

**Management Measures of Shenzhen Institute of Advanced
Technology, Chinese Academy of Sciences on Behavior of
Experimental Animal Practitioners**

Chapter 1 Animal Facility Access System

Article 1 Personnel who have participated in animal facility access training and passed the assessment can enter the animal facilities by swiping their personal access card/fingerprint after applying for access permission.

Article 2 Personal access cards must not be lent to individuals who have not passed the assessment, and experimental personnel must not borrow access cards from others to enter or exit the animal facilities.

Article 3 When other individuals request access or borrow access cards citing reasons such as not having their own card or having access card malfunctions, it is the responsibility of the cardholder to verify the access status of the requester.

Article 4 In principle, unrelated personnel without access permission are not allowed to enter the animal facilities. In special circumstances where entry is necessary (such as for instruments and equipment maintenance or external visitors), approval from the Office of Experimental Animal Management is required, and entry must be accompanied by designated personnel.

**Chapter 2 Behavioral Standards for Personnel Entering and Exiting Barrier
Environments**

Article 5 Follow the procedures outlined in the *Standard Operating Procedures for Personnel Entering and Exiting Small Animal Laboratories* to enter and exit barrier facilities, and do not go against the flow.

Article 6 When entering barrier facilities, except for the eyes, skin, hair, or clothing shall not be exposed inside the barrier facilities.

Article 7 To maintain pressure differentials and ensure adequate air buffering, doors inside barrier facilities shall be closed promptly, and it shall be ensured that any two doors in the same area are not simultaneously open.

Chapter 3 Behavioral Standards for Animals Entering and Exiting Barrier Environments

Article 8 Animals must be introduced through compliant procedures and cage reservations shall be made in advance as required. Animals without quarantine reports/qualifications for experimental animal quality or those with unknown sources or failed tests are not allowed to enter the animal facilities for feeding.

Article 9 Experimental animals previously exposed to regular environments are not allowed to re-enter barrier environments, including situations such as damaged transport cages during transportation.

Article 10 Animals can only be transferred from areas with higher cleanliness to areas with lower cleanliness, and reverse transfers are not allowed.

Chapter 4 Behavioral Standards for Items Entering and Exiting Barrier Environments

Article 11 All items entering barrier facilities must be properly disinfected and sterilized and relevant forms must be correctly filled out. Feed, water, bedding, cages, etc., must be sterile. Unsealed or damaged sterile feed cannot be brought into the barrier area for use.

Article 12 Items that cannot be disinfected with UV light must be thoroughly disinfected by wiping or spraying the surface with disinfectant solution before being transferred into the barrier facility through the pass-through window; experimental reagents and similar items must be sprayed with disinfectant solution and subjected to UV irradiation through the pass-through window for no less than 30 minutes before entry; If it's absolutely necessary to use a mobile phone, it must be placed in a transparent self-sealing bag, sprayed with disinfectant on the surface, and then entered through the pass-through window; surgical instruments, cages, bedding, and other items resistant to high temperature and high pressure must be sterilized by autoclaving before entry; large items that are not resistant to high temperature and high pressure must be disinfected and then passed through the low-temperature disinfection room with the consent of the personnel.

Article 13 Operation carts and transport carts can only be used in clean areas within the feeding facility and must not be taken into waste corridors (exit buffer room) or external areas.

Article 14 Waste and personal items must not be passed out through the pass-through window after feeding or experiments. They must be taken out by personnel through the waste corridor.

Chapter 5 Behavioral Standards to Ensure Facility Hygiene and Biosafety

Article 15 It is prohibited to bring in radioactive, highly toxic substances, pathogenic microorganisms of Class III or above, environmental bacteria, etc., that can easily harm or contaminate the facility environment without permission.

Article 16 When using experimental animals, grids and cage covers shall be promptly closed to prevent mice from escaping. If a mouse escapes, it shall be captured immediately. If not captured, the corresponding area doors and windows shall be closed immediately and personnel shall be informed.

Article 17 Unused cages shall be promptly returned to their designated locations in the washing and disinfection area, and waste feed and dirty bedding shall be conscientiously cleaned up and disposed of in designated bins.

Article 18 When removing sterile clothing, care shall be taken not to trap dust caps or shoe covers in the sterile clothing; sterile clothing shall be turned back to the front, and if there are zippers, they shall be closed.

Article 19 Blades, animal carcasses, medical waste, and general waste must be strictly classified and handled separately, and must not be mixed.

Article 20 Animals must not be kept outside the designated cage space in the animal facility, including on the ground, on carts, etc. Feeding animals or storing them overnight outside the animal facility is strictly prohibited.

Article 21 Experimental items that may accidentally cause harm to personnel, such as liquid nitrogen, needles, surgical blades, must be neatly stored to ensure that there are no risks of accidental contact or touching.

Chapter 6 Requirements for Facility Material Management

Article 22 Without permission, do not use or change equipment parameters privately, such as pulse vacuum sterilizers and IVC hosts.

Article 23 Experimental personnel are allowed to place items in the facility, including instruments and equipment and surgical instruments, consent is required for use, and compensation is required for loss or damage. **Article 24** Do not occupy temporary public resources such as cage positions applied by others, reserved laboratories, and workbenches. In case of conflicts, friendly negotiation shall be conducted to resolve the issue.

Article 25 When taking animals, carefully check the labels and animals in the cages to avoid using other people's animals by mistake.

Article 26 When using the small animal imaging platform instrument, training must be completed in advance, and reservations must be made. The instrument must be used strictly according to the operation specifications.

Chapter 7 Behavioral Standards to Ensure Animal Welfare

Article 27 Euthanasia shall be carried out according to regulations. After confirming the death of the animals, the carcasses can be disposed of properly.

Article 28 When placing IVC cage boxes on the feeding rack, ensure that the plug holes are properly aligned, and check the water bottles and feed (except when fasting or water deprivation as required).

Article 29 Breeding mice shall be promptly divided, with no more than 6 mice per IVC cage after weaning, and no more than 4 rats per cage.

Article 30 When transferring animals, use animal transport carts and cover them with cloth to avoid carrying or lifting cages by hand.

Article 31 In cases where animals experience pain or illness during experiments, they shall be classified according to the animal ethics pain level and provided with effective anesthesia, analgesia, anti-infection, and treatment measures.

Chapter 8 Animal Experiment Management Requirements

Article 32 Conducting animal experiments requires prior submission of the *Animal Use Protocol* to the IACUC (Institutional Animal Care and Use Committee). After review and approval, animal experiments can be conducted within the Institute. It is prohibited to conduct experiments first and then submit the application.

Article 33 External personnel intending to conduct animal experiments in the Institute must submit the *Animal Use Protocol* for internal IACUC review and approval.

Article 34 Purchasing or conducting animal experiments beyond the scope of the application is not allowed. Any changes to the use protocol must be promptly submitted using the *Animal Use Protocol Modification Application Form*.

Article 35 Only personnel listed in the animal use protocol are allowed to conduct relevant animal experiments. It is prohibited for individuals not listed in the protocol to purchase experimental animals.

Chapter 9 Violation Handling Measures

Article 36 In order to further standardize the operation of animal facilities, ensure their proper functioning, guarantee the normal conduct of animal experiments by the Institute's faculty and students, control biosafety hazards, improve the professional service quality of the Office of Experimental Animal Management, and protect the rights and interests of faculty and students, these Measures are specifically formulated.

Article 37 The Office of Experimental Animal Management assigns 1-5 points based on the severity of violations. If an individual accumulates 5 points within a calendar year, their access permissions are revoked. They can only re-enter the animal facility after passing the access training and assessment the following month. If members within the same research group accumulate a total of 10 points, animal procurement is suspended for 8 weeks.

Article 38 All personnel of the Office of Experimental Animal Management encountering violations must promptly point them out and report to the administrator. If necessary, photographic or video evidence shall be obtained, and violators must cooperate with corrective actions. Refusal to admit to violations, after evidence is

collected, results in a one-month suspension of access permissions and public notification and criticism.

Article 39 In cases where a single violation fits multiple point deductions, the highest point deduction is applied.

Article 40 If access suspension cannot be implemented due to the continuity of experiments, individuals must perform voluntary labor in the animal facility (such as laboratory cleaning, scanning and organizing animal records) and retake the training and assessment.

Article 41 In addition to corresponding penalties, the following behaviors will incur additional charges:

(I) Those who feed experimental animals at excessive density will be charged twice the feeding management fees for the excess portion based on the occupied cage number.

(II) Failure to register entry into the barrier system results in a fine of ten times the maintenance fee; failure to supplement exit time from the animal facility results in laboratory use time being calculated until the end of the current day (24:00).

(III) Keeping experimental animals outside designated areas incurs a tenfold charge based on the cage price, in addition to penalties as stipulated;

(IV) Full cost compensation is required for damaged cages, instruments and equipment, or failure to close gas cylinders after instrument use.

Article 42 Animals placed in the animal facility without permission must be euthanized immediately if it cannot be proven that they meet cleanliness requirements, in addition to corresponding penalties.

Article 43 In the case of overdue or excessively dense animal feeding, if no action is taken within one week of notification, the administrator has the right to euthanize the animals.

Chapter X Bylaw

Article 44 Definitions of terms used in these Measures:

(I) Animal facility: This includes areas for experimental animal feeding, experimental areas, and their auxiliary areas;

(I) Barrier facility: This refers to areas for feeding SPF (Specific Pathogen Free) and clean-grade animals. Entry into this area requires strict microbial control for individuals, animals, and items;

(I) Access training failure to pass assessment: This includes three scenarios: failure to attend training, failure to attend assessment after training, and failing the assessment.

Article 45 Encourage faculty and students and employees within the Institute to report violations of experimental animal feeding and use regulations to the IACUC or the Office of Experimental Animal Management.

Article 46 Actions not specified in these Measures are considered prohibited and require prior approval from the administrator before execution. For some violations not listed, administrators will determine penalties based on severity.

Article 47 The violation deduction status of experimental personnel will be published monthly and summarized annually for the research group as part of the year-end assessment to enhance awareness of standardized operations among experimental personnel.

Article 48 These Measures shall be implemented from the date of promulgation. The original *Management Measures of Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences on Behavior of Experimental Animal Practitioners* (SYK ZI [2019] No. 106) shall be repealed simultaneously.

Attachment 4

Specific Scoring Methods for Violations by Experimental Animal Practitioners

<p>(I) The following behaviors are strictly prohibited. Upon discovery, the research group will be issued a severe warning, revoked access permissions for violators for one month, and assigned 5 points:</p>	
1.1	Unauthorized purchase or introduction of animals of unknown origin into animal facilities
1.2	Unauthorized introduction of radioactive or highly toxic substances, or pathogenic microorganisms of Class III and above, into the barrier system
1.3	Unauthorized use of another person's experimental animals
1.4	Refusal to admit, correct, deliberately conceal, or persistently engage in violations
1.5	Behavior such as insults, threats, or physical conflicts
<p>(II) The following behaviors will severely affect the operation of animal facilities and threaten biosafety. Upon discovery, the research group will be issued a severe warning, required written self-criticism from violators, suspended animal procurement for violators for 8 weeks, and assigned 4 points:</p>	
2.1	Introducing animals exposed to the regular environment into the barrier environment
2.2	Conducting experiments in animal facilities that pose potential hazards to human health or have obvious adverse effects on other animals and the environment without approval from the Biosafety Management Committee and IACUC
2.3	Entering the barrier area via the waste corridor from the regular environment
2.4	Unauthorized use, loss, or damage to materials placed by experimental personnel within the facility, including instruments and equipment and surgical instruments
2.5	Feeding experimental animals or storing them overnight outside the animal facility
2.6	Failure to strictly follow the operating procedures of small animal imaging platform instruments
2.7	Failure to close the valve after using a gas cylinder

(III) The following behaviors will threaten the normal operation of animal facilities and pose biosafety hazards. Upon discovery, the research group will be issued a severe warning, required written self-criticism from violators, and assigned 3 points:

3.1	Failure to address, within one week of notification, the over-density feeding of mice at or beyond age of division (21 days old), exceeding the upper limit by three times (15 mice or more)
3.2	Introducing experimental animals into animal facilities for feeding without prior approval or cage arrangement
3.3	Deliberate damage to cage boxes and feeding equipment

3.4	Failure to wear personal protective equipment (PPE) correctly, such as not wearing masks/gloves, removing gloves to use fingerprint door access, not wearing isolation gowns, or arbitrarily opening isolation gown zippers within the barrier system
3.5	Violating regulations on item entry and exit: carrying experimental animals or other items into the barrier system without passing through the pass-through window, or transferring used items or experimental animals out of the clean storage room via the pass-through window.
3.6	Improper disposal of waste or animal carcasses
3.7	Conducting animal experiments by Animal Use Protocol without IACUC approval
3.8	Conducting multiple survival surgeries on the same animal or changing animal experimental protocols without approval from IACUC
3.9	Lending personal access cards to individuals who have not passed training assessments, or bringing individuals who have not passed access assessments into animal facilities without application
3.10	Unauthorized entry into the barrier system without passing training assessments
3.11	Occupying temporarily shared resources such as allocated cages, reserved laboratories, and workbenches without the consent of others
3.12	Conducting animal experiments, washing utensils/instruments, changing cages in clean storage, or bringing dirty cages into clean areas
3.13	Failing to use packaging bags to cover cage boxes when transporting animals via elevators
3.14	Unsealed feed transferred into the barrier area; upon entering the barrier area, open the self-sealing bag to take out the phone for photography
(IV) The following behaviors may affect the normal operation of animal facilities and may pose bio-safety hazards. Upon discovery, experimental personnel will be warned, required to submit a written reflection, and assigned 2 points:	
4.1	Unauthorized division or cage transfer without prior approval
4.2	Incomplete cage label information (cage No., research group leader, experimental personnel, experiment end time, animal strain/sex/age), or the use

	of a piece of paper instead of a label, with no action taken within 48 hours after being reminded
4.3	Failure to address, within one week after being warned, the over-density feeding of mice at or beyond age of division (21 days old), exceeding the upper limit by twice (10 mice or more)
4.4	Failure to euthanize experimental animals promptly after the experiment ends (based on the end date of the system cage), with no action taken within 48 hours after being reminded (reapply for cage space or euthanize animals)
4.5	Failure to close the working lights upon leaving the feeding facility
4.6	Experimental animals or items entering through the pass-through window but being brought into the barrier area without sufficient disinfection
4.7	Failure to check after the experiment ends, resulting in animals lacking water or feed, or IVC cage boxes not properly placed leading to poor ventilation

4.8	Failure to relocate animals within 48 hours after being warned by personnel for housing animals outside designated areas, such as on the ground, or rehousing animals outside the designated area after being warned once
4.9	Failure to make reservations for the small animal imaging platform instrument as required, and failure to follow procedures for instrument setup and shutdown
4.10	Severe violations of animal welfare and ethical requirements in experimental methods (failure to anesthetize before surgery, inhumane euthanasia causing extreme pain reactions, or abandonment without euthanasia)
4.11	Failure to close the water tap after fetching water
4.12	Entering the genetic engineering mouse feeding area without removing shoes, socks, clothes, or without taking a shower
(V) The following behaviors may disrupt the order of animal facilities and interfere with other experimental personnel. Upon discovery, on-site education will be provided, and 1 point will be assigned:	
5.1	Used items or experimental items brought in are passed out of the barrier environment through the pass-through window
5.2	Failure to clean experimental tables, instruments, and floors promptly after the experiment ends
5.3	Loud noise, chatter, or chatting in the animal feeding area
5.4	Opening another door while one door in the same area, such as the feeding facility or buffer room, is already open
5.5	Incomplete registration of reasons for entering and exiting the barrier facility, and entry and exit times
5.6	Uncorrected mistakes with sterilized clothing, such as not turning them back to front, pulling up zippers, or improperly storing shoe covers and clothing in designated areas in the washing waiting area
5.7	Failure to promptly return used cage utensils to the designated location within the animal facility after use, such as placing them in general laboratories or waste corridors
5.8	Exceeding the maximum feeding density per cage for weaned animals (between 1 to 2 times)

5.9	Incorrectly wearing PPE such as lab coats, gloves, masks, and dust caps when entering temporary holding rooms
5.10	Improper placement or occupation of others' cage positions without following specified cage S/N
5.11	Unauthorized entry into the breeding area, affecting the operations of previously scheduled personnel
5.12	Performing experimental operations other than breeding, mating, genetic testing sampling, or division marking in the breeding area
5.13	Performing operations such as dissection, injection, or euthanasia of mice in the feeding facility
5.14	Failure to close doors when entering and exiting instrument rooms, temporary holding rooms, dissection rooms, etc.
5.15	Unauthorized entry into the barrier system without activating access cards after passing training and assessment
5.16	Lending access cards to individuals who have passed training and assessment

	but have not activated access cards or have forgotten to bring them (both the lender and the borrower are subject to punishment)
5.17	Pushing animal transport carts, cage exchange carts, or item transport carts within the barrier area into the exit room or outside the designated area

