



# Manitoba

## A BIOTECH

# STAR ON THE RISE

“The most exciting phrase to hear in science, the one that heralds new discoveries, is not Eureka (I found it!) but rather, ‘Hmmm...that’s funny...’”

**N**o doubt these words, by Isaac Asimov, are being heard in research laboratories and institutions throughout the province, as new discoveries in biotechnology are putting Winnipeg, Manitoba on the international bio-map. In fact, just this past year, **the province’s biotech sector has made remarkable achievements, pushing the limits of traditional science.**

### Winnipeg – Canada’s Hub for Infectious Diseases Research, Training and Co-ordination

With infectious diseases research continuing to dominate the world’s laboratories, Manitoba is making a name for itself in this challenging field. Ottawa’s recent decision to locate the **Public Health Agency of Canada in Winnipeg** speaks to the province’s world-class infrastructure and expertise.

Winnipeg is home to the **Canadian Science Centre for Human and Animal Health, the only facility worldwide to contain Level IV biocontainment laboratories for both humans and animals.** Having this capacity makes the centre invaluable for infectious diseases research since two-thirds of human infectious diseases are zoonotic or of zoonotic origin.

## A Prescription for Growth and Expansion

It looks like pharmaceutical and biopharmaceutical research and production in Manitoba have written themselves a prescription for growth. Major expansions of two world-class, Winnipeg-based companies add to the province's growing reputation in the field. It's their confidence in Manitoba's fast-growing biotech sector that has led **Cangene Corporation** and **Biovail Corporation** to expand their operations in the province.

**Cangene**, one of Canada's most successful biopharmaceutical companies, develops and manufactures high-quality, hyperimmune, antibody products for infectious diseases like smallpox, Ebola, anthrax, West Nile and hepatitis B. The company is also working to develop bio-defence products in the war against terrorism.

**Biovail** is an international, full-service pharmaceutical manufacturer producing highly marketable brands such as Wellbutrin XL and Cardizem LA. The company, based in Steinbach, Manitoba, has a worldwide marketing mandate for its products.



## Manitoba – An Emerging Leader in Linking Health and Nutrition

The decision to open the **Richardson Centre for Functional Foods and Nutraceuticals in Winnipeg** is evidence of Manitoba's emerging leadership in the expanding functional foods and nutraceutical sector. The industry has enormous growth potential and the highly successful collaboration between agriculture and medical scientists at the **National Centre for Agri-food Research in Medicine** is advancing research into nutraceuticals and functional foods.

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### Manitoba's Biotech Sector the One to Watch

- Ernst & Young's *Resurgence: Global Biotechnology Report 2004* ranked **Manitoba** as the **fastest growing biotechnology sector in Canada**.
- With only 4% of Canada's population, Manitoba is home to 8% of this country's biotech activity.
- The sector generates revenues of more than \$400 million annually.
- The sector employs 4,200 people in Manitoba – a tenfold increase over the past 15 years.
- The industry is supported by 30 research and development centres and 23 service companies in the province.

### Manitoba's Position in Genomics/Proteomics Research Continues to Climb

**Genome Canada** recently announced funding for the North American Conditional Mouse Mutagenesis Project. The project, led by Dr. Geoff Hicks, director of the Manitoba Centre for Mammalian Genomics, has global importance. It is part of the **International Knockout Mouse Project**, which developed the world's most efficient way for knocking out a single gene to study the cause of diseases, from cancer to Parkinson's.



## From Laboratory to Life – Meeting the Markets' Needs

A major factor in building Manitoba's biotech industry is developing mechanisms which move new, innovative technologies into the marketplace. The **Centre for the Commercialization of Biomedical Technologies** helps new entrepreneurs and firms develop the research, technology and management skills needed to support sustained growth. This centre is a national model for public/private sector partnerships in commercialization.

## Province Shows Strong Commitment to Growth

The province of Manitoba's innovation strategy addresses the challenges and opportunities involved in creating a leading Canadian biotechnology centre. In the past five years, the Manitoba government has supported biotech research with more than \$63 million in funding through the **Manitoba Research and Innovation Fund**. The provincial

government is also a partner in the **Western Life Sciences Ventures Fund** and **CentreStone Ventures** – investment pools specifically for life sciences initiatives.

The province provides assistance programs for business plan development, feasibility studies, capital expansions and technology commercialization to support the success of biotechnology businesses locating in Manitoba. The government offers competitive marketplace policies, responsive tax-incentive programs, significant research-and-development investment, as well as funding for workforce training in the life sciences sector.

The province's commitment to support the pharmaceutical and biopharmaceutical research and development industry is demonstrated by the creation of a state-of-the-art **biopharmaceutical manufacturing program at Red River College** in Winnipeg. It is the only program of its kind in Western Canada. Red River College also offers a highly touted **clinical research training program**.

## Leading Research Facilities in Manitoba

In addition to being the site for the Public Health Agency of Canada, Manitoba is also home to a variety of other innovative, well-respected research facilities:

- Agriculture and Agri-Food Canada's Cereal Research Centre
- Canadian Science Centre for Human and Animal Health
- Manitoba Institute of Cell Biology
- Manitoba Institute of Child Health
- National Research Council - Institute for Biodiagnostics
- Richardson Centre for Functional Foods and Nutraceuticals
- St. Boniface General Hospital Research Centre
- University of Manitoba



## Manitoba Advantages Attract Global Attention

World-class life sciences companies are choosing Manitoba to meet their growing needs and capture emerging opportunities. Why? Because Canada's keystone province offers strategic business advantages like:

- the lowest hydroelectric costs in North America
- a stable and dedicated workforce
- sector-specific training programs
- a supportive government environment



## Manitoba Talent Drives Infrastructure

Naturally, world-class infrastructure cannot exist without the right people behind it – talented, dedicated scientists who, on a daily basis, push beyond *what is*, to *what can be*. Manitoba is fortunate to have a growing portfolio of experts in the field, including world-renowned scientists who are blazing trails for emerging talent in biotech research and commercialization.

One such example is **Dr. Sabine Mai, a scientist with the Manitoba Institute of Cell Biology**, who's been recognized for her breakthrough research in understanding how cancer cells form, laying the groundwork for new tests, and possible new treatments, for cancer. This work has the potential to relieve human suffering and form the foundation for further important research.



## Strategic Partnerships Advance Industry

Manitoba's reputation for high activity levels in infectious diseases research continues to draw dynamic partners from around the globe. In November 2005, Winnipeg's newly established **International Centre for Infectious Diseases** signed a three-year agreement with China's Centre for Disease Control and Prevention to help China deal with a potential avian flu pandemic. As well, researchers from Winnipeg's **National Microbiology Laboratory (NML)**, Health Canada, have partnered with Vietnamese scientists to determine how widely the

bird flu virus has affected humans. The first to research this topic, the team hopes to shed new light on what is currently known about pandemics.

## Biosciences Corridor Links Manitoba and Minnesota Industries

Manitoba and the U.S. state of Minnesota have created a north/south biosciences corridor between their jurisdictions to help the two compete in the global life sciences sector. Individually, Manitoba and Minnesota are world-class incubators of scientific innovation. Together, they can make the most of the growing life sciences opportunities worldwide.

### Key Industry Players

Apotex Fermentation Inc.  
Biovail Corp.  
Brett Young Seeds Ltd.  
Cangene Corp.  
Monsanto Canada Inc.  
Vita Health  
Viventia Biotech Inc.



## World-class Infrastructure – A Solid Advantage

Manitoba is home to world-class infrastructure that continues to attract a variety of innovative research companies and agencies which support and build on each other's strengths.

The recent opening of the **Richardson Centre for Functional Foods and Nutraceuticals**, located in Smart-park on the University of Manitoba's main campus in Winnipeg, will expand Manitoba's growing reputation in this fast-rising field.

The new centre will research and develop innovative functional food ingredients and natural health products with strong commercial potential.

Winnipeg is also headquarters for the **National Research Council Institute for Biodiagnostics (NRC-IBD)**, the most advanced facility in Canada for studying and developing diagnostic tools such as NMR and MRI technologies, used to prevent, diagnose and treat diseases.

The convergence of medical devices and biotechnology is a fast-emerging field and NRC-IBD has established five spin-off companies since its inception. The institute's research network is now Canada-wide, with two new satellite centres in Calgary and Halifax.

## For more information please contact us:

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