (explain why it is scientifically necessary to duplicate the experiment)

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**14.3 Briefly describe how you have considered each of the following regarding 3Rs or why they are not applicable:**

14.3.1 Replacement of animals (e.g., with *in vitro* models, computer models or less sentient animals) and explain why the proposed species is / are the most appropriate.

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14.3.2 Reduction in the number of animals (e.g., using appropriate statistical methods in the design analysis of the study; reduction in experimental variability by using animals of defined genetic or microbiological status; sharing tissue among investigators) and provide an explanation of how the numbers of animals to be used in each group or total were appropriate based on scientific and statistical requirement to achieve objectives.:.....

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14.3.3 Refinement of experimental procedures to minimize pain or distress (e.g., early endpoint; use of analgesics, anesthetics or sedatives; techniques that reduce stress in the animal):

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**15. Description of animals**

Common name	Breed / Strain/ Scientific name	Age	Weight	Sex	Number

Source / Vendor (Name of source/vender and location):.....

Special consideration (e.g. genetic modified animals, pregnant animals, lactating animals -- please provide information about special care and use):.....

**16. Description of Wildlife**

Common name	Breed / Strain/ Scientific name	Age	Weight	Sex	Number

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Source (Name of source/How to catch): .....

.....

Provide the care and use of the animals: .....

.....

Conserved species  No  Yes, the project has been approved by the Department of National Park,  
Wildlife and Plant Conservation on (D/M/Y)(please also attach the  
letter of approval).....

**17. Animal Facility and Laboratory:**

Field Study, please specify the name of the location.....

Client-Owned Animals, please specify the name of the location.....

Farm Animals, please specify the name of the location.....

Use captive animals, please answer the 19.1 if the terrestrial animal will be used; the 19.2 if the aquatic  
animal will be used

Housing Place: building.....Room.....

Experimental Place: building.....Room.....

**18. Housing System:**

Non-conventional/Natural Habitat

Strictly Hygienic Conventional

Conventional

Germ Free

Biohazard Containment

Barrier

Others, please specify.....

**19. Animal care:**

**19.1 Husbandry consideration:**

19.1.1 Caging:

Solid bottom, open top

Static filtered top cages

Isolator

Individual ventilated cage (IVC)

Others, please specify.....

19.1.2 Caging materials:

Plastic

Stainless steel

Others, please specify.....

19.1.3 Cage size (W x L x H).....cm.

19.1.4 Number of animals / cage.....

19.1.5 Environmental requirements:

Temperature.....

Humidity.....

Light:  Standard fluorescent  
 Others, please specify.....

Light cycle:  Standard 12 :12  
 Others, please specify.....

19.1.6 Food:

Type of food: .....

Source/Vendor.....

Feeding schedule:

Ad libitum  
 Others, please specify.....meal(s)/day

19.1.7 Water (if needed):

Type of water:  Tap water  
 Hyperchlorinated.....ppm  
 Acidified, pH.....  
 RO-UV  
 Others, please specify.....

Water Provided:

Ad libitum  
 Others, please specify.....

19.1.8 Bedding/housing media:

No  
 Yes , please specify.....

## 19.2 Husbandry consideration for aquatic animals:

19.2.1 Water system (Hatchery / Laboratory only)

Closed water system       Opened water system  
 Re-circulating system       Flow-through (flow rate: .....)  
 Static non – renewal System       Static renewal System



19.2.2 Water filtered system (Hatchery / Laboratory only)

- Bio filter     Solid filter  
 Non- filter     Other (please specify: .....)

19.2.3 Air system

- Aeration     Non-aeration

19.2.4 Caging

- Aquaria     Cage  
 Container     Other (please specify: .....)

19.2.5 Caging material

- Glass     Plastic  
 Acrylic     Other (please specify: .....)

19.2.6 Cage size (W x L x H (D)) .....

19.2.7 Density (number / cage) .....

19.2.8 Environment requirement

- Freshwater     Brackish water (.....PSU)  
 Seawater (.....PSU)

Temperature (°C) .....

- Light     Natural  
 Additional Light (Light cycle: Light .....h / Dark .....h)  
 Other.....

19.2.9 Water quality (pH / Do / inorganic ion)

- Determine (please specify :.....)  
 Not determine

19.2.10 Food

- Food type     Natural food     Artificial food
- Live feed     Moist pellet  
 Dry pellet     Other .....
- Food source     Vender .....     Other .....
- Feeding frequency     Time/day .....     Ad libitum  
 Other (...% / g body weight/ day)

**20. Duration of the Project:** From..... To .....



**21.4 Animal Procedure:**

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**21.4.1 Blood or Body Fluid Withdrawal / Tissue Collection / Injections, Tail Clip,**

**Gavaging:**

Injection

Anatomic Location.....  
Needle size/Catheter and length.....  
Volume Administered.....  
Frequency (per day).....  
Chemical/Drug.....

Gavaging

Needle size/Catheter and length.....  
Volume Administered.....  
Frequency.....  
Chemical/Drug .....

Blood Withdrawal:

Anatomic Location.....  
  
Needle size/Catheter and length.....  
Volume Collected.....  
Frequency .....

Body Fluid Withdrawal:

Anatomic Location.....  
Needle size/Catheter and length.....  
Volume Collected.....

Frequency .....

Tissue Collection:

Dead animal  Alive animal

Anatomic Location/organ(s).....

Needle size/Catheter and length.....

Biopsy size.....

Frequency .....

Infusion:

Anatomic Location.....

Needle size/Catheter and length.....

Volume Administered.....

Frequency (per day).....

Chemical/Drug.....

Others (please specify).....

**21.4.2 Restraint with Mechanical Devices (in conscious animals):**

No

Yes, please answer the following questions:

Describe device, duration of restraint, frequency of observation, condition procedures, and steps to assure comfort and well-being.

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.....  
.....

If prolonged restraint is used, justification must be provided .....

.....  
.....

**21.4.3 Projects Involving Food and Water Deprivation, or Dietary Manipulation:**

No

Yes, please answer the following questions:

Individual animal's weight is monitored every.....days.

Individual animal's weight is not monitored.

Item	Amount Restricted/Added	Duration	Compound Supplemented	Compound Deleted	Frequency
Food Restriction					
Fluid Restriction					
Nutrient Alterations					

**22. Surgery:**

No

Yes, please answer the following questions:

22.1 Surgical procedure is:

Non-survival

Survival

One time

Multiple

Major Surgery

Minor Surgery

22.2 Location / Room number for surgical procedure will be conducted.

.....  
.....

22.3 Surgeon / Qualification:

.....  
.....

22.4 Procedure:

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22.5 Detail the provisions for both pre-and postoperative care

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.....

22.6 Describe long-term care of any chronic survival procedures:

.....  
.....

22.7 Multiple survival surgery procedures: Please provide scientific justification

.....  
.....  
22.8 Who will be responsible for post-surgical care and treatment?  
.....

**23. Pain and Distress Assessment and Alleviation:**

23.1 Pain or Distress Classification (**USDA Classifications**)

- Classification B
- Classification C
- Classification D
- Classification E

23.2 Justification for the use of animal in classification E:

.....  
.....

23.3 During the study:

1. How often will the clinical condition of animals be monitored?

.....

2. Who will monitor the clinical condition of the animals?

.....

23.4 Are the animals expected to experience any specific study-induced related pain & distress or any health problems?

- No
- Yes, please describe the expected problems.

.....  
.....

23.5 What criteria will be use to assess pain, distress, or discomfort?

- Inactivity
- Loss of mobility
- Unresponsiveness
- Restlessness
- Loss of weight:    5%   10%   15%   20% weight loss
- Abnormal resting postures, somnolence or hunched posture
- Licking, biting, scratching, or shaking a particular area
- Loss of appetite
- Red stain around the eyes of rats
- Labored breathing

- Failure to show normal patterns of inquisitiveness
- Failure to groom, causing unkempt appearance
- Guarding (protecting the painful area)
- Others, please specify.....

**24. Anesthetic/Analgesic:**

**24.1 Analgesic:**

- No
- Yes, please answer the following questions:

24.1.1 Chemical method

Common name	Drug concentration	Dose	Route of administration

24.1.2 Physical method, please specify.....

**24.2 Anesthesia (Pre-anesthetic and anesthetic):**

- No
- Yes, please answer the following questions:

24.2.1 Chemical method

Anesthetic name and (Commercial name)	Drug concentration	Dose	Route of administration

24.2.2 Physical method, please specify.....

24.2.3 Who is responsible for maintaining anesthesia.....

24.2.4 Methods used to monitor anesthesia, frequency of monitoring.....

.....

.....

.....

24.2.5 What criteria will be used to assess level of anesthesia?

- Respiration rate
- Heart rate
- Toe pinch
- Tail pinch

Corneal reflex

Color of mucous membrane

Others please, specify.....

24.2.6 Describe post-anesthetic treatment or intervention .....

**25. Animal Transport and Use outside Facilities:**

No

Yes, please answer the following questions:

25.1 Provide the reason .....

25.2 Where the animal will be used? .....

25.3 Duration of animal be outside the facilities .....

25.4 Methods of transportation .....

25.5 Will the animal be returned to the facilities? .....

25.6 Will the animal be euthanized at the destination? .....

**26. Experimental Endpoint:**

26.1 Study Endpoint:

No

Yes, please specify: .....

26.2 Early Endpoint/Humane Endpoint:

No

Yes, please specify: .....

26.3 Justification of Dead as an Endpoint: (ระบุเหตุผลความจำเป็นที่จะใช้การตายเป็นจุดสิ้นสุดการทดลอง) .....

**27. Disposition of animals After Completion of Activity:**

Euthanized

Return to owner/ production / breeding unit / facility inventory

(please justify).....

Transfer to another research project:

(please list Protocol No.; PI; and justification).....



.....  
 Others, please describe.....

**28. Euthanasia (If applicable):**

28.1 Methods and Reference(s): .....

.....  
.....

28.2 Chemicals/Drugs used for euthanasia

Common name	Dose	Route of administration	Other (please describe)

28.3 Physicals, please specify.....

28.4 Where animal be euthanized: .....

28.3 Confirm of euthanasia: (Regardless of the method of euthanasia, indicate how death will be confirmed)

- Not applicable
- Create Pneumothorax
- Removing vital organs
- Cervical dislocation
- Absence of cardio-vascular function
- Decapitation
- Exsanguination
- Other (please describe): .....

**29. Necropsy:**

- No
- Yes, please specify:.....

.....  
.....  
.....

**30. Carcass and Waste Disposal:**

- No
- Yes, please specify:.....

.....  
.....  
.....

**31. Protection Equipment (in case of using toxin, infectious agents, radioactive materials):**

No

Yes, please specify:.....

.....

.....

**PRINCIPAL INVESTIGATOR ASSURANCES**

<b>Protocol Number:</b>	<b>Approval Date:</b>
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1. I agree to abide by Animal for Scientific Purposes Act and all relevant institutional policy and regulations regarding animal care and use at Chulalongkorn University.
2. Should I use the work described in this protocol for a proposal for funding, I assure the description of the animal use in such funding proposal to be identical to that contained within this protocol.
3. I understand that the use of hazardous agents may only be initiated after approval from the IACUC, Institutional Biosafety Committee (IBC), and/or Environmental health and Safety.
4. I assure that I will complete and submit “AUP for Renewal” prior to the annual anniversary of protocol approval to avoid expiration of such approval and cessation of all research activities.
5. I declare that to the best of my knowledge the work described in this protocol does not unnecessarily use animals nor is unnecessarily duplicative of previous work. I am aware of the principles of “replacement, reduction, and refinement,” and assure that I have sought alternatives to animal use.
6. I assure that the work described within this protocol will not be initiated until notification of IACUC approval has been received.
7. I assure that I will notify IACUC of any proposed changes regarding the work described within this protocol and agree that no such changes will be implemented until approved by the IACUC (except where absolutely necessary to eliminate apparent immediate hazards to individual(s) and/or animal(s)).

I verify that the information provided in this Animal Use Protocol is accurate and complete. I understand that as Principal Investigator I have ultimate responsibility for the ethical performance of the research, the welfare of the animals involved, and strict adherence to any condition imposed by the IACUC.

<b>Principal Investigator’s Name:</b>	<b>Signature:</b>	<b>Date:</b>



**PERSONNEL FORM**

**CHULALONGKORN UNIVERSITY**

**ANIMAL CARE AND USE COMMITTEE (CU-ACUC)**

**OFFICE  
USE**

**DATE RECEIVED:**

**APPROVAL DATE:**

**PROTOCOL NUMBER:**

**Section I: Protocol Information**

Principal Investigator: \_\_\_\_\_

Title of Project: \_\_\_\_\_

**Section II: Status**

**Principal Investigator**

**Co-Investigator**

**Personnel**

Name: .....

Degree: ..... Position: .....

Animal User ID: .....

Department: .....

Faculty/Institute: .....

Tel: ..... Fax: .....

E-mail: .....

Responsibility: .....

**Section III: Handling of animals and procedures**

List all species this individual will be handling and all procedures this individual will be performing under this protocol. Indicate **N/A** only if the individual will have **no animal contact** under protocol.

SPECIES  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Animal Handling

Animal Husbandry

Anesthesia

Behavior Test

Euthanasia

Field Observation

Injection/Fluid Withdrawal

Non-Survival Surgery

Perfusion

Tissue Sampling

Trapping/Tagging

Survival Surgery

Other(s), please specify .....

**Section IV: Experience and Training** *(Attached Certificate of Training, if applicable)*

Describe this individual's experience and training in regards to the species involved and the procedures performed under this protocol.

.....  
.....  
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.....

**Section V: Personnel Assurances**

I verify that the information provided in this personnel form is accurate and complete. I understand that, along with the Principal Investigator, I have a responsibility for the ethical performance of the research, the welfare of the animals involved, and adherence to any IACUC imposed conditions.

.....

Name

.....

Signature

.....

Date



## AMENDMENT REQUEST FORM

CHULALONGKORN UNIVERSITY  
ANIMAL CARE AND USE COMMITTEE (CU-ACUC)

OFFICE  
USE

DATE RECEIVED:

APPROVAL DATE:

DATE EXPIRED:

### Section I: Protocol Information

Principal Investigator: \_\_\_\_\_ Protocol Number: \_\_\_\_\_

Title of Project: \_\_\_\_\_

### Section II: Requested Changes (Choose all that pertain)

- |  |   |
|--|---|
| <input type="checkbox"/> Animal Species                    | <input type="checkbox"/> Change in Endpoint Criteria            |
| <input type="checkbox"/> Number of Animals                 | <input type="checkbox"/> Pain or Distress                       |
| <input type="checkbox"/> Experimental Procedure            | <input type="checkbox"/> Principal Investigator/Co-investigator |
| <input type="checkbox"/> Change in Anesthetics, Analgesics | <input type="checkbox"/> Other                                  |

### Section III: Requested Change Summary (Complete the item for each requested change above)

- 1. Additional Animal Species:** [Please provide a) the reason for additional species; b) the determination that the new species is the most appropriate; c) how this new species connects with those previously approved.]
  
- 2. Number of Animals:** [Please provide a) reason for requesting additional animals, and b) description of how this number was derived (i.e. statistical basis, current standards in literature, specialized experimental requirements).]

**3. Experimental Procedures:** [please provide a) description of changes (i.e. surgical procedures, # of blood draws, etc) and b) how they relate to work originally approved. Attach addition page if necessary.]

**4. Change in Anesthetics, Analgesic:** [Please provide agent name, dose, method of administration, volume of administration and time of use (i.e. pre-op, op, post-op) and provide rationale for change.]

**5. Endpoint Criteria:** [Please provide revised Endpoint Criteria appropriate for the amendment requested if the criteria given in the original protocol are insufficient.]

**6. Pain and Distress:** [Please provide methods for recognizing and alleviating any additional pain and distress not described in the original protocol. Also provide search for alternatives to this painful or distressful procedure.]

**7. Complete only if there is a change from the original approval**

Principal Investigator

Co-Investigator

Name: .....

Degree: ..... Position: .....

Department: .....

Faculty/Institute: .....

Tel: ..... Fax: .....

E-mail: .....

**8. Other, please describe:**

**Section IV: Assurance**

The above information is accurate, and the assurances given in my original application are still valid. Any changes involving the use and care of animals for research and/or teaching may not be made without prior IACUC approval.

.....

Signature of Principal Investigator

.....

Date