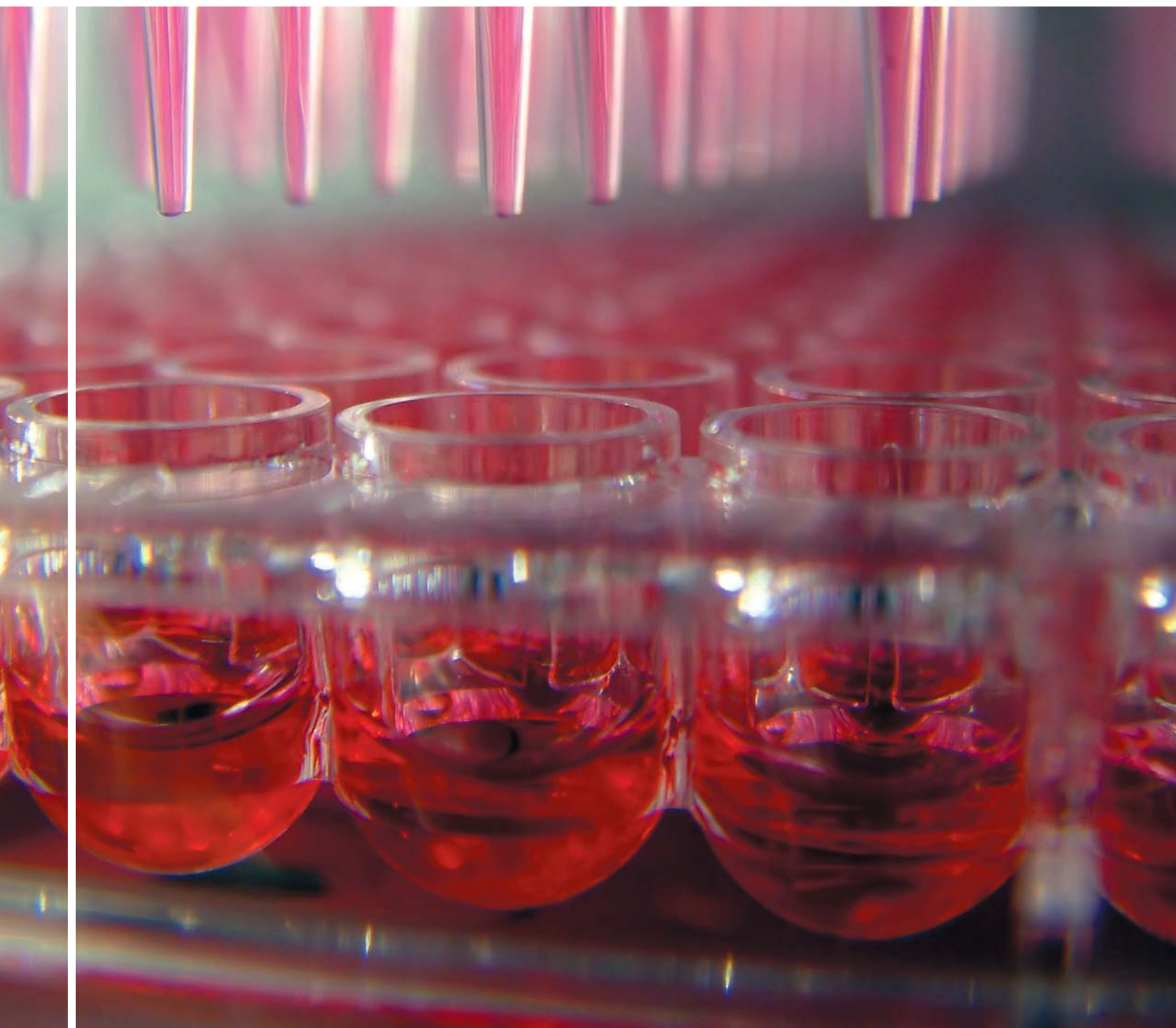


2009

Invest in Canada

BIOPHARMACEUTICALS



Canada 

RECENT INVESTMENTS IN CANADA

- » **Charles River Laboratories International**, of Massachusetts, will open a preclinical services facility in Quebec in 2009, which is ultimately expected to employ 1,000 people.
- » French firm **Sanofi Pasteur** invested \$100 million in a new R&D facility in Ontario in 2008.
- » **GlaxoSmithKline** invested more than \$178 million in Canadian R&D in 2007 alone. GSK has operations throughout Canada, with facilities in Nova Scotia, Quebec, Ontario, Alberta and British Columbia.
- » **Sandoz**, a Division of the Novartis Group, opened a manufacturing plant in Quebec in 2008, part of its \$80 million investment announced in 2007.
- » German firm **Boehringer Ingelheim** completed a \$36 million investment in new, leading-edge laboratories in Quebec in 2008.

MAJOR GLOBAL INVESTORS IN CANADA

Amgen
AstraZeneca
Bayer
Bristol-Myers Squibb
Eli Lilly
GlaxoSmithKline
Hoffman-LaRoche
Johnson & Johnson
Jubilant Organosys
Merck Frosst
Novartis
Novopharm
Pfizer
Sandoz
sanofi-aventis

LEADING CANADIAN COMPANIES

Angiotech Pharmaceuticals
Apotex
BioMS
Bioniche Life Sciences
Biovail
Cangene
Cardiome Pharma Corp.
ImmunoVaccine Technologies
Medicure Inc.
Theratechnologies
Transition Therapeutics Inc.
Trillium Therapeutics

Canada plays a key role in the global biopharmaceutical industry, with particular strengths in research and development (R&D), clinical trials and manufacturing. All of the top 10 global pharmaceutical companies, in terms of revenues, have operations in Canada, several with R&D and manufacturing mandates.

In 2007, global biopharmaceutical sales amounted to US\$663.5 billion. That same year, the Canadian biopharmaceuticals sector recorded sales of \$17.6 billion¹ and exports of nearly \$6.3 billion. Approximately 80 percent of these exports were channelled to the U.S. market. In 2007, Canada was home to 397 pharmaceutical and 404 biotechnology establishments, employing nearly 29,000 people across the country.

Canada offers a dynamic and innovative environment for global biopharmaceutical companies, with its first-rate academic institutions, world-class innovative science, research and clinical networks, highly skilled workforce, supportive innovation climate, and numerous partnership opportunities.

Key Capabilities

Research & development: From discovery to full Phase 3 pivotal trials, the Canadian R&D sector is known for quickly recruiting patients, adhering strictly to good clinical practice (GCP) protocols and generating high-quality, robust data. In 2007, over \$1.3 billion was spent on biopharmaceutical-related R&D in Canada, which boasts a research community of approximately 30,000 investigators across 17 medical schools and more than 100 teaching hospitals. Canada leads the G7 in growth of health research patents and ranks fourth internationally in terms of its overall share of global clinical trials.

Manufacturing: Many major pharmaceutical companies have manufacturing facilities in Canada. With easy access to U.S. markets, Canada represents a high-quality, cost-competitive location for North American manufacturing. Canada also possesses world-class expertise in good manufacturing practice (GMP) small molecule and biologics manufacturing from pilot to full scale-up applications, and is home to one of the world's largest generic drug manufacturers, Apotex.

Pharmaceutical services: Many world-class contract service companies are located in Canada, providing high-quality support in R&D, clinical trials, manufacturing and countless other services required to support the life sciences industry.



Canada plays a key role in the biopharmaceutical industry, with sales of \$17.6 billion and exports of nearly \$6.3 billion in 2007.

KEY CANADIAN CLUSTERS

British Columbia

British Columbia's biopharmaceuticals sector consists of over 90 companies with a total of 2,200 employees and annual revenues of approximately \$779 million. The province's biopharmaceutical sector is anchored by two of the world's first profitable biopharmaceutical companies: QLT and Angiotech. The B.C. Cancer Agency, the B.C. Centre for Disease Control and the University of British Columbia, located in **Vancouver**, house some of the province's world-leading research facilities.

Manitoba

With over 40 companies, 30 R&D establishments, 23 service firms, and 4,200 employees, **Winnipeg's** life sciences cluster offers significant capabilities in biopharmaceutical R&D and production, including three of Canada's top 10 life sciences companies in 2008: Diamedia, Kane Biotech and Samune. As Canada's third-largest exporter of pharmaceuticals, the region's manufacturing activity is centred on firms such as Cangene Corporation, Apotex Fermentation, Biovail and Vita Health.

Home to the Public Health Agency of Canada, Manitoba is a global centre of excellence in infectious disease identification and management, with Canada's only Level 4 containment laboratory. The biopharmaceutical cluster's areas of focus here include infectious diseases; cardiovascular and respiratory diseases; oncology; neuroscience; nutraceuticals and functional foods; and diagnostics.

Alberta

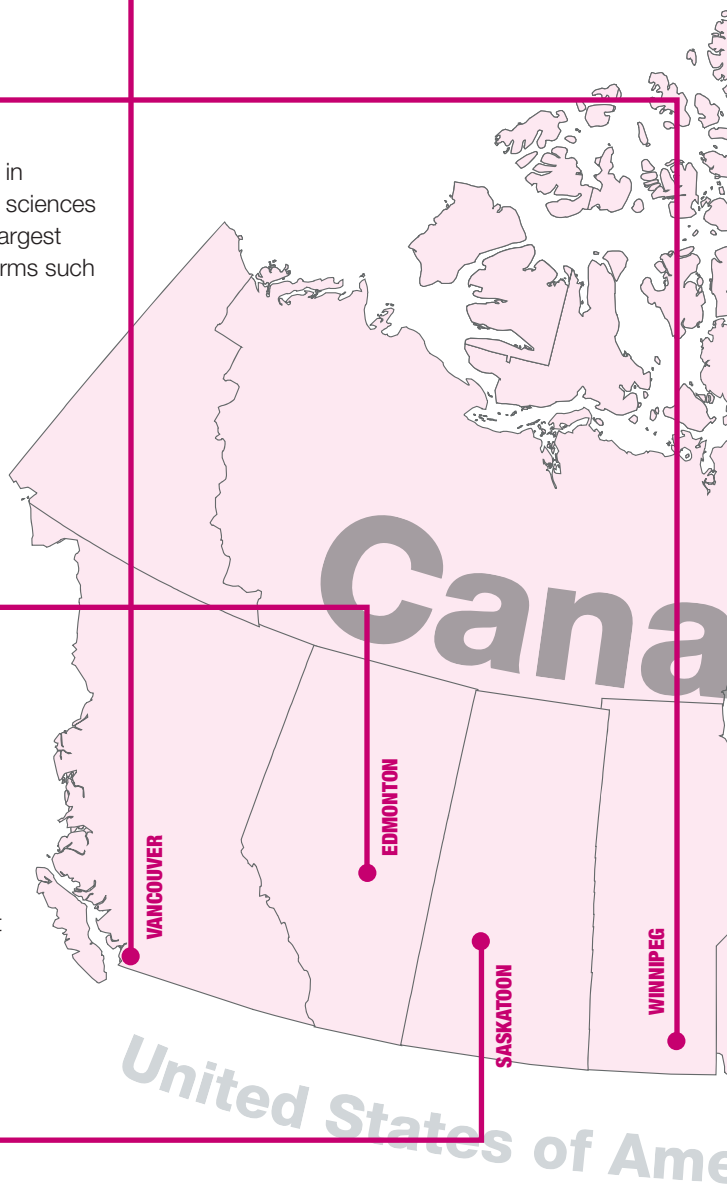
Edmonton hosts world-renowned researchers and publicly supported state-of-the-art facilities that provide a wealth of biomedical research capacity. Edmonton's University of Alberta and the universities of Calgary and Lethbridge offer an unparalleled environment for primary research. Successes include the Edmonton Protocol treatment for Type 1 diabetes, advanced cancer imaging and treatment, neurological imaging, and cutting-edge research into treatments for cardiac and infectious diseases.

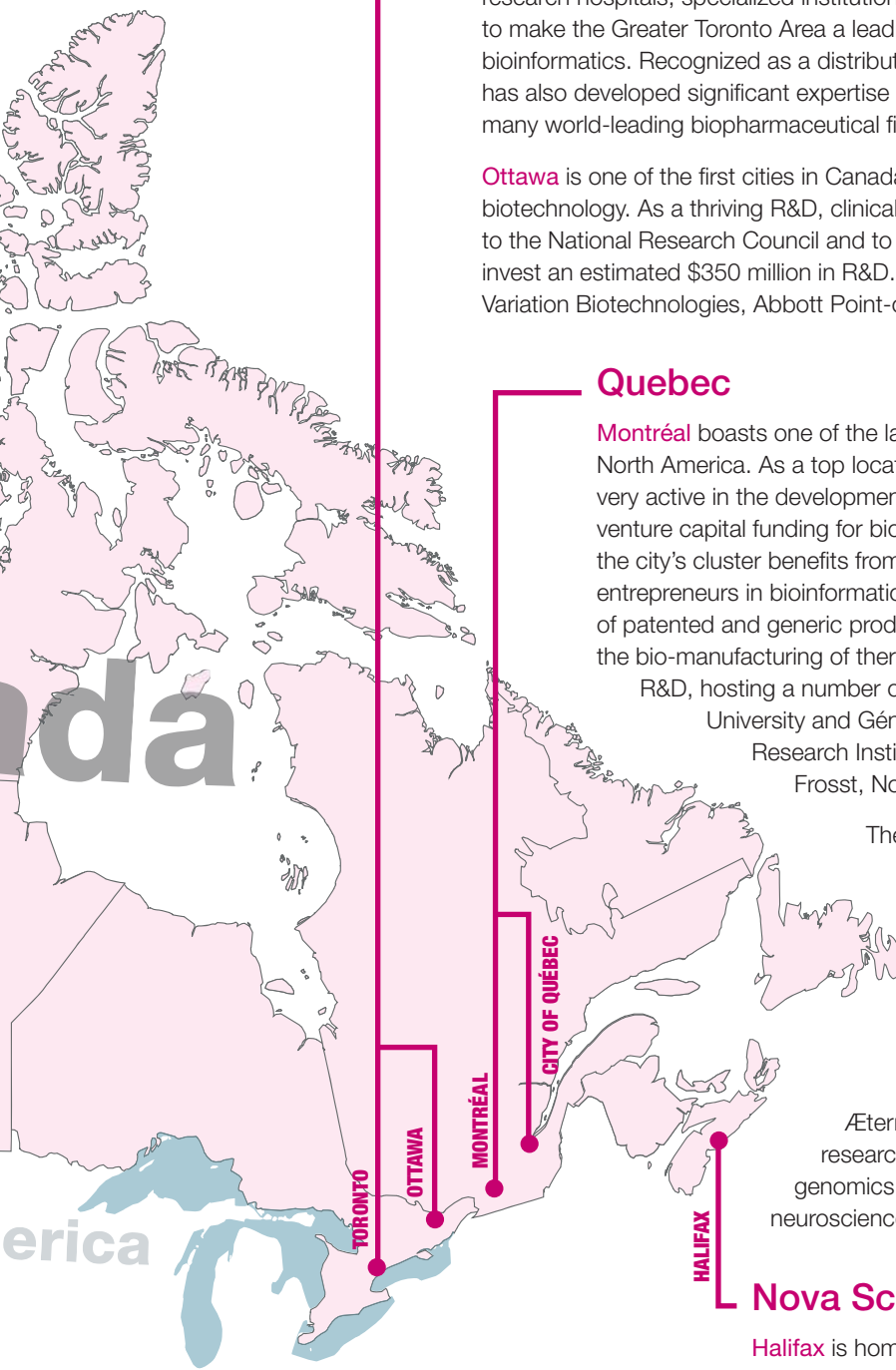
Private-sector companies add depth to the research environment in Alberta. Examples include BiMS Medical Corporation, developing therapeutics to treat multiple sclerosis; Oncolytics Biotech Inc., focusing on developing products to treat cancer; contract R&D firms NAEJA Pharmaceuticals and Chemroutes Corporation; and QSV Biologics, a GMP contract manufacturing (fermentation) firm. Gilead Sciences also operates a manufacturing facility in Edmonton.

Saskatchewan

A number of outstanding research facilities are located in Saskatchewan, many involved in clinical trials and cutting-edge work developing vaccines and finding cures for coronary disease, cancer, diabetes and viral infections. The province is home to many industry-leading firms, including Bioniche Life Sciences Inc. and POS Pilot Plant.

Saskatoon's National Research Council - Plant Biotechnology Institute focuses on developing plant-based products to improve the health and wellness of Canadians. The non-profit Vaccine and Infectious Disease Organization, credited with five world firsts in animal vaccine research, has expanded into human health applications in an effort to ease the suffering caused by influenza and hepatitis C and address the lack of effective vaccines for newborns and people in developing countries.





Ontario

Toronto is home to one of the largest biopharmaceutical clusters and one of the biggest medical communities in North America. At the heart of the cluster is the Discovery District, which encompasses the MaRS Centre, the Donnelly Centre for Cellular and Biomolecular Research, research hospitals, specialized institutions and innovative life sciences firms. All have helped to make the Greater Toronto Area a leading centre for research in genomics, proteomics and bioinformatics. Recognized as a distribution hub with a network of medical suppliers, the region has also developed significant expertise in drug manufacturing. The Greater Toronto Area attracts many world-leading biopharmaceutical firms such as Bayer, Eli Lilly, GSK and Sanofi Pasteur.

Ottawa is one of the first cities in Canada to capitalize on the vast business potential of biotechnology. As a thriving R&D, clinical research, and manufacturing centre, the city is home to the National Research Council and to 20 life sciences-related research institutes that annually invest an estimated \$350 million in R&D. Companies operating in Ottawa include MDS Nordion, Variation Biotechnologies, Abbott Point-of-Care and Best Medical Canada.

Quebec

Montréal boasts one of the largest and most important biopharmaceutical clusters in North America. As a top location for basic research and contract research, Montréal is also very active in the development and commercialization of innovative products, as well as in venture capital funding for biotechnology firms. Employing approximately 15,000 people, the city's cluster benefits from a wealth of expertise in clinical research, a core of dynamic entrepreneurs in bioinformatics and medical technologies, and is home to manufacturers of patented and generic products. Boasting top level expertise in vaccine research and in the bio-manufacturing of therapeutic proteins, Montréal also has a leading reputation in R&D, hosting a number of renowned international research centres, such as the McGill University and Génome Québec Innovation Centre, and the Biotechnology Research Institute. World-class firms such as AstraZeneca, GSK, Merck Frosst, Novartis, Pfizer, sanofi-aventis and Wyeth operate in Montréal.

The **City of Québec's** health sector has a large concentration of jobs in vaccine production, contract research, diagnostics and the manufacture of medical equipment and medical technologies. Since 2006, pharmaceutical companies have invested close to \$1 billion in their production units located in the province of Quebec, due in large part to the abundant pool of available academic, technical and specialized labour. The City of Québec region is home to many industry-leading firms, including Æterna Zentaris, Anapharm, and GSK, as well as to seven research centres that focus on cutting-edge research in cardiology, genomics, infectious diseases, immunology, obesity, oncology, neuroscience, functional foods and nutraceuticals.

Nova Scotia

Halifax is home to a number of leading companies involved in the development of therapeutic products and the manufacturing and distribution of natural health products. Such firms include Merck Frosst Canada, Kytogenics Pharmaceuticals, Ocean Nutrition and Ascenta Health, a firm that holds the largest share of Canada's market for omega-3 supplements. Halifax also boasts The Brain Repair Centre, a multidisciplinary collaboration linking more than 100 world-class researchers and physicians specializing in groundbreaking treatments and technologies in the field of brain repair.

METHODOLOGY

This benchmarking study assesses the competitiveness of a number of Canadian clusters against competing international business locations. Based on an investor's perspective, the research and analysis uses a representative investment project prototype (a biotechnology R&D facility focused on drug discovery and clinical trials, as well as a fully integrated pharmaceutical operation involved with R&D and production of commercial products—see profile on page 5) to assess criteria that corporate decision makers typically examine when evaluating location alternatives for foreign investment.

This international location benchmarking exercise was conducted by IBM-Plant Location International (IBM-PLI), a renowned global location consultancy. IBM-PLI performed objective research to assess the comparative cost and quality of doing business in various locations, simulating the approach used by investors when screening candidates for corporate investment projects. The benchmarking study examined 250 to 300 financial and qualitative location indicators in the assessment of each industry subsector.

To assess the quality of a location's operating business environment, data were collected from a variety of sources for the different subfactors in each of the categories featured in the operating environment table (page 5). Data for the qualitative assessment were translated into comparable scorings (zero to 10) for each category and subfactor using a weighted scoreboard approach. Weights were assigned to each location category and subfactor to demonstrate their relative importance in the location selection process. These weights are specific to each industry subsector and are based on IBM-PLI's experience in helping investors make strategic decisions when choosing locations.

A high-level financial analysis was also conducted to take into account major location-sensitive investment and operating costs and revenues for each representative project profile. Operating cost and cash flow projections have been calculated and discounted over a 10-year period, incorporating anticipated inflation rates, to determine their net present value.



benchmarking the comparative
cost and quality of doing
business in global locations

INVESTMENT LOCATION



INVESTMENT LOCATION BENCHMARKING

REPRESENTATIVE PROJECT PROFILE

Biotech R&D

GENERAL DESCRIPTION OF OPERATIONS

Biotech R&D facility focused on drug discovery and clinical trials

KEY PROJECT DRIVERS

- » Availability of highly skilled personnel: laboratory specialists, researchers, etc.
- » Access to research and technology (universities, incubators, R&D funding, etc.)

CAPITAL INVESTMENT

C\$ 3 million

OPERATING COST ANALYSIS PROJECT REQUIREMENTS FOR FINANCIAL MODELLING

LABOUR

(HEADCOUNT = 96)

Biology Scientists: 20

Laboratory Specialists and Technicians: 50

Clinical Researchers: 15

Operations Managers: 1

General Office Clerks: 10

PROPERTY

Land: 2 acres

Building: 7,500 sq. ft.

UTILITIES

Power: (Monthly Consumption) 60,000 kWh

Water: (Daily Consumption) 12,000 gal

REPRESENTATIVE PROJECT PROFILE

Fully Integrated Pharmaceutical Operation

GENERAL DESCRIPTION OF OPERATIONS

Research, development and production of commercial human pharmaceutical products

KEY PROJECT DRIVERS

- » Availability of skilled labour: scientists, technicians, production operatives
- » Attractiveness for international recruits
- » Access to research and technology (universities, incubators, R&D funding, etc.)

OPERATING COST ANALYSIS PROJECT REQUIREMENTS FOR FINANCIAL MODELLING

LABOUR

(HEADCOUNT = 400)

Production Operatives: 250

Senior Scientists: 50

Laboratory Technicians: 45

Engineers: 30

Management and Administration: 25

MACHINERY AND EQUIPMENT

C\$ 200,000,000

SALES

C\$ 120,000,000

PROPERTY

Land: 50 acres

Building: 270,000 sq. ft.

UTILITIES

Power: (Monthly Consumption) 400,000 kWh

Gas: (Monthly Consumption) 8,000 Mcf

Water: (Daily Consumption) 200,000 gal

OPERATING ENVIRONMENT

GENERAL BUSINESS ENVIRONMENT » 10%*

- » Availability of financial support & incentives;
- » Quality of support from local government & development agencies;
- » Compliance with protection of privacy regulations, information security, IP rights;
- » Political stability;
- » Economic and financial stability

LOCAL POTENTIAL TO RECRUIT SKILLED STAFF » 30%*

- » Presence of experienced employees (pharmaceutical and biotech related);
- » Presence of student population;
- » Overall size of labour pool;
- » Overall tightness in the labour market (unemployment)

PRESENCE OF INDUSTRY/CLUSTER » 30%*

- » Importance of R&D;
- » Proximity to finance/regulators;
- » Presence of industry base;
- » Market proximity (access to customers/suppliers)

FLEXIBILITY OF LABOUR & REGULATIONS » 5%*

- » Hiring & firing flexibility;
- » Work permits;
- » Working time regulations;
- » Industrial relations/attitude of unions

INFRASTRUCTURE & COMMUNICATIONS » 10%*

- » Air access;
- » Quality & reliability of IT & telecommunications;
- » Public transport;
- » Highway network & congestion;
- » Reliability of power supply

LIVING ENVIRONMENT » 15%*

- » Attractiveness for young international recruits;
- » Attractiveness for expatriates

OPERATING ENVIRONMENT

GENERAL BUSINESS ENVIRONMENT » 15%*

- » Quality of support from local government & development agencies;
- » Availability of financial support & incentives;
- » Business permitting procedures;
- » Compliance with protection of privacy regulations, information security, IP rights;
- » Political stability;
- » Economic and financial stability

LOCAL POTENTIAL TO RECRUIT SKILLED STAFF » 30%*

- » Presence of experienced pharmaceutical employees (R&D and manufacturing);
- » Overall size of labour pool;
- » Overall tightness in the labour market (unemployment);
- » Presence of student population

PRESENCE OF INDUSTRY/CLUSTER » 10%*

- » Presence of industry base;
- » Market proximity;
- » Importance of R&D

FLEXIBILITY OF LABOUR & REGULATIONS » 15%*

- » Working time regulations;
- » Hiring & firing flexibility;
- » Industrial relations/attitude of unions

INFRASTRUCTURE & COMMUNICATIONS » 20%*

- » Highway network & congestion;
- » Air access;
- » Reliability of power supply;
- » Quality & reliability of IT & telecommunications;
- » Public transport

REAL ESTATE » 5%*

- » Availability of large industrial sites

LIVING ENVIRONMENT » 5%*

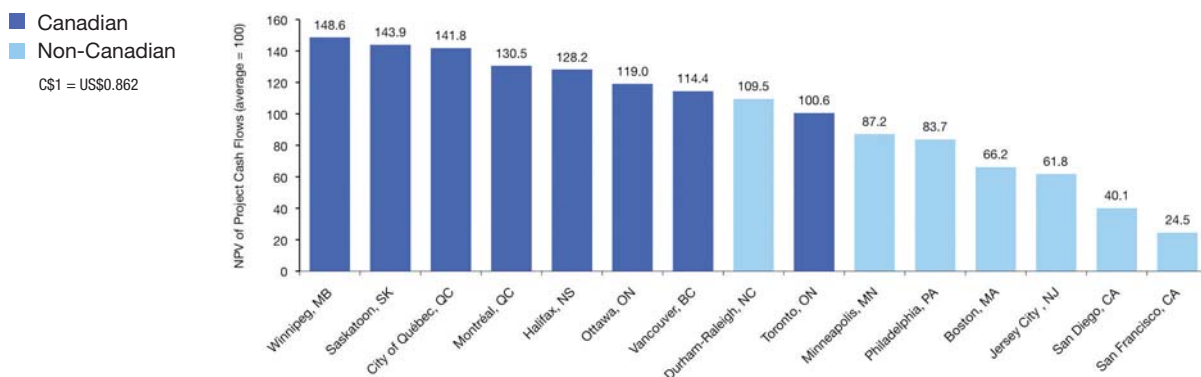
- » Attractiveness for young international recruits;
- » Attractiveness for expatriates;
- » Cost of living



CANADA'S VALUE PROPOSITION

A significant player on the international biopharmaceuticals scene, Canada's global presence continues to grow steadily thanks to leading-edge research programs, and strong financing and venture-capital programs. Canada offers an attractive combination of cost-competitive locations and high-quality operating environments to fully integrated pharmaceutical firms looking to prosper.

COST ASSESSMENT*



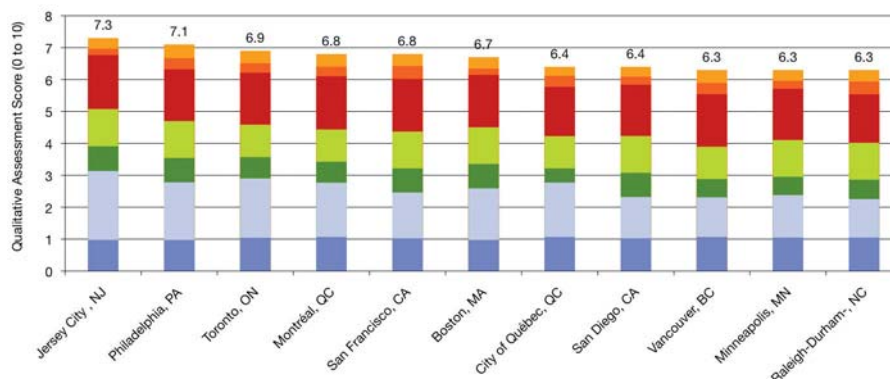
A better return on your investment

Canada offers the most cost-competitive locations in comparison to other North American and G7 options evaluated in IBM-PLI's benchmarking study. Winnipeg, Saskatoon and the City of Québec are among the top Canadian locations that offer significant cost advantages over competing cities. All Canadian cities benchmarked,

including large biopharmaceutical clusters such as Montréal and Toronto, rank in the top 10 based on a financial analysis of cash flows and operating costs. With low corporate tax rates and generous R&D incentives, Canadian locations help investors optimize their cost structure.

QUALITATIVE ASSESSMENT OF OPERATING ENVIRONMENT*

- Living environment
- Real estate
- Infrastructure & communications
- Flexibility of labour & regulations
- Presence of industry/cluster
- Local potential to recruit skilled staff
- General business environment



Strong clusters with a wealth of expertise

Apart from offering cost-competitive investment locations, Canada also offers biopharmaceutical firms some of the world's best operating environments. Toronto and Montréal, both home to many of the top biopharmaceutical firms, rank among leading North American options. Other Canadian locations, notably the City of Québec and Vancouver, also offer strong qualitative environments. The ability to hire employees skilled in the pharmaceutical industry is an important factor in this assessment; Toronto, Montréal and the

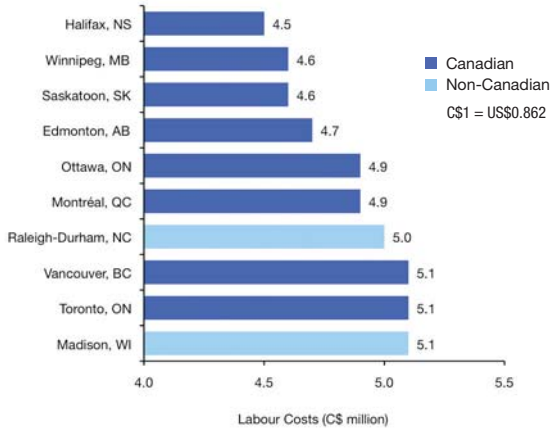
City of Québec all score highly in this respect. Canadian locations as a whole also gain excellent scores for R&D and for the quality of infrastructure, including easy highway access, low congestion, and reliability of the local power supply, all key investment drivers in this industry sector. The new EU-Canada aviation agreement will support Canada's growing transatlantic trade, facilitating the efficient flow of people and valuable goods.

*Unless otherwise noted, graphs represent IBM-PLI assessment scores.

CANADA'S VALUE PROPOSITION



Estimated annual labour costs of a biotechnology R&D operation (highest-ranking cities) **



Favourable labour costs

A calculation of the estimated annual labour costs for a typical R&D facility focused on drug discovery and clinical trials shows the potential for significant cost savings of Canadian locations. All Canadian cities examined in IBM-PLI's study rank in the top 10 and have lower costs than prominent U.S. competitors such as Philadelphia, Boston and Jersey City.

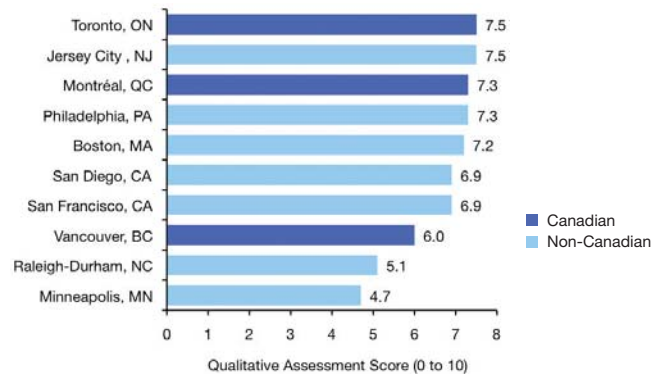
An important component of Canada's labour cost advantage relative to the United States stems from the lower costs of providing employee benefits. Canada's national healthcare system implies that most medical insurance costs are publicly funded rather than paid by the employer, which can result in significant savings for employers.

Thriving biopharmaceutical clusters

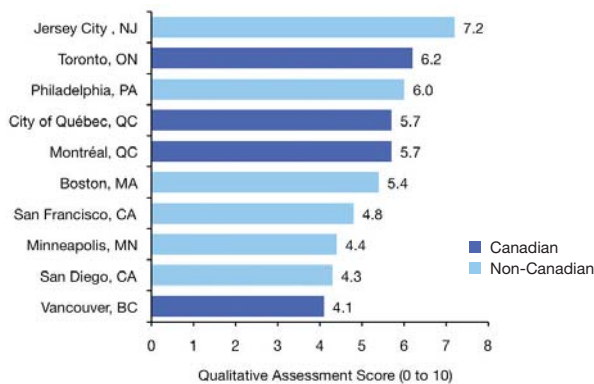
Clusters of pharmaceutical companies allow close linkages with buyers, suppliers and other institutions to offer advantages that lead not only to greater efficiency, but also to accelerated product improvement and innovation.

Canada has the second highest number of biotechnology companies in the world and is home to some of the largest established clusters in the pharmaceutical industry. Official counts of establishments classified as pharmaceutical manufacturing² show Toronto and Montréal comparing well to Jersey City, New Jersey, one of the most prominent pharmaceutical industry bases in North America.

Presence of pharmaceutical industry base (highest-ranking cities)*



Local potential to recruit skilled staff (highest-ranking cities)*



A deep talent pool

The presence of experienced clinicians and researchers contributes to the success of R&D activities. Proximity to universities and a student population are important in providing a source of educated labour, as well as individuals to serve as test populations for health research and studies. Ranked first in the world for higher education,³ Canada is home to an exceptionally well-educated, motivated and diverse workforce.

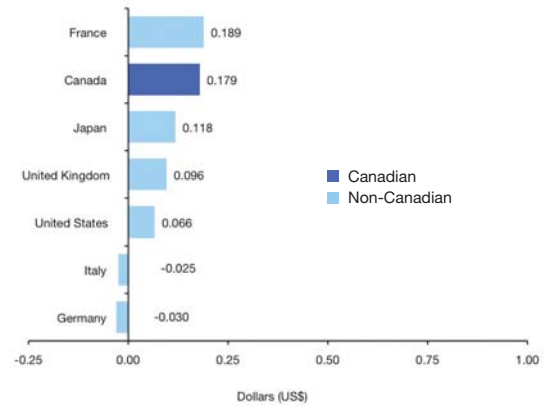
Toronto, Montréal, the City of Québec and Vancouver all host large populations of experienced employees working in pharmaceutical and biomedical-related companies, as well as large student populations, ensuring a steady flow of new talent.

Generous R&D incentives

Canada understands that R&D and innovation are critical to the growth of biopharmaceutical firms; therefore billions of dollars are invested in R&D each year to ensure that investors have access to the best talent and infrastructure in the world. Canada provides a system of federal and provincial tax credits and accelerated tax deductions for a wide variety of R&D expenditures to allow global firms to significantly reduce costs.

Canada's Scientific Research and Experimental Development (SR&ED) program is an open-ended tax incentive initiative that covers 20 percent of various R&D-related costs, such as salaries, overhead, capital equipment and materials. The SR&ED incentive permits firms to reduce R&D costs through direct investment or subcontracting in Canada.

The rate of tax subsidies for US\$1 of R&D, large firms and SMEs (G7 countries)**



Student population (highest-ranking cities)***



The people advantage

Canada believes in investing in people and welcoming talent from around the world. This helps explain why Canada has the world's highest percentage of college and university graduates and a well-educated, talented and diverse workforce, motivated to help businesses succeed.

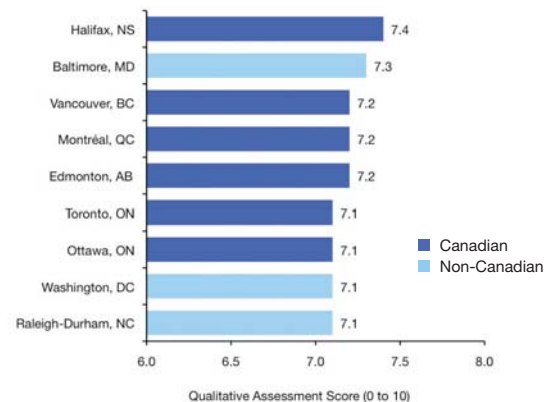
IBM-PLI's benchmarking study rates five Canadian cities at the top of the rankings for the number of life science-related graduates. Toronto, Montréal, Vancouver, Ottawa and Edmonton all host sizeable universities with faculties in biological, biomedical and general life sciences, resulting in a large and constant flow of new talent for the industry.

Best place to do business in the G7

Canada has a solid and dynamic economy, low corporate tax rates and generous R&D incentives. This, coupled with the support from local governments and development agencies, privacy regulations, information security and intellectual property rights, has helped to make Canada an advantageous business environment for companies to invest and flourish.

As the number one country among the G7 for GDP growth over the last decade and with the world's soundest banking system,⁴ Canada provides a safe and strong business environment that offers tremendous growth potential and peace of mind for your investment.

General business environment (highest-ranking cities)*



*Unless otherwise noted, graphs represent IBM-PLI assessment scores. **OECD Science, Technology and Industry: Scoreboard 2007. ***Sources include National Center for Education Statistics and Integrated Postsecondary Education Data. 4 World Economic Forum Global Competitiveness Report 2008-2009, October 2008.

Invest in Canada

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We offer the following valuable services to our clients:

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- referrals to contacts in firms and industry associations, as well as experts
- information and advice on setting up a business in Canada
- help in identifying a suitable place in which to invest
- assistance in developing a business case for your next investment decision

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