PROPOSAL PAPER

CONTINGENCY PLAN IN THE EVENT OF A CONTAMINATION TO THE SPECIFIC PATHOGEN FREE BARRIER IN CENTRAL ANIMAL HOUSE

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3 April 2002

Background

The spf Barrier has been contaminated by *Giardia sp.*, Murine rota virus and possibly pin worm *Syphacia muris*. The first contamination to occur was *Giardia sp.* in 1994, this resulted in the complete depopulation of the barrier, all rooms were cleaned and fumigated. All animals were put into quarantine rooms where breeding ceased, and litters weaned. The animals were supplied to researchers whose research was not adversely affected by the bacteria. The Barrier was restocked with animals in December 1994 from the Animal Resource Centre (ARC) and WEHI, all of which had a known microbial status.

The spf Barrier was then contaminated by Murine Rota Virus in 1996 which resulted in the complete depopulation of all mouse strains, these rooms were cleaned and fumigated. The rooms were restocked with all mice strains obtained from ARC. The disruption to research was limited as the contaminated mice were moved to quarantine rooms, and continued to breed. The animals were supplied to researchers whose research was not adversely affected by the virus, until the production level in the barrier was sufficient to cover any orders.

In mid 2000 a false positive for pin worm *S muris* was found in a sentinel mouse, with small numbers of eggs present but no intestinal worms were found.. After extensive testing of the barrier, none of the mice sent revealed any contamination. However constant monitoring of the situation continues.

Microbial Status

The Central Animal House (CAH) is a Specific Pathogen Free (SPF) Barrier, where by rodent strains are screened on a monthly rotation. Each year every mouse strain is tested for MHV and ROTA Virus and alternate years are sent for full and short panel serology tests plus pathology, bacteriology. Rats strains are tested every 3 months, undergoing Full and short panel serology plus pathology and bacteriology alternate years.(see Appendix 1 for example of QA schedule)

Animal care staff are permitted to move between all mouse rooms, while changing shoe covers, gloves and spraying trolleys with alcohol between rat

and mouse rooms. If a breakdown occurred it would be expected that the contamination would spread in a very short space of time. The time frame between submission of a biological sample and the positive result is approximately 10 working days, making containment unlikely.

Possible Sources Of Contamination:

- autoclave unloaded and contents used after cycle has faulted
- bedding or food used after being set on an incorrect cycle ie hard goods
- autoclave breakdown and contaminated food and bedding from other facilities used
- personnel entering the barrier not using the appropriate SOP (see Appendix 2)
- personnel entering the barrier without a 72 hr clearance after entering the an infected quarantine area.

In The Event of Viral Contamination

If results are positive researchers are notified of a possible break down, approx 4 animals from each room are tested for the particular pathogen. If the results come back positive again all clients (internal and external) are then notified regarding future and previous animal orders. If however the results are negative then all the researchers are reassured.

The contaminated strains are then quarantined, in the case of MHV (which is mouse specific) all mouse strains are removed from the barrier and placed in quarantine. The rooms are cleaned, fumigated and restocked.

Murine Rota Virus when detected, can be controlled, all breeding must cease and litters weaned. Murine Rota Virus can be eradicated if all breeding ceases, and no new animals are introduced for a period of at least 6 weeks. This is the time frame that the virus can exist without new hosts, creating a "burn out" effect. Once the 6 weeks have lapsed breeding can recommence, and the offspring are then tested. The clients can then be notified of the microbial status as to whether they have shed the virus.

DECONTAMINATION

Notify the Animal Resource Center (ARC) requesting the requirements below, with the shipment date occurring approximately 2 weeks from the time decontamination begins.

All affected species must be removed, and placed in to quarantine (Animal Biotechnology Centre). All staff must put on a surgical gown, hair net, mask, gloves and shoe covers, changing shoe covers and gloves between each room. staff will not be permitted to enter the barrier after accessing these animals.

Where possible pathogens which do not interfere with research projects, breeding can continue in quarantine. Animals can be supplied with a known pathogen contamination, however only for conventional housing. Pathogens such as MHV require, that all affected species must be culled immediately.

Once all animal have been removed from the barrier, a complete clean out is necessary. All cages, food and bedding must also be removed. The barrier can then be fumigated using formaldehyde canisters, once activated they are left for a day. No staff are permitted to enter the barrier during this period, with out a full body suit and respirator. The following day the barrier must be neutralised.

Cages and bedding can be autoclaved back into the barrier, food to be either autoclaved or discarded and use fresh food. Animals from ARC with a known microbial status can be put straight into the barrier. Allow 21 days after the rodents arrival, then collect blood samples from randomly selected animals send in for serological status.

NUMBER OF ANIMALS AND COST ESTIMATION
TO RESTOCK THE BARRIER 2000

(all animals are 8 weeks of age)

Supplier	Strain	Sex	Number	Cost/Animal	Total
ARC	Swiss	F	40	$ 6.16	$ 246.40
	Swiss	M	20	$ 6.16	$ 123.20
ARC	CBA/Cah	Pairs	10pedigree	$ 47.19	$ 470.90
		F	98	$ 11.88	$ 1164.24
ARC	Balb/c	Pairs	12pedigree	$ 45.10	$ 541.20
	Balb/c	F	120	$ 11.66	$ 1399.20
	Balb/c	M	40	$ 11.66	$ 466.40
ARC	C57/Bl6	Pairs	10pedigree	$ 45.10	$ 451.00
	C57/Bl6	F	80	$ 11.66	$ 932.8
	C57/Bl6	M	109	$ 11.66	$ 1270.94
ARC	129/SV	Pairs	10 pedigree	$ 68.97	$ 689.70
	129/SV	F	10	$ 17.38	$ 173.80
	129/SV	M	5	$ 17.38	$ 89.90
	Albino Wistar	F	20	$ 14.52	$ 290.40
	Albino Wistar	M	10	$ 14.52	$ 145.20
ARC	Sprauge Dawley	F	30	$ 14.52	$ 435.60
	Sprague Dwaley	M	15	$ 14.52	$ 217.80

TOTAL $ 9108.68

F1 Colonies *

Balb/c F1	40F Balb/c 20M C57/Bl6	***All prices are GST inclusive**
CBA F1	98F CBA 49M C57/Bl6	

* Animal numbers for the F1 colonies are included in the total for a particular strain

FREIGHT CHARGE ESTIMATION 2000

Strain	No. Boxes	No. Divided boxes plus freight	Cost per box plus freight	Total
SWISS	3		$ 47.50	$ 142.50
CBA/cah	5	$ 51.00		$ 255.00
	5		$ 47.50	$ 237.50
BALB/C	6	$ 51.00		$ 306.00
	8		$ 47.50	$ 380.00
C57/BL6	5 pedigree	$ 51.00		$ 255.00
	9		$ 47.50	$ 427.50
129 SV	5 pedigree	$ 51.00		$ 255.00
	1		$ 47.00	$ 47.00
ALBINO WISTAR	8		$ 47.00	$ 380.00
SPRAGUE DAWLEY	12		$ 47.50	$ 570.00
			TOTAL	**$ 3,256 .00**

Cost per transporta box $ 11.50

Cost per divided transporta box $ 15.00

Freight per box $ 36.00

TOTAL OF ANIMALS $ 9,108.68
TOTAL OF FREIGHT $ 3,256.00
GRAND TOTAL $ 12,364.68

APPENDIX 2: BARRIER ENTRY SOP

- Remove your shoes and leave outside outer change room door.
- Outer change room remove your street clothes and socks with the exception of underwear and place in locker.
- Have a full body shower and wash your hair (body wash, shampoo and towels provided).
- Please put on blue suit, hair net, mask, shoe covers and gloves provided.
- Report to Facility Manager.