**INSTRUCTIONS**

Before carrying out a procedure with animals, the academic must have a protocol for the care and use of animals, which allows the planning, anticipation, and structuring of their work. This protocol must be presented to the Scientific Ethics Committee for the Care of Animals and the Environment (CEC-CAA) to evaluate its ethical-scientific aspects and compliance with current ethical regulations. The construction and evaluation of the protocol by the researcher and the committee are achieved through its sections that collect information of the type: 1) administrative, 2) purpose and justification of the research, 3) experimental design, 4) use, and 5) procedures with animals, 6) animal welfare, 7) euthanasia and 8) level of severity.

**To complete this protocol, use the FILLING INSTRUCTIVE**  and upload it to the platform in **WORD format** <https://evaluacionetica.uc.cl/>, along with the rest of the required documents.

**COMPLETE THE FOLLOWING CHECKLIST, entry for review required (click on the box).**

|  | I am familiar with the [UC Animal Care Program](http://eticayseguridad.uc.cl/programa-cuidado-animal.html), its regulations, and my responsibilities as a researcher regarding the use and care of animals. |
| --- | --- |
|  | I have used the [**FILLING INSTRUCTIVE**](https://www.dropbox.com/s/tjhbigdqoc9zlip/Instructivo%20Llenado%20Protocolo%20Cuidado%20y%20Uso%20de%20Animales%202022.pdf?dl=0) to complete the protocol and know the committee sessions [calendar](http://eticayseguridad.uc.cl/comite-etico-cientifico-para-el-cuidado-de-animales-y-ambiente/calendario-de-sesiones-cec-animal.html). |
| ⬜ | I have completed **ALL the blank spaces**, modifying their length as necessary. If any requested information did not apply to my project, I have filled in N/A (Not Applicable) or I have written a justification. |
|  | I have completed the entire document in the same language: Spanish or English. I have written the rationale for the common citizen in Spanish. |
|  | I have uploaded the supervision guideline and the training of the research team to the platform, or attached to this form. |
|  | In case of doubts about animal care or procedures, I have resorted to the references integrated into this form and its instructions and/or to the veterinary doctors in charge of the enclosures that house animals. |
| ⬜ | I understand that once the Committee reviews the protocol and attached documents, comments will be sent to me, which must be answered. For this, I will have to edit the protocol highlighting in yellow the changes for a second version. For later rounds I'll edit highlighting changes in calypso for the third version and highlighting changes in green for the fourth version. I will use other colors if there are more reviews. |
| ⬜ | I understand that I should **NOT** fill out this form in the following cases:   * Formulation of an SOP (standard operating procedure), or a pilot project: to do so, download the form at this [link](http://eticayseguridad.uc.cl/comite-etico-cientifico-para-el-cuidado-de-animales-y-ambiente/recursos-cec-caa.html), complete it and upload it to the platform. * If my project has not been awarded. Ethical evaluation is carried out on awarded projects. If you have particular requests in this regard or other administrative questions, you can contact the CEC-CAA coordination [link](http://eticayseguridad.uc.cl/unidad-etica-y-seguridad/quienes-somos.html). * If I am going to work only with non-cephalopod invertebrates. * If my experiments will be carried out completely in the facilities of a University or institute outside the UC that has CICUA. In this case, I must send an email explaining my case to the CEC-CAA coordination [link](http://eticayseguridad.uc.cl/unidad-etica-y-seguridad/quienes-somos.html). |

**SECTION 1. ADMINISTRATIVE BACKGROUND**

| **Indicate protocol code:** | XXXXXXXXX | | | | | | **Indicate 1a version sending date:** | | | | | XX/XX/XXXX |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Version, mark with X:** | **1:** |  | **2:** |  | **3:** |  | **4:** |  | **5:** |  | **Other versions:** | |

| **Project title:** | … |
| --- | --- |
| **Indicate Funding Source(s) and assigned number: (E.g. Regular Fondecyt 11170303)** | … |
| **Indicate if this research is: research unit / undergraduate thesis/doctorate/master/teaching / etc..:** | … |
| **Other participating institutions (example: INACH, industry, other universities):** | … |

| **RESEARCH TEAM** | | | | | |
| --- | --- | --- | --- | --- | --- |
| **KIND OF**  **MEMBER** | **Name:** | **Rol:** PI, Researcher, Co-researcher, Associate Researcher, Postdoctorate, doctoral thesis student, lab manager, laboratory technician, etc.) and **Academic Category if applicable** (Instructor, Associate professor, etc.): | **Institution:** | **e-mail:** | **Training in Animal Research Ethics ✧**  Indicate  **\*Yes** or **\*\*No** |
| **UC Academic Responsible** |  |  |  |  |  |
| **Principal Investigator** |  |  |  |  |  |
| **Team member** |  |  |  |  |  |
| *… Add more rows if required* |  |  |  |  |  |

**All research must have a UC Academic Responsible**

**✧**  [**Training in Animal Research Ethics and/or welfare and management of experimental animals.**](#bookmark=id.30j0zll)

**\*** Attach certification. **\*\*** The following link will take you to the training program in ethics and handling of research animals: [Learning Library](https://sso.aalaslearninglibrary.org/Shibboleth.sso/Login?entityID=https://sso.uc.cl/cas/idp) AALAS Courses. Once the mandatory courses are completed, a certificate will be automatically generated that you must attach.

| **IN CASE OF AN EMERGENCY WITH ANIMALS DURING NON-WORKING HOURS, NOTIFY** | |
| --- | --- |
| **Name:** | **Telephone:** |
| **Name:** | **Telephone:** |

*… Add more rows if required*

**SECTION 2. PURPOSES AND JUSTIFICATION OF THE RESEARCH**

| **2.1. SCIENTIFIC FOUNDATION.** Indicate the main relevance(s) of the Project. |
| --- |
| *Approximately 300 words. Mention what the project will be about and the animal model to be used (delete this sentence when completing).*  … |

| **2.2. FOUNDATION FOR THE ORDINARY CITIZEN**. This section may be public knowledge. |
| --- |
| *Approximately 300 words. Use language that is easy to understand for the common citizen, mention what the project will be about and the animal model to be used (delete this sentence when completing).*  … |

| **2.3. HYPOTHESIS** | … | |
| --- | --- | --- |
| **2.4. OVERALL OBJECTIVE** | … | |
| **2.5. SPECIFIC OBJECTIVES** | **Specific goal** | **Is it done at UC?, YES/NO\*** |
| 1. |  |
| 2. |  |
| 3. |  |
| *… Add more rows if required* |  |

**\*** **NOTE:** If your project is funded by a collaborative research program **(Millennium Scientific Initiative, Research Ring, FONDAP, BASAL, or any other that has collaboration),** it is important that you specify objectives that will be executed in this institution and which in the collaborating institution.

**SECTION 3. EXPERIMENTAL DESIGN**

| **3.1. FLOWCHART**. Make a(some) flowchart(s) that include(s) the experimental groups, controls, treatments, temporality of the treatments, number of animals, parameters/variables to be analyzed, etc.  You can use this link to generate your flowchart: <https://eda.nc3rs.org.uk/> |
| --- |
| *Remember that your flowchart must contain the number of animals to be used, experimental groups and temporality. You can make more than one flowchart if you see fit. E.g.: one for the design that includes the groups and another for the temporary scheme (delete this sentence when completing).*  … |

| **3.1. DESCRIPTION OF THE EXPERIMENTAL DESIGN.** Describe the experimental groups (controls and treatments) that are compared as part of the objectives. Indicate the n (n=number) of each group (identify the experimental unit and replicates if applicable) and the total n per objective. Mention the variables that will be quantified and that will be the subject of subsequent statistical analysis. Mention the measures adopted to avoid bias in the results: Will you use a random selection of animals or cages to assign treatments? What part of the results will you analyze blindly? Consult [ARRIVE](https://arriveguidelines.org/arrive-guidelines) Guidelines. |
| --- |
| *Describe in narrative form the experimental procedures of the project and its temporality (delete this sentence when completing).*  … |

| **3.3. JUSTIFICATION OF THE NUMBER OF ANIMALS.** Justify the number of animals (n) to be used, include the calculation of the sample size, and justify if there is an exception. Consider if you will have a percentage of animal loss and justify. Use INSTRUCTIONS. |
| --- |
| *Justify the number of animals to be used, remember to include the calculation of the sample size if applicable (delete this sentence when completing).*  … |

**SECTION 4. USE OF ANIMALS**

| **Type** | **Laboratory animal** | **Farm animal** | **Wild animal\*** | **Animal companion** | **Other(s) (detail)** |
| --- | --- | --- | --- | --- | --- |
| **Mark with an X** |  |  |  |  |  |

*\** *If you do not know which species you will sample, indicate which are the most common species that you could find and which of them are protected.*

| **4.1. DETAIL OF ANIMALS TO BE USED PER OBJECTIVE.** Indicate the number of animals to be used according to species, strain, weight, sex and stage of development. Check that it is consistent with the flowchart. | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Objective** | **Species / Strain** | **Age / Stage of Development** | **Weight** | **Sex** | **Number to be used** | **Conservation status of the species** | **SAG authorization/ Sernapesca/other** |
| **1** |  |  |  |  |  | *Indicate: endangered / vulnerable / rare / N/A* | *Indicate: Yes/No/ In process/N/A* |
| **2** |  |  |  |  |  |  |  |
| **3** |  |  |  |  |  |  |  |
| **\*** **TOTAL number TO USE =** | | | | | |  | |

*… Add more rows if required*

*\** *If you are changing the n in an amendment, add space in this row and write what the original and amended numbers were by marking the new text with color.*

| **4.2. JUSTIFICATION FOR THE USE OF ANIMALS** versus alternative models: |
| --- |
| *Justify why you need to use animals, reflect on the replacement of the 3 Rs (delete this sentence when completing)*  … |
| **4.3. JUSTIFICATION OF SPECIES** to use: |
| *Justify why you need to use the specific species (delete this sentence when completing)*  … |

| **4.4. ANIMAL ORIGIN AND KEEPING:** | | | | | |
| --- | --- | --- | --- | --- | --- |
| **a) 0rigin of animals:** | … | | | | |
| **b) Indicate if you will transport animals within the institution, from one institution to another, from land (field) to an institution. Describe from and to where, as well as the means and conditions of transport:** | … | | | | |
| **c) Place where animals are kept during the protocol development:** | … | | | | |
| **d) Name and email of the person in charge of the place where the animals are kept:** | … | | | | |
| **e) Do you have a letter or email authorizing the use of animals from the person in charge of the enclosure?**  **Mark with an x**  **All researchers must contact the person in charge of the enclosure for feasibility advice.** |  | **YES** | | *Don't forget to attach it* | |
|  | **In process** | | *Remember to attach it for the next round of reviews* | |
|  | **NO** | | *You must start this procedure as soon as possible, as it is a requirement for the approval of the protocol.* | |
|  | **N/A** | | *If it does not apply or you cannot obtain it, justify:*  … | |
| **d) In vivariums, the use of environmental enrichment is mandatory. In case of not using or deciding to use different elements, describe and justify. If not applicable, write N/A.** | … | | | | |
| **e) Animal density (number of animals per cage, pen, enclosure, also state the dimensions of these: floor area/animal and height).** | *…*  *This should only be completed by those who carry out research outside of the UC animal facilities.* | | | | |
| **f) Site of procedures and physical location of the site of procedures:** | …  *Indicate the place where you perform the procedures with animals. E.g.: CIM surgery room, CIBEM procedure room.* | | | | |
| **g) Identification method(s) of the animal, mark with an X:** | **Marker** | | **Ear notch** | | **Other (describe)** |
|  | |  | |  |

| **4.5. USE or GENERATION OF GENETICALLY MODIFIED ANIMALS.** Mark with an X. If not applicable, mark N/A. | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | **Use** |  | **Generation** |  | **N/A** |
| **a) Describe the genotype and phenotype of the genetically modified animals to be used, and the timing of the appearance of signs/symptoms:** | | | | | |
| … | | | | | |
| **b) Indicate the type of cross (refer to the parental genotype) used to generate the animals:** | | | | | |
| … | | | | | |

**SECTION 5. PROCEDURES TO BE CARRIED OUT WITH THE ANIMALS**

| **5.1. AUTHORIZED PERSONNEL**  **Complete the following List of Persons Authorized for the Handling of Animals.** If you include staff with animal handling experience, attach certifications. If you plan to recruit staff but have not done so yet, identify them as NN and indicate what training they should have. Remember that any new inclusion of personnel must be informed to the committee by means of an amendment before the person begins their work with animals. |
| --- |

| **LIST OF PERSONS AUTHORIZED FOR THE HANDLING OF ANIMALS** |
| --- |

| **Name:** |  | | | |
| --- | --- | --- | --- | --- |
| **Function and techniques to perform in this protocol:** |  | | | |
| **Animal handling experience. Mark with X:** |  | **Yes** |  | **NO** |
| **If you indicate "YES", mention who trained you and the years of experience in the functions and techniques to be performed in this protocol:** |  | | | |
| **If you indicated “NO, mention who will train you in the functions and techniques to be performed in this protocol:** |  | | | |

***Copy and complete this chart for each member of the research team associated with this protocol who will handle animals.***

| **5.2. NON-SURGICAL PROCEDURES.** List NON-SURGICAL procedures, including those performed under anesthesia. Examples: administration of substances, behavioral tests, different types of diet, restraint or immobilization methods, temperature conditions, survival studies, bronchoalveolar lavage, etc.. |
| --- |
| … |

| **5.2. a) BLOOD EXTRACTION.** In case of blood extraction, complete the following chart (see INSTRUCTIONS): | | | | | |
| --- | --- | --- | --- | --- | --- |
| **Species** | **Route** | **Volume to extract each time** | **Frequency** | **Needle gauge** | **Responsible** |
|  |  |  |  |  |  |

*… Add more rows if required*

| **5.2. b) COMPOUND ADMINISTRATION, EXCEPT anesthetics, analgesics and related, which will be requested in SECTION 6 of Animal Welfare.** That is, in this chart include for example: diet, alcohol, microorganisms, viruses, drugs, etc. | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Identify the Compound** | ... | | … | | … | | … | | … | |
| **Finished pharmaceutical product, mark with an X** |  | **YES** |  | **YES** |  | **YES** |  | **YES** |  | **YES** |
|  | **NO** |  | **NO** |  | **NO** |  | **NO** |  | **NO** |
|  | **N/A** |  | **N/A** |  | **N/A** |  | **N/A** |  | **N/A** |
| **Pharmaceutical presentation:** |  | |  | |  | |  | |  | |
| **Indicate lethal dose 50 (cite reference or link in** [**pubchem.ncbi.nlm.nih.gov**](https://pubchem.ncbi.nlm.nih.gov/)**. If you can't get it, explain:** |  | |  | |  | |  | |  | |
| **Indicate how the compound is prepared:** |  | |  | |  | |  | |  | |
| **Dose:** |  | |  | |  | |  | |  | |
| **Route:** |  | |  | |  | |  | |  | |
| **Volume:** |  | |  | |  | |  | |  | |
| **Administration Frequency:** |  | |  | |  | |  | |  | |
| **Treatment duration:** |  | |  | |  | |  | |  | |
| **Compound administration manager:** |  | |  | |  | |  | |  | |

| **Indicate the source (bibliography or other) on which the choice of the compounds indicated above was based, or justify the choice of method:** |
| --- |
| … |

| **5.3. SURGICAL PROCEDURES.** Write here the details of the surgical procedures to be performed: | | | | |
| --- | --- | --- | --- | --- |
| … | | | | |
| **a) Indicate intraoperative support measures. Mark with an x.** |  | **Serum** |  | **Ophthalmic ointment** |
|  | **Heat (indicate how you will provide it): …** |  | **Other (specify): …** |
| **b) Asepsis methods during surgery:** |  | | | |
| **c) Number of animals to be operated/processed per day and estimated duration of the surgery/intervention:** |  | | | |
| **d) Describe *post-mortem* procedures. Remember that asepsis is just as important.** |  | | | |
| **e) Conditions of the place where the surgical procedure will be performed.** |  | | | |
| **f) If the surgical procedure(s) include(s) animal survival, define the duration and care of the immediate and mediate postoperative period. Indicate the frequency of care. Identify the person responsible.** |  | | | |
| **g) Indicate if the animals to be used have previously undergone or will undergo any invasive or surgical procedure more than once. If yes, indicate time interval between surgeries and/or invasive procedures.** |  | | | |

| **5.4. PROBABLE STARTING DATE** of procedures with animals (where possible include Gantt Chart). |
| --- |
| … |

**SECTION 6. ANIMAL WELFARE**

| **6.1. IMPACT ON ANIMAL WELFARE.** Indicate what impact on animal welfare you expect with your protocol, considering the procedures, species, physiological state and/or phenotypes of the animals, and what actions you will take. |
| --- |
| … |

| **6.2. SUPERVISION.** Indicate the frequency and period of supervision of the animals, if required. Remember this information must also be established in the guidelines for the supervision of the animals. | | |
| --- | --- | --- |
| … | | |
| **Do you attach the animal supervision guideline(s) or does it not apply? Mark with an X**  Remember this guideline must be SPECIFIC, that is, applicable to the experimental condition of each proposed animal model. Check[*Examples of supervision guidelines*](https://www.dropbox.com/sh/8cx9txww5ctia57/AABRmuh9YmwXyBiqSAhTkB3Ta?dl=0) |  | **YES** |
|  | **NO** |
|  | **N/A** |

| **6.3. ANESTHESIA AND ANALGESIA.** Indicate the compounds that will be used to induce anesthesia, analgesia and other palliative care, that is, include anti-inflammatories, tranquilizers and sedatives. |
| --- |

| **Anesthetics** | **Dose** | **Route** | **Volume** | **Frequency** | **Treatment duration** | **Procedure in which it will be used** |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

| **Analgesics and/or anti-inflammatories** | **Dose** | **Route** | **Volume** | **Frequency** | **Treatment duration** | **Procedure in which it will be used** |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

| **Sedatives and/or Tranquilizers** | **Dose** | **Route** | **Volume** | **Frequency** | **Treatment duration** | **Procedure in which it will be used** |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

*… Add more rows if required*

**SECTION 7. EUTHANASIA**

| **7.1. EUTHANASIA CRITERIA AS A HUMANE ENDPOINT.** Describe the criteria(s) for stopping work with animals, according to what is stated in the supervision guideline or if there is an additional criterion to be evaluated. In the latter case, remember to add it as a note to the monitoring guideline. |
| --- |
| … |

| **7.2. EUTHANASIA METHOD(S)** | | | |
| --- | --- | --- | --- |
| **PROTOCOL STAGE** | **Indicate method, dose, and route of administration** | **Species and stage of development** | **Person responsible for the procedure** |
| **Euthanasia for End of Protocol** | Method:………..  Dose:…………  Route of administration:……… | Species and stage of development: ……….. | Responsible:……. |
| **Euthanasia for Humane Endpoint** | Method:………..  Dose:…………  Route of administration:……… | Species and stage of development: ……….. | Responsible:……. |

*… Add more rows if required*

Indicate the method of euthanasia to be used **both for the humane endpoint and for the end of the protocol**. You can enter the link: [AVMA Euthanasia 2020.](https://www.avma.org/sites/default/files/2020-01/2020_Euthanasia_Final_1-15-20.pdf)(American Veterinary Medical Association Guidelines for the Euthanasia of Animals: 2020 Edition) and consult the methods accepted by species.

**SECTION 8. SEVERITY LEVEL**

| Complete the following chart with **each of the procedures you will perform on animals, according to their level of severity**. To classify as Mild, Moderate, and/or Severe, follow the INSTRUCTIONS. For moderate or severe procedures, palliative measures should be adopted, such as the use of analgesics and the establishment of endpoint criteria. |
| --- |

| **PROCEDURES** | **MILD** | **MODERATE** | **SEVERE** | **WITHOUT**  **RECOVERY** |
| --- | --- | --- | --- | --- |
| **NON-SURGICAL** |  |  |  |  |
| **SURGICAL** |  |  |  |  |