



[BIOPHARMACEUTICALS]
Canada's competitive advantages

CANADA'S PHARMACEUTICAL SECTOR

Canada offers a dynamic and innovative environment for pharmaceutical companies, with first-rate academic institutions, wide-reaching and innovative research networks, a highly skilled workforce and numerous partnership opportunities. Canada is home to the world's ten-largest pharmaceutical companies, several of which are managing R & D and manufacturing operations in Canada.¹ The Canadian pharmaceutical sector is comprised of companies that develop and manufacture innovative and generic pharmaceuticals, as well as over-the-counter medicines, and includes a number of market segments serviced by various brand-name pharmaceutical companies, generic-drugs firms, small and medium-sized enterprises (SMEs) and contract service providers (CSPs).

In 2013, the sector's manufacturing segment employed 27,000 people in 490 establishments.² Canadian companies spent close to \$900 million in 2012 specifically on R & D activities in the pharmaceutical sector.³ Several pharmaceutical companies increasingly conduct external R & D activities via partnerships, triggering investments in SMEs, venture funds and CSPs, therefore adding \$221 million in R & D expenditures in Canada.

A WEALTH OF OPPORTUNITIES

From 2001 to 2013, total pharmaceutical sales in Canada almost doubled to \$21.6 billion, with 89 percent sold to retail and 11 percent to hospitals. Governments account for 42 percent of drug expenditures while private payers cover the remainder. Brand-name products comprise 76 percent of Canadian sales and 37 percent of prescriptions, and generics account for the rest.⁴

Pharmaceutical sales in Canada have a 2.5 percent share of the global market, making Canada the eighth-largest in the world.⁵ The Canadian pharmaceutical sector also has a growing presence in international markets; between 2001 and 2012, the value of its exports and imports increased by 136 and 93 percent, respectively. More than half of Canadian production, worth approximately \$5.2 billion, is exported, primarily to the United States.⁴

CANADA'S KEY STRENGTHS IN THE PHARMACEUTICAL INDUSTRY

- A pharmaceutical sector that spans the industry's spectrum, operating at all levels of the value chain, from basic R & D and innovation to product development and contract services
- A health-research network that is ever-more commercially oriented, providing value and advantages in infrastructure, to firms securing partnerships
- A total of 200 contract research organizations and contract manufacturing organizations (CROs and CMOs) serving both Canadian and international clients
- Perfectly suited to the current climate of patent expirations, and the demand for new licensing prospects, partnerships and alternative forms of investment

¹ PharmaBoardroom.com. *Top 50 pharma companies in 2012*, by global sales. December 2013.

² Statistics Canada, special tabulation, unpublished data, *Annual Survey of Manufactures and Logging*, 2004 to 2011.

³ The IMS Institute for Healthcare Informatics, *PMPRB Annual Report 2012*.

⁴ Industry Canada. *Life Sciences Industries: Pharmaceutical Industry Profile*.

⁵ Industry Canada. Canada's growth is considered between the years 2009-2013. *Life Sciences Industries: Pharmaceutical Industry Profile*.

PHARMACEUTICAL CLUSTERS

Canada is an ideal location for pharmaceutical investment with world-class clusters in Montréal, Toronto, Vancouver and other centres throughout the country.



WESTERN PROVINCES

- » British Columbia, Alberta, Manitoba, Saskatchewan
- » **Leading companies include:**
Gilead Sciences, Aurinia Pharmaceuticals, NAEJA, Oncolytics Biotech, Parvus Therapeutics, Resverlogix, Amgen, Cardiome Pharma, enGene, Aquinox Pharmaceuticals, MRM Proteomics, Celator Pharmaceuticals, iCo Therapeutics, OncoGenex Pharmaceuticals, QLT, Xenon Pharmaceuticals, Qu Biologics, Sirona Biochem, Syreon, Zymeworks, AdeTherapeutics, Phenomenome Discoveries, Apotex Fermentation, Emergent BioSolutions, Marsala Biotech, Kane Biotech, Medicure, Valeant Canada

EASTERN PROVINCES

- » Ontario, Quebec, Atlantic Provinces
- » **Leading companies include:**
Amgen, Abbott, AbbVie, Bristol-Myers Squibb, Apotex, AstraZeneca, Bayer, Baxter, Bioniche, Eisai, Eli Lilly, Generex Biotechnology, GlaxoSmithKline, Dalton Pharma Services, Johnson & Johnson, Charles River Laboratories, Medicago, Merck, Novartis, Helix BioPharma, Alphora Research, Astellas Pharma, Cipher Pharmaceuticals, CMX Research, Genzyme, KGK Synergize, Nucro Technics, Roche, Sanofi, Microbix Biosystems, Takeda, Teva, Theratechnologies, BioVectra, Immunovaccine, Æterna Zentaris, Galderma, Jubilant Life Sciences, MethylGene, Nuvo Research, Pfizer, ProMetic Life Sciences, Pharmascience, Kytogenics Pharmaceuticals

RECENT INVESTMENTS

- Biotech giant Gilead Sciences expanded its Edmonton operations (2012) and will build a 45,000-square-foot R & D facility in northeast Edmonton.
- B. Braun Medical Inc. established a Canadian subsidiary (2013) headquartered in Mississauga, Ontario.
- In February 2014, Domain Therapeutics, a French bio-company specializing in drugs targeting G-protein-coupled receptors (GPCRs) announced the opening of its North American subsidiary, Doman Therapeutics NA Inc., at the NEOMED Institute in Montréal, Quebec.

CANADA'S ADVANTAGES

RESEARCH & DEVELOPMENT ADVANTAGES

Canada combines one of the best R & D tax incentives in the G-7 with increased certainty of eligibility and reduced administrative costs for businesses.

Canada also has a well-developed contract services industry, with both CROs and CMOs serving domestic and international pharmaceutical and biotechnology clients.

A LOW-COST RESEARCH AND MANUFACTURING BASE

Among G-7 countries, Canada has the second-least expensive R & D services (comprised of biomedical research, product testing and clinical-trials administration), more than 15 percent less expensive than services in the United States⁶ in this area. Canada also ranks first among G-7 countries for cost-effectiveness in the establishment and operation of manufacturing facilities for both medical devices and pharmaceuticals.

SKILLED LABOUR POOL

Canada has a world-class education system, with 22 Canadian universities ranked in the top 500 worldwide and an extensive network of academic health institutions, research centres, 17 medical schools, and thousands of health researchers employed at dozens of health care organizations.

Among OECD members, Canada has the highest percentage of individuals achieving at least college or university education. The country's high concentration of health and medical science graduates provides a significant advantage for its life sciences industry.

LOGISTICS AND MARKET-ACCESS BENEFITS

Pharmaceutical manufacturers can benefit from Canada's highly developed transportation and logistics infrastructure, which, according to the World Bank, is one of the world's best. Thanks to the North American Free Trade Agreement (NAFTA), they can also take advantage of duty-free access to the U.S. and Mexican markets. Further, once the Comprehensive and Economic Trade Agreement (CETA) with the European Union (EU) comes into force, foreign direct investors in Canada will have guaranteed preferential access to the EU market and its approximately 980 million consumers and combined GDP of US\$35 trillion —nearly one-half of the world's total GDP.

“Bringing a global pharmaceutical development site to Roche Canada is a testament to our skilled and talented workforce, and offers tremendous opportunities to solidify [Canada's] reputation as a global research hub.”

Ronnie Miller, President and CEO,
Hoffman-La Roche Ltd.

⁶ KPMG. *Competitive Alternatives*, 2014.

SUPPORT PROGRAMS AND INNOVATION

A DYNAMIC RESEARCH AND INNOVATION NETWORK

Canada's research excellence is recognized in cardiovascular and metabolic disorders, neuroscience, oncology and infectious diseases and vaccines. Canada is a leader in the development of key technology platforms, including stem cells and regenerative medicine, genomics and antibody technologies.

- British Columbia's **Centre for Drug Research and Development** addresses the challenge of finding how promising health research conducted at the university level can be translated into commercially viable solutions;
- **Genome Alberta**, a public not-for-profit corporation, initiates, funds and manages genomics research and partnerships;
- Saskatoon's **Vaccine and Infectious Disease Organization (VIDO)** is a world leader in developing vaccines and technologies against infectious diseases;
- The **MaRS Centre** taps into \$1 billion in annual research and development funding and is Toronto's largest research hub;
- The **Ontario Institute for Cancer Research** is an innovative translational-research institute dedicated to research on the prevention, early detection, diagnosis and treatment of cancer;
- The **Quebec Consortium of Drug Discovery (CQDM)** is dedicated to stimulating research in the field of therapeutic medicine and to supporting the development of innovative and effective compounds;
- The **Montréal Heart Institute** is at the centre of major research programs for patients suffering from, or at risk of developing, cardiovascular diseases;
- The **Brain Repair Centre** and **Dalhousie University Medical School** work together to discover and develop the means to prevent, repair and even reverse damage to cells and synaptic connections in the brain and spinal cord.

STRONG FINANCIAL SUPPORT FOR HEALTH RESEARCH

In 2012-2013, the Canadian Institutes of Health Research (CIHR), Canada's federal funding agency for health research, comprised 13 Institutes, supported thousands of health researchers across Canada, and provided close to \$650 million in funding.

COMPANY-LEVEL INNOVATION AND FUNDING SUPPORT

The **National Research Council's Industrial Research and Assistance Program (NRC-IRAP)** provides direct technology assistance to small and medium-sized enterprises, including life science companies, at all stages of the innovation process and provides linkages to the best expertise in Canada.

Export Development Canada (EDC) and **Business Development Bank of Canada (BDC)** provide flexible financing programs and solutions tailored to support foreign direct investment in Canada.

INVEST IN CANADA TO ACHIEVE GLOBAL EXCELLENCE

A WELCOMING BUSINESS ENVIRONMENT

Canada is ranked as the best country for business in the G-20.

Source: Forbes and Bloomberg

A HIGHLY EDUCATED WORKFORCE

Canada's workforce is the most highly educated among members of the OECD, with half of its working-age population having a tertiary-level education.

Source: Organisation for Economic Co-operation and Development (OECD)

LOW TAX RATES

Canada's overall marginal effective tax rate on business investment is by far the lowest in the G-7—about 17 percentage points lower than that of the United States.

Source: Department of Finance Canada

COMPETITIVE R & D ENVIRONMENT

Canada offers the lowest business costs in the G-7 for R & D-intensive sectors, with a 15.8 percent cost advantage over the United States.

Source: KPMG

FINANCIAL STABILITY

For six consecutive years, the World Economic Forum has declared Canada's banking system to be the soundest in the world.

Source: World Economic Forum (WEF)

UNPARALLELED MARKET ACCESS

Canada's NAFTA advantage gives investors access to 470 million consumers. Many Canadian production hubs are actually closer to U.S. markets than American production sites—of Canada's 20 largest cities, 17 are within an hour-and-a-half drive of the U.S.

Source: The World Bank

A GREAT PLACE TO INVEST, WORK, AND LIVE

Canada is one of the globally most multicultural countries with world-class universities, a universal health care system and clean and friendly cities in addition to having the second highest standard of living in the G-20, as measured by GDP per capita.

Source: The World Bank

Unless otherwise noted, all values in this publication are in Canadian dollars. Content is based on the latest available information at time of publication.



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Foreign Affairs, Trade and Development Canada
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