

Preclinical *in vivo* Facility

The Preclinical *in vivo* Facility leverages the NRC's expertise in cell and molecular biology, chemistry, nanotechnology, computer and imaging science to evaluate biologics and vaccines in a variety of disease and challenge models. Our expertise and state-of-the-art equipment enables our clients to validate their biologics and vaccine design approaches and obtain a clear picture of the preclinical safety and efficacy of their products.



What we offer

Services

- › Validation of therapeutic targets and biomarkers for cancer, infectious, inflammatory and central nervous system (CNS) diseases
- › Evaluation of biomarker/target expression, pharmacokinetics, pharmacodynamics and brain penetration of biologics in cell, tissue and animal models
- › Vaccine uptake and distribution studies; evaluation of formulations for induction of immune response; response validation (antibody, cell-mediated, immune memory, functional assays)
- › Efficacy studies in challenge models for both infectious disease and cancer vaccines
- › Animal model development
- › Development of novel molecular imaging tools including nanocarriers

and contrast agents; design of multi-modal targeting moieties on antibodies, peptides and other proteins

- › Development of methodologies for cell, tissue, and whole-body imaging in small animals; guidance in choice of imaging modality and combination of imaging modalities to provide enriched datasets

Facility characteristics

- › Good Animal Practice (GAP) Certification from the Canadian Council on Animal Care (CCAC)
- › Animal Care Committee (ACC) in place to receive and review protocol applications
- › Full-time veterinarian onsite offering surgical, gross and histopathology services
- › CALAS- and OAVT-registered veterinary technologists

- › Experienced in working with rodents (gerbil, guinea pig, hamster, mouse, and rat), rabbits, and ferrets; specialists in working with immunocompromised mice
- › Individually ventilated caging (IVC) systems
- › Animal containment levels (CLs) 2 and 3
- › Fully equipped surgical suites and expertise in performing a wide range of specialized rodent surgical procedures including minipump implants, catheterizations, and intracerebral injections
- › Full range of veterinary technical services including drug administration, biological tissue sampling, clinical monitoring, polyclonal antibody production, and postmortem examinations
- › Behavioural testing capability including Morris water maze, radial arm maze, T and Y mazes

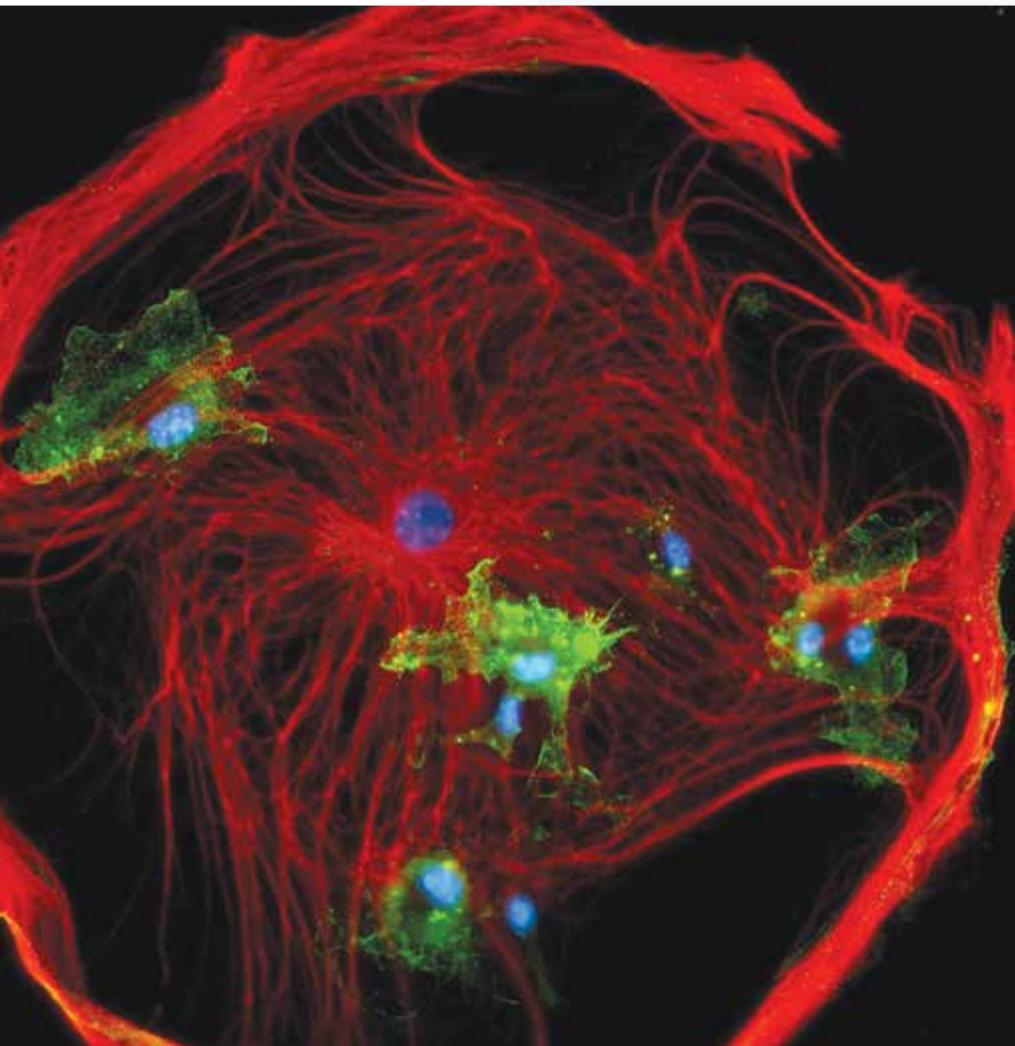
- › Time domain *in vivo* optical imaging
- › Micro-computed tomography (microCT)
- › *in vivo* multiphoton confocal imaging for label-free applications (VivaScope)
- › *in vivo* imaging systems (IVIS) for bioluminescence and fluorescence
- › Optical coherence tomography (OCT)
- › Imaging mass spectrometry (IMS)

Why work with us?

Our preclinical *in vivo* specialists possess over 25 years' experience in the field, and have provided their multi-disciplinary expertise to a long list of satisfied clients. This cutting-edge facility provides biotechnology and biopharma companies access to the latest equipment and expertise for the evaluation and functional characterization of biologics and vaccines, generating critical data for our partners as they prepare their Investigational New Drug (IND) applications.

“The NRC’s support and expertise has been critical in ensuring the success of our cytomegalovirus (CMV) vaccine program and the resulting investment in our company. We certainly would not have been able to work with such agility had we not had access to the NRC’s team and facilities within the vaccine and biologics divisions.”

– Adam Buckley, Vice President, Operations & Project Management, VBI Vaccines



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