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| Animal Experiment Supervisor |  | Safety Office |  | received on |  |

Animal Experiment Application Form (Synchrotron Radiation Experiment)

Date (dd/mm/yy)：\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

To Director, Japan Synchrotron Radiation Research Institute

 （Chief Animal Experiment Researcher）1）Affiliation:

 Title:

 Name (Print)

 Name (Signature)

（Head of Department）2）Title:

 Name (Print)

 Name (Signature)

 3）Director of SPring-8 Users Office (print)

To carry out the following animal experiment, I hereby apply for approval of the animal committee.

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| Chief Animal Experiment Researcher contact information | Address(ZIP code )Tel(extension/PHS)FAXE-mail |
| Person to act in Chief Animal Experiment Researcher’s absence3） | AffiliationNameAddress(ZIP code )Tel(extension/PHS)FAXE-mail  |
| Chief Animal Experiment Researcher(CAER)／Other Animal Experiment Researchers(AERs)(All researchers must be registered as an animal experiment researchers) 4） |
| Name | Affiliation, Division | The registration number as an animal experiment researcher |
| CAER |  |  |
| AERs |  |  |
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| Status in your institute 5） | Has this experiment been approved in your institute?( ) Yes ( ) No ( ) Submitted ( ) Not a requirement |
| Purpose of the experiment 6） |  |
| Method of the experiment 7) | ( )Irradiation ( )Small-angle scattering ( )Angiography ( )CT( )Imaging ( )Sample collection ( )Others( ) |
| Reasons why animals are needed 8） | ( )There is no alternative method of investigation.( )Sensitivity/accuracy of alternative methods is insufficient( )Others ( ) |

Description of the experiment 9)

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| Animals to be used |
| Species |  |
| Strain |  |  |  |
| ( )non-transgenic ( )transgenic | ( )non-transgenic ( )transgenic | ( )non-transgenic ( )transgenic |
| Descriptions | Age; weeksGestation; weeks | Age; weeksGestation; weeks | Age; weeksGestation; weeks |
| Microbiological level | ( )SPF( )Germ free( )Semi-clean( )Others( ) | ( )SPF( )Germ free( )Semi-clean( )Others( ) | ( )SPF( )Germ free( )Semi-clean( )Others( ) |
| Number to be used | Female;Male;Number of cages; | Female;Male;Number of cages; | Female;Male;Number of cages; |
| Justification of the number to be used (details of the calculation based on the groups, protocols, statistical power, etc.) |  |  |  |
| Supplier of the animal |  |  |  |
| Method of transportation | ( )By courier ( )Carry-in | ( )By courier ( )Carry-in | ( )By courier ( )Carry-in |
| Delivery location |  |  |  |
| What you do to the animal after the experiment 11) | 1)Method of euthanasia( )Administration of anesthetics （Chemical name Dose, method: ）( ) Pithing under anesthesia (e.g. cervical dislocation)( )Other methods( )2)Disposal of the corpse (organs/tissues)( )Bring back to the institute of the applicant and entrust to a disposal contractor ( )Leave in a freezer and request a SPring-8 staff to entrust to a disposal contractor( )Others( )3)Others(continue observation, used in other experiment, etc.)( ) |
| Other safety hazards12） | ( )none ( )yes (fill the column below) |
| Other safety hazards 13） | ( )Use of a transgenic animal(reception number; )( )Use of psychotropic drugs (pentobarbital etc.), poison, drastic ( )Use psychotropic drug(s) stored at SPring-8 (drug name: ) ( )Bring( ) from other institute( )Others( ) |

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| Description of the experiment [Pre-treatment of the animals outside SPring-8] 10） |
| What you do to the animal | a. Category 14） | ( )none ( )Sample collection ( )Surgical operation ( )Induce tumor( )Induce disease( ) ( )Drug administration( )Others( ) |
| b. Level of pain and distress (SCAW classification)15) | ( )A ( )B ( )C ( )D ( )EReason; |
| c. Location 16） | ( )Animal Housing Facility, operation room( )Medium-length Beamline Facility Experiment building, operation room( )Mobile operation house (used at BL )( )BL Experiment hutch. Optics hutch( )Others( ) |
| d. Description of the experiment17） | Method of restraint (devices, period)Procedure during transport to SPring-8 |
| e. Method of reduction of pain and distress 18) | ( )Unnecessary because the animal feels little pain( )Unnecessary because the period retention is short( )Use an anesthetic or pain-killer Drug name ( )  dose, method of administration ( )( )No way to reduce pain and/or stress without affecting the scientific purpose (Reason; )( )No way to avoid retention of animals for a long period (Reason; )( )Apply a humane endpoint (criteria of decision )( )Others( ) |
| Description of the experiment [Treatment of laboratory animals at SPring-8]  |
| What you do to the animal | a. Category 14） | ( )none ( )Sample collection ( )Surgical operation ( )Induce tumor( )Induce disease( ) ( )Drug administration( )Others( ) |
| b. Level of pain and distress (SCAW classification) 15) | ( )A ( )B ( )C ( )D ( )EReason; |
| c. Location 16） | ( )Animal Housing Facility, operation room( )Medium-length Beamline Facility Experiment building, operation room( )Mobile operation house (used at BL )( )BL Experiment hutch. Optics hutch( )Others( ) |
| d. Description of the experiment 17） | Method of restraint (devices, period)Prevention of escapePrecautions during transportation |
| e. Method of reduction of pain and distress 18) | ( )Unnecessary because the animal feels little pain( )Unnecessary because the period retention is short( )Use an anesthetic or pain-killer Drug name ( )  dose, method of administration ( )( )No way to reduce pain and/or stress without affecting the scientific purpose (Reason; )( )No way to avoid retention of animals for a long period (Reason; )( )Apply a humane endpoint (criteria of decision )( )Others( ) |

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| Description of the experiment [SR experiment]  |
| SR experiment | a. Category 14） | ( )No SR experiment( )Irradiation( )Others( ) |
| b. Level of pain and distress (SCAW classification)15) | ( )A ( )B ( )C ( )D ( )EReason; |
| c. Location 16） | ( )Animal Housing Facility, operation room( )Medium-length Beamline Facility Experiment building, operation room( )Mobile operation house (used at BL )( )BL Experiment hutch. Optics hutch( )Others( ) |
| d. Description of the experiment 17） | Method of restraint (devices, period)Prevention of escapePrecautions during transportation |
| e. Method of reduction of pain and distress18) | ( )Unnecessary because the animal feels little pain( )Unnecessary because the period retention is short( )Use an anesthetic or pain-killerDrug name ( )dose, method of administration ( )( )No way to reduce pain and/or stress without affecting the scientific purpose(Reason; )( )No way to avoid retention of animals for a long period(Reason; )( )Apply a humane endpoint(criteria of decision )( )Others( ) |

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| Description of the experiment [Post-treatment]  |
| What you do to the animal | a. Category 14） | ( )none ( )Sample collection ( )Surgical operation ( )Induce tumor( )Induce disease( ) ( )Drug administration( )Others( ) |
| b. Level of pain and distress (SCAW classification) 15) | ( )A ( )B ( )C ( )D ( )EReason; |
| c. Location 16） | ( )Animal Housing Facility, operation room( )Medium-length Beamline Facility Experiment building, operation room ( )Mobile operation house (used at BL )( )BL Experiment hutch. Optics hutch( )Others( ) |
| d. Description of the experiment 17） | Method of restraint (devices, period)Prevention of escapePrecautions during transportation |
| e. Method of reduction of pain and distress 18) | ( )Unnecessary because the animal feels little pain( )Unnecessary because the period retention is short( )Use an anesthetic or pain-killer Drug name ( )  dose, method of administration ( )( )No way to reduce pain and/or stress without affecting the scientific purpose (Reason; )( )No way to avoid retention of animals for a long period (Reason; )( )Apply a humane endpoint (criteria of decision )( )Others( ) |

(Notices)

1) Chief Animal Experiment Researcher (CAER) is required to have more than one year's experience in animal experiments and to engage in this experiment at SPring-8. The CAER does not have to be the Project Leader of the SR experiment. Students are not suitable as CAER.

2) Signature of the head of faculty, school or institute of CAER is required.

3) Leave empty.

4) A person to be contacted when CAER is not available.

5) List all researchers who will engage in this animal experiment at SPring-8. All should be registered as animal experiment researchers at SPring-8. For the registration, fill Form17-6 and send it to the Users Office.

6) Specify whether or not this experiment at SPring-8 has been approved by the animal care and use committee in your institute.

7) Describe the scientific aims, benefits and significance of the experiment.

8） Mark the appropriate method.

9) Mark the appropriate reason.

10) "Description of the experiment" should be filled for each species that is subjected to an experiment at SPring-8. For example, if the experiment involves use of mouse, guinea-pig and rat, three sets (each including "Pre-treatment", "SR experiment" and "Post-treatment") of the form are required. The forms should be copied when necessary.

11) Describe the treatment done in your own (or other) institute or in the laboratory of the supplier before shipping the animal to SPring-8. Mention the ethics approval by the institute or laboratory. Details should be described in “Pre-treatment”. Specify the location of treatment and describe details in “Treatment of laboratory animals”.

12) Check the appropriate box and fill the necessary details.

13) Fill this when a transgenic animal or a psychotropic drug is used. Use of formalin or other poisonous chemicals for chemical fixation should be described.

14) In “Description of the experiment,” fill in all fields from “a. Category” to “e. Method of reduction of pain and distress” for each step from “Pretreatment”, “Treatment of laboratory animals at SPring-8”, and “SR experiment”, to “Post-treatment”. For steps not applicable, check “none” in “a. Category” and ignore the fields from “b. Level of pain and distress” to “e. Method of reduction of pain and distress”.

15) Check the appropriate box. The SCAW categories are defined by "Scientists Center For Animal Welfare" (see below).

16) Describe where the procedure specified by "a. Category" is done.

17) Describe the details of the procedure specified by "a. Category".

18) Check the appropriate box and give required details. Method of euthanasia should be indicated in "What you do to the animal after the experiment" of "Description of the experiment".

Scientists Center for Animal Welfare (SCAW)

Consensus Recommendations on Effective Institutional Animal Care and Use Committees　(Laboratory Animal Science, Special Issue pp.11-13. Jan. 1987)

Category A

Experiments involving either no living materials or use of plants, bacteria, protozoa, or invertebrate animal species. Biochemical, botanical, bacteriological, microbiological, or invertebrate animal studies, tissue cultures, studies on tissues obtained from autopsy or from slaughterhouse, studies on embryonated eggs. Invertebrate animals have nervous systems and respond to noxious stimuli, and therefore must also be treated humanely.

Category B

Experiments on vertebrate animal species that are expected to produce little or no discomfort. Mere holding of animals captive for experimental purposes; simple procedures such as injections of relatively harmless substances and blood sampling; physical examinations; experiments on completely anesthetized animals which do not regain consciousness; food/water deprivation for short periods (a few hours) ; standard methods of euthanasia that induce rapid unconsciousness, such as anesthetic overdose or decapitation preceded by sedation or light anesthesia.

Category C

Experiments that involve some minor stress or pain (short-duration pain) to vertebrate animal species. Exposure of blood vessels or implantation of chronic catheters with anesthesia; behavioral experiments on awake animals that involve short-term stressful restraint; immunization employing Freund's adjuvant; noxious stimuli from which escape is possible; surgical procedures under anesthesia that may result in some minor post-surgical discomfort. Category C procedures incur additional concern in proportion to the degree and duration of unavoidable stress or discomfort.

Category D

Experiments that involve significant but unavoidable stress or pain to vertebrate animal species. Deliberate induction of behavioral stress in order to test its effect ; major surgical procedures under anesthesia that result in significant post-operative discomfort; induction of an anatomical or physiological deficit that will result in pain or distress; application of noxious stimuli from which escape is impossible; prolonged periods (up to several hours or more) of physical restraint; maternal deprivation with substitution of punitive surrogates; induction of aggressive behavior leading to self-mutilation or intra-species aggression; procedures that produce pain in which anesthetics are not used, such as toxicity testing with death as an end point; production of radiation sickness, certain injections, and stress and shock research that would result in pain approaching the pain tolerance threshold, i.e. the point at which intense emotional reactions occur. Category D experiments present an explicit responsibility on the investigator to explore alternative designs to ensure that animal distress is minimized or eliminated.

Category E

Procedures that involve inflicting severe pain near, at, or above the pain tolerance threshold of unanesthetized, conscious animals. Use of muscle relaxants or paralytic drugs such as succinyl choline or other curariform drugs used alone for surgical restraint without the use of anesthetics; severe burn or trauma infliction on unanesthetized animals; attempts to induce psychotic-like behavior; killing by use of microwave ovens designed for domestic kitchens or by strychnine; inescapably severe stress or terminal stress. Category E experiments are considered highly questionable or unacceptable irrespective of the significance of anticipated results. Many of these procedures are specifically prohibited in national policies and therefore may result in withdrawal of federal funds and/or institutional USDA registration.