

Holding Protocol

The intent of this Standard Operating Procedure (SOP) is to describe conditions for animals placed on holding protocol and procedures for transferring animals between principle investigator's (PI) protocol and holding protocol. This SOP is intended for use by CM staff and investigators. This procedure is approved by the NUS Institutional Animal Care and Use Committee (IACUC). Any deviation must be approved by the IACUC prior to its implementation.

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1. MATERIALS

- a. Holding protocol cage cards
- b. CM Internal Animal Transfer Form (see *CM SOP 701 Internal Transfer of Animals*)

2. INTRODUCTION

The primary purpose of holding protocol is not for animal use, and not for project as per NACLAR. The holding protocol temporarily covers care of animals without a valid and approved IACUC protocol.

The reasons for PI to transfer animal to the holding protocol include:

- a. IACUC approved protocol has expired or terminated.
- b. IACUC protocol that has been suspended by IACUC.
- c. Animals require immediate housing, but PI does not have an approved IACUC protocol.
- d. PI is leaving NUS but still does not have the permission to transfer his/her animals to another research institution.

3. ANIMAL TRANSFER PROCESSES AND RESPONSIBILITIES

a. From PI's IACUC protocol to the holding protocol:

PI and researchers	
Submit request to transfer animals to holding protocol	- Email completed CM Internal Animal Transfer Form (https://cm.nus.edu.sg/forms.php) to Animal Transfer Coordinator (animaltransfer@nus.edu.sg) and CM operation supervisors at least 3 working days prior to protocol expiry (See <i>CM SOP 701 Internal Transfer of Animals</i>). - Provide status of the animals to be transferred in the email (i.e. prior experimental manipulations, on-going studies, special housing arrangements, and breeding cages etc.). NOTE: - PI and researchers are not allowed to handle animals on the holding protocol unless approved by IACUC. - PI will be changed to holding protocol PI (i.e. CM personnel). Per diem will continue to be charged to PI while animals are on the holding protocol. - There is <u>no</u> change in animal housing location when animals are transferred to the holding protocol. - Holding protocol cage cards will be placed by CM operation staff after transfer approval, the day after protocol expiry date if transfer request has not been submitted/approved, or at the time of protocol suspension by IACUC.
Separate breeding animals	- Separate male from female breeders <u>before</u> transferring breeding animals to the holding protocol. - Female mice with un-weaned pups can continue to stay together until weaning. - Animal Transfer Form should reflect the total cage number after separation of breeders. NOTE: - See point 4.B. Breeding animals on holding protocol.
When applicable, submit request to IACUC for provision of care and monitoring	<i>Applicable to animals that <u>have undergone</u> teaching or experimental procedures <u>prior</u> to being placed on holding protocol.</i> Request IACUC approval in advance for care and monitoring related to prior experimental manipulation that are necessary to maintain the animal's health and welfare while on the holding protocol. Examples are ongoing post procedural care/ monitoring, maintenance of chronic implant/catheter, or specific monitoring of adverse effect from experimental manipulation/ disease model.

	NOTE: - The above-mentioned care and monitoring of animals on holding protocol by researchers can only be performed after IACUC approval.
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Animal Transfer Coordinator

Review transfer request	• Review and process Internal Animal Transfer Form per <i>CM SOP 701 Internal Transfer of Animals</i>. • Seek approval from holding protocol PI. • Include holding protocol PI in all email communications with PI/researchers and CM ops supervisor related to transfer request.
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Operation Supervisor

Transfer animals to holding protocol	• Place holding protocol cage cards after approval of transfer request by Animal Transfer Coordinator (see <i>CM SOP 701 Internal Transfer of Animals</i>). • If transfer request has <u>not</u> been submitted by PI or the request has <u>not</u> been approved by Animal Transfer Coordinator at the time of protocol expiry, automatically place holding protocol cage cards <u>the day after research/breeding protocol expiry date</u>.
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Holding Protocol PI

Review transfer request	• Review and approve animal transfer request. • Inform primary CM vet for the animal location. • Seek clarification/confirmation from researcher on status of the animals to be transferred (i.e. prior experimental manipulations, on-going studies, special housing arrangements, and breeding cages etc.). • Remind researchers of holding protocol conditions.
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b. From the holding protocol to PI's IACUC protocol:

PI and researchers

Submit request to transfer animals to PI's protocol	• Once PI has a valid and approved IACUC protocol (or when protocol suspension ends), email completed CM Internal Animal Transfer Form (https://cm.nus.edu.sg/forms.php) to Animal Transfer Coordinator (animaltransfer@nus.edu.sg), holding protocol PI, and CM operation supervisor (See <i>CM SOP 701 Internal Transfer of Animals</i>). • Include IACUC approval email/letter for PI's protocol in the email.
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Animal Transfer Coordinator		
Review transfer request		- Review and process Internal Animal Transfer Form per CM SOP 701 <i>Internal Transfer of Animals</i>. - Seek approval from holding protocol PI. - Include holding protocol PI in all email communications with PI/researchers and CM ops supervisor related to transfer request.
Holding Protocol PI		
Review transfer request		- Confirm PI's protocol is valid and approved by IACUC. - Review and approve animal transfer request.
Operation Supervisor		
Transfer animals to PI's protocol		Place PI's protocol cage cards after approval of transfer request by Animal Transfer Coordinator (see <i>CM SOP 701 Internal Transfer of Animals</i>).

4. HOLDING PROTOCOL CONDITIONS

a. General conditions for animals on holding protocol

1. The holding protocol is generally limited to housing and maintenance of animals only.
2. For animals that HAVE NOT undergone teaching or experimental procedures PRIOR to being placed on holding protocol:
 - i. Experimental and teaching procedures are NOT allowed while the animals are on holding protocol.
3. For animals that HAVE undergone teaching or experimental procedures PRIOR to being placed on holding protocol:
 - i. Researchers are NOT allowed to perform teaching or experimental procedures for research purpose (e.g. feeding special diet to induce disease)
 - ii. Researchers may, in the presence of CM staff, only provide care and monitoring that are necessary to maintain the animals' health and welfare with justification and approval from IACUC and holding protocol PI. Examples are ongoing post procedural care/ monitoring, maintenance of chronic implant/catheter, or specific monitoring of adverse effect from experimental manipulation/disease model. Fee for tech time will be applicable.
 - iii. Euthanasia for when animals reach experimental endpoint may be allowed with justification and approval from IACUC and holding protocol PI. If approved, euthanasia will be performed by CM staff. Fee for tech time will be applicable.

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- iv. PI is responsible for providing justification and obtaining approval from IACUC and holding protocol PI in advance if researchers need to perform monitoring or procedures that fall under point ii and iii.
 4. PI/users will be informed and kept up to date on ongoing veterinary treatment plan/progress and when a new clinical case is flagged.
 5. Early euthanasia will be at the discretion of CM veterinarians and will be done by CM staff. Reasonable attempt to inform PI and researchers will be done prior to euthanasia.
 6. Animals' disposition, while being held under this protocol, will be at the discretions of IACUC and CM.
 7. It is PI's responsibility to ensure there is a valid IACUC approved protocol before animals can be transferred to PI's protocol.

NOTE:

- Provision of care and monitoring described in point 3. ii) should be performed by researchers due to safety reason/ OSHE requirements (e.g. hazardous agents involved in the study), habituation and safety (e.g. animal trained by specific/ research personnel or use of special device), and research personnel's familiarity with disease condition, procedure, and risk of specific study.
- CM staff may continue to perform care and monitoring described in point 3. ii) previously arranged with PI under CM's service prior to animals being placed on holding protocol. Research personnel may also be present. Fee for tech time will be applicable.

b. Breeding animals on holding protocol

In addition to the general conditions above, the following conditions apply to breeding animals placed on holding protocol.

1. Breeding is not allowed under the holding protocol and male breeders need to be separated from female breeders.
2. Females with un-weaned pups can continue to stay together. CM staff will help to wean the pups while animals are under holding protocol. Fee for tech time will be applicable.
3. For fish, spawning for experimental/breeding purposes is not allowed under holding protocol. For clinical cases of egg-bound fish, fish can be set up for spawning per veterinarians' direction by CM staff.

5. MANAGEMENT OF CLINICAL CASES ON HOLDING PROTOCOL

- a. CM Operation staff
 - i. Report animal health problems per *CM SOP 507 Animal Health Reporting*.
- b. CM veterinary technicians
 - i. Manage clinical cases per *CM SOP 612 Attending Clinical Cases*.
 - ii. Send clinical email to holding protocol PI and team members only (i.e. CM personnel).
- c. Holding protocol PI/ CM veterinarians
 - i. Review clinical cases and prescribe additional treatment if needed.

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- ii. Inform and discuss treatment plan with PI/researchers whose animals are placed on holding protocol.
 - iii. If early euthanasia is recommended for a clinical case, it will be at the discretion of CM Veterinarians and will be done by CM staff. Reasonable attempt to inform PI and researchers will be done prior to euthanasia.

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