



PARTNERING OUR RESEARCH AND YOUR BUSINESS

HIGHLIGHTS OF OUR RESEARCH PROGRAMS

Cancer

- ▶ Use of DNA microarrays, subtracted DNA libraries to identify early causal and secondary effect genes in cancer cells
- ▶ Characterization of cathepsin X, discovered by mining genomic databases and other proteins involved in apoptosis
- ▶ Structure-function of protein-tyrosine phosphatases (PTPases) and their relation to normal growth and oncogenesis as well as the potent human cell growth stimulating factor, granulin
- ▶ NMR studies of EGF 'mimic' proteins used as anti-cancer diagnostics and therapeutics
- ▶ HTS for proteins interacting with tumor suppressor proteins (p53, p73, PTEN, SHP-1)
- ▶ HTS of Epidermal Growth Factor inhibitors.
- ▶ Biacore® analysis of receptor-ligand interactions (esp. TGF-β receptors) and affinities among gene translation proteins
- ▶ High throughput structural genomics involving fast, automated methods for solving protein structures with emphasis on cancer-related proteins (growth factors, hormones, receptors)
- ▶ Homology 3-D modeling of the TGF-β receptor's extracellular domain for function studies
- ▶ Mammalian cell-based assay for HTS to test potential of drugs to disrupt interacting proteins (cancer-related receptors, ephrin-mediated angiogenesis reactions)

Infectious Diseases

- ▶ Anti-fungal identification through regulation of hyphal formation and pathogenicity in *C. albicans* and MAP kinase cascade proteins involved in virulence
- ▶ Use of mammalian receptor/yeast G protein complexes (in yeast) for screening potential drug compounds
- ▶ Multi-dimensional NMR studies of protein shape changes during binding (Ste20/Pak family; ephrin B ligand-receptor) to develop anti-fungals

Our Technology Toolbox

- ▶ MicroArray Lab (DNA synthesis, gene expression profiling)
- ▶ High Throughput Screening Facility
- ▶ Rapid elucidation of protein structures using X-ray crystallography and NMR
- ▶ High throughput protein production
- ▶ Computational molecular modeling
- ▶ Bioinformatics
- ▶ Characterization of molecular targets using Biacore®, enzymology, protein-protein interactions, etc.

Our Business Approach

By partnering with BRI, companies have access to advanced technologies and the support of a diversity of experts. BRI offers collaborative agreements, where risk and cost are shared with the company, as well as service contracts and licensing agreements. Projects are conducted under strict confidentiality.



"We support the growth and development of the Canadian pharmaceutical-biotechnology industry, and we're open for new partnerships!"

Dr. Andrew Storer
Director, Health Sector
Biotechnology Research
Institute-NRC

The Biotechnology Research Institute employs 200 health sector researchers armed with the very latest technologies for elucidating molecular structure and behavior. Our research program centres on early drug development, from the identification and characterization of molecular disease targets to the discovery and design of lead drug compounds.

We focus our efforts in the areas of **cancer** and **infectious diseases**. Our approach is to establish **synergistic partnerships** with biopharmaceutical companies in order to share the effort, risks and costs of drug development research.

Health Sector

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