

Biologics and Biomanufacturing program

NRC-CMRC

Human Health Therapeutics

Working together to develop new therapies

NRC's Biologics and Biomanufacturing program serves as an integrated R&D extension to your team. We can de-risk product development, add significant value to biologic candidates, and accelerate their progress through every step of the value chain, up to and including early clinical trials.



Biotherapeutics to address unmet medical needs

NRC works with Canadian and international partners to develop novel biologics and biobetters to treat a range of diseases including cancer, inflammatory diseases, and autoimmune diseases. With its partners, NRC is accelerating biologics development and manufacturing up to early clinical trials, reducing risk and adding value for each product.



Partnership opportunity

With the biologics market growing rapidly, NRC is currently seeking partners to collaborate on the following priorities:

- Developing a pipeline of monoclonal antibodies, bi- and multi-specific antibodies, single domain antibodies, antibody-drug conjugates and non-antibody protein therapeutics
- Developing advanced algorithms for identification of targets and biomarkers, as well as companion diagnostic biomarker data sets to

enable patient stratification and personalized medicine

- Bioprocessing development, scale up and transfer compatible with current Good Manufacturing Practices (cGMP) covering microbial, mammalian, and viral vector expression systems

Expertise

The Biologics and Biomanufacturing program offers unparalleled expertise and leading edge facilities for the preclinical development of biotherapeutics.



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Candidate design, selection, and optimization

The field of therapeutic antibodies, the most commonly developed and approved type of biologic, is evolving quickly. However, industry is facing challenges in the area of rapid antibody prioritization and optimization. NRC partners are able to meet these challenges head on by accessing NRC's state of the art antibody generation and prioritization expertise. Our streamlined antibody generation methods, which yield both traditional and single domain antibodies, together with our bioinformatics and protein design approaches and high throughput assays for ranking antibody functionality and manufacturability, allow our clients to select or improve therapeutic antibody candidates in a short amount of time. We also offer non-antibody protein therapeutic expertise.

Bioprocess development

Bioprocessing technologies including protein engineering, mammalian cell bioprocessing and new expression technologies have facilitated the development and manufacturing of new biologics. In response to the demand for increased productivity of industrial bioprocesses, NRC has focused on biomanufacturing to

generate more robust, rapid and less costly production processes. Over the past two decades, our unique Microbial Fermentation Pilot Plant and Mammalian Cell Pilot Plant have successfully delivered improved bioprocesses to a long list of satisfied partners.

★ **"NRC has the diverse set of capabilities necessary to test and develop therapeutic proteins. They also have a very knowledgeable and professional staff. This combination makes them an ideal partner to complement our computational protein engineering capabilities."**

– David Tucker, COO, Zymeworks Inc.

Preclinical development

The evaluation of biologic candidates through translational science is essential for demonstrating product efficacy. Through our biophysical characterization and functional characterization expertise, our advanced analytical platform, and preclinical *in vivo* facility, NRC's proprietary assays and test models are providing critical data about biologics candidates to partners at the preclinical stage as they prepare their Investigational New Drug applications.

Partner benefits

Through the Biologics and Biomanufacturing program, partners can access NRC expertise in three types of projects:

- Biologics co-development
- Industrial solutions to overcome technological roadblocks
- Service and licensing opportunities for enabling technologies

For projects in each of these categories, NRC has established best practices to guide the management and commercialization of intellectual property associated with co-developed products and enabling technologies. We observe the rigorous standards set forth by Health Canada's Biologics and Genetic Therapies Directorate (BGTD), ensuring that all our co-developed products meet their regulatory approval requirements to be sold in Canada and other jurisdictions. Canadian cGMP biologics manufacturers who benefit from our bioprocessing expertise will be well positioned to supply both domestic and global markets.

Your Partner of Choice

A globally recognized leader in the field of biologics development, we offer our partners access to a highly qualified research team that can deliver first rate results while maintaining confidentiality.

Contact

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Interested?

If you're interested in developing biologics, optimizing your biomanufacturing processes, accessing our advanced scientific infrastructure, or connecting with our experts, contact us today!

