



Policy for Testing Research Biologics (cell lines, hybridomas, tumor cells, stem cells, etc) for Animal Pathogens*

Contamination of biological specimens, such as cell lines, hybridomas and tumor cells, with rodent pathogens can result in devastating outbreaks of disease in laboratory animals implanted with these materials, as well as confounding and causing deleterious effects on tissue culture-based experiments. Research Biologics include cells, tissues, stem cells, proteins, serological components of cell culture media or other material that is derived from a living system. Biologics are commonly passaged through rodents to maintain them or are derived directly from an animal model. As a result there is the potential for these biologics to contain animal pathogens. There are a number of instances where these materials have been the source of pathogen outbreaks. Consequently Research Biologics should NOT be introduced into animals without prior testing.

I. Background

Research Biologics may be contaminated with murine pathogens capable of introducing disease into rodent colonies. Although the prevalence has decreased in recent years, 25% of 297 mouse, rat, hamster, and human transplantable tumors and 69% of 465 murine leukemia's and tumors have historically been found to be contaminated with mouse or rat pathogens in the past (Lab Anim Sci. 1993. 43:296). Rodent colonies within all Animal Facilities at McMaster University are carefully screened for infectious diseases and are maintained free of viruses and other microbial agents capable of interfering with research. The health status of the rodent colonies and the integrity of research can be endangered by inadvertent introduction of untested biological material carrying rodent pathogens. **PLEASE NOTE: ATCC does NOT test cell lines for the presence of rodent pathogens.**

II. Guidelines

- All biological materials of unknown pathogen status are to be tested for murine pathogens prior to inoculation into rodents at McMaster Animal Facilities unless credible documentation is available that they are freshly prepared and have never been passed through or exposed to rodents.
- All new Animal Utilization Protocol (AUP) submissions to the Animal Research Ethics Board (AREB) requesting the introduction of Research Biologics into rodents will be required to submit evidence of testing (copy of serology report) with the AUP submission or proof that the Research Biologic has not previously been passaged in rodents. Protocols in which testing or proof has not been completed/provided may not be approved by AREB.
- All research groups currently using any form of Research Biologic in rodents will be required to submit evidence of testing (copy of serology report) as part of the annual Protocol Renewal process. Protocols in which of testing has not been completed may not be renewed by AREB.

III. Testing

- Samples can be submitted to either Charles River Research Animal Diagnostic Service or the Research Animal Diagnostics Laboratory (RADIL University of Missouri) for PCR testing. A "McMaster University" testing profile has been created at both locations (2012) which tests for the following murine pathogens: *Mycoplasma spp.*, Sendai virus, mouse hepatitis virus, Pneumonia virus of mice, minute virus of mice, mouse parvoviruses (MPV1, MPV2, MPV3), Theiler's murine encephalomyelitis virus, murine norovirus and ectromelia virus. Further information on testing can be found at:
http://www.criver.com/en-US/ProdServ/ByType/ResAnimalDiag/Pages/cell_line_research_biologics.aspx
http://www.radil.missouri.edu/Biological_Materials/IMPACT_MAP_Alternative/index.html
- Please contact Marion Corrick, Technical Manager McMaster CAF (905-525-9140 ext. 22564) or Lisa tenBrinke, Facility Coordinator TaARI CM (905-521-2100 ext. 40702) for further information

References:

1. Niklas, W., V. Kraft, and B. Meyer. 1993. Lab Anim Sci 43:296-300.