



## Cornell University Cornell Center for Animal Resources and Education

### CARE619.02 Tumor and Cell Line Testing

The intent of this standard operating procedure (SOP) is to describe biologic material screening panel selection and sample submission. This SOP is intended for use by CARE technicians, Principal Investigators (PIs), and PI staff. This SOP is approved by the Cornell Institutional Animal Care and Use Committee (IACUC) and the Cornell Center for Animal Resources and Education (CARE). Any exemption must be approved by the IACUC prior to its application.

#### TABLE OF CONTENTS

1. Introduction
2. Materials
3. Procedures
4. Safety
5. References
6. Appendix

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#### 1. Introduction

Biological material refers to cell lines, transplantable tumors, serum, tissues, body fluids, antibody preparations or hybridoma lines. When biological material is introduced into an animal, it is a potential source of contamination by adventitious pathogens if the material originated from an infected animal. The pathogen has the potential to infect an animal that is inoculated with the biological material. The IMPACT test (Infectious Microbe PCR Amplification Test) is a PCR-based test offered by UM-RADIL that tests for murine pathogen contamination of biological specimens.

In an effort to protect staff members working with animal models that have been exposed to human cells or tissues, all human samples must be pre-screened before use as well. Do not introduce biological materials into rodents in any animal facility at Cornell University without prior consultation with the CARE veterinarians.

Primary cells derived from animals can become contaminated with pathogens from other animal cell lines if the two types of cells are cultured in the same incubator. Thus, a compatible tissue source pathogen status must be verified to prevent cross-contamination.

## 2. Materials

- 2 mL cryovials
- Dry ice
- RADIL submission forms
- PPE (disposable gloves and institutional clothing).

## 3. Procedures

### A. Testing Options and Instructions for the PI

#### i) Biological material of animal origin.

(1) Contact CARE at 253-4378 or [care@cornell.edu](mailto:care@cornell.edu) to arrange testing of biological material.

(2) Biologicals that REQUIRE testing prior to *in vivo* rodent use:

(a) Cell lines, transplantable tumors, serum, tissues, body fluids, antibody preparations and hybridomas derived from rodents originating from colonies outside of Cornell University. If the biological material is derived from donor animals located in the same facility and room as the recipients, testing of such material is not necessary.

(b) Non-rodent derived cell lines, transplantable tumors, serum, tissues, body fluids, antibody preparations and hybridomas that have passaged through rodents or have been exposed to rodents outside of Cornell University colonies.

(3) Considerations:

(a) To avoid testing of non-rodent derived biologicals, provide documentation to CARE verifying:

- That these materials have not been passaged through rodents
- That these materials have not been exposed to rodent products

NOTE: Commercially obtained biologicals for which the vendor can supply negative PCR results can be excluded from additional testing.

(b) Contamination of biologicals can occur during handling and storage, and re-testing of these biologicals may be warranted.

Provide to CARE the following:

1. The nature of how the biologicals have been stored and handled since the original testing.

2. The pathogen status of the original and new rodent facility and room at Cornell (e.g., “no known pathogens-barrier” vs. “accepted pathogens-barrier”).

(c) If the entire research protocol will be conducted in a quarantine facility where the animals will be sentinel tested for pathogens, and the animals will not be moved to another Cornell facility at any point during the study, testing of rodent biologicals prior to use can be eliminated per CARE veterinarian approval. See CARE SOP 606 Quarantine of Mice for more details on sentinel testing in quarantine.

#### ii) Biological material of human origin

- (1) Even in the absence of overt contamination, biologicals of human origin must be treated as though they are contaminated with infectious agents.
  - (2) All biological materials of human origin must be reviewed and approved by Cornell's Institutional Biosafety Review Committee prior to use.
- B. IMPACT panel selection: Testing for select pathogens can be performed based on the health status of the facility:
- i) Non-barrier, accepted pathogen facility; choose the IMPACT Profile I (for description, see Appendix A).
  - ii) Barrier facility, choose the IMPACT Profile VIII – Comprehensive Murine Panel (for description, see Appendix A).
- C. Submitting IMPACT samples.
- i) Collect all samples aseptically to prevent inadvertent contamination.
    - (1) Non-liquid samples:  
Send two x2 mL cryovials of each sample with  $1 \times 10^7$  cells/vials. Cells may be in the form of a pellet or in growth media, freeze media or phosphate-buffered saline.
    - (2) Liquid samples:  
Send two x2 mL cryovials of each sample with 0.5 mL of sample/vial.
  - ii) Pack samples on  $\geq 2$  kg of dry ice.
  - iii) Ship samples to RADIL laboratory by overnight courier.  
**Note:** Shipment should not be done on a Friday or the day before a holiday.
  - iv) Contact RADIL by phone (1-800-669-0825) or by e-mail (through the website: [www.radil.missouri.edu](http://www.radil.missouri.edu)) for further instructions on collection and submission of samples.
- D. Results:
- i) Obtaining results from RADIL (CARE staff).
    - (1) Check the on-line access at RADIL for test results.
    - (2) Send an e-mail notification of the results to the PI(s)
  - ii) Obtaining Results from CARE (PI staff).
    - (1) Expect an e-mail from CARE with the IMPACT results within 7–10 business days.  
**NOTE:** RADIL will mail a final report to CARE when the results are finalized.
    - (2) Contact CARE at 253-4378 or [care@cornell.edu](mailto:care@cornell.edu) if results have not been received after the expected turnaround time of 7–10 business days.
    - (3) Postitive results:  
Contact a CARE veterinarian to discuss the necessary precautions required to prevent contamination of rodent populations (e.g., rederivation of the population OR isolation of the inoculated population).

#### 4. Safety

All biologicals are potentially pathogenic, wear disposable gloves and institutional clothing when handling these materials. Refer to CARE SOP 715: Personal Protective Equipment

## 5. References

A. UM-RADIL links:

i) <http://www.radil.missouri.edu>

ii) <http://www.radil.missouri.edu/info/DiagTesting/services/molecularbiology.asp>

B. Cornell CARE link: <http://www.research.cornell.edu/care/health.html>.

C. FDA links:

i) <http://www.fda.gov/cber/gdlns/xenophs0101.htm>

ii) <http://www.fda.gov/cber/gdlns/tissue2.pdf>

D. <http://web.ncifcrf.gov/rtp/lasp/intra/acuc/fred/guidelines/ACUC15EngraftGdln.pdf>

E. CARE SOP 715: Personal Protective Equipment:

<http://www.research.cornell.edu/care/documents/SOPs/CARE715.pdf>

F. CARE SOP 606: Mice Quarantine Program:

<http://www.research.cornell.edu/care/documents/SOPs/CARE606.pdf>

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## Appendix A

### RADIL IMPACT Profiles\*

IMPACT Profile I	IMPACT Profile VIII: Comprehensive Murine Panel
<i>Mycoplasma</i> spp.	<i>Mycoplasma</i> spp.
Sendai virus	Sendai virus
Mouse hepatitis virus	Mouse hepatitis virus
Pneumonia virus of mice	Pneumonia virus of mice
Minute virus of mice	Minute virus of mice
Mouse parvovirus (MPV-1,2,3)	Mouse parvovirus (MPV-1,2,3)
Theiler's murine encephalomyelitis virus	Murine norovirus
Murine norovirus	Reovirus-3
Reovirus-3	Mouse rotavirus
Mouse rotavirus	Ectromelia virus
Ectromelia virus	Lymphocytic choriomeningitis virus
Lymphocytic choriomeningitis virus	Polyoma virus
Polyoma virus	K virus
Lactate dehydrogenase-elevating virus	Mouse adenovirus (MAD-1,2)
Mouse adenovirus (MAD-1,2)	Mouse Cytomegalovirus
Mouse Cytomegalovirus	Lactate dehydrogenase-elevating virus
K virus	Mouse Thymic virus
Mouse Thymic virus	Hantaan virus
Hantaan virus	Kilham's rat virus
	Toolan's H1 virus
	Rat parvovirus
	Rat cytomegalovirus
	Rat coronavirus
	Rat minute virus
	Sialodacryoadenitis virus
	Seoul virus
	Theiler's murine encephalomyelitis virus
	Theiler's murine encephalomyelitis like virus

\*Specific pathogen testing can be requested as needed.