



# INVEST IN **CANADA**

CANADA'S COMPETITIVE ADVANTAGES

**BIOPHARMACEUTICALS**



# CANADA'S BIOPHARMACEUTICAL SECTOR

In 2015, the biopharmaceutical sector's manufacturing segment employed nearly 28,500 people in 553 establishments.<sup>2</sup> Canadian companies spent close to \$900 million in 2015 specifically on pharmaceutical R&D activities.<sup>3</sup> Beyond this amount, several pharmaceutical companies increasingly conduct external R&D via partnerships, triggering additional investments in SMEs, venture funds, and CSPs.<sup>4</sup>

## A WEALTH OF OPPORTUNITIES

From 2001 to 2015, total pharmaceutical sales in Canada doubled to \$24.6 billion, with 87.5 percent sold to retail and 12.5 percent to hospitals. Governments account for 42 percent of drug expenditures while private payers cover the remainder. Brand-name products comprise 77 percent of Canadian sales and 34 percent of prescriptions, and generics account for the rest.<sup>5</sup>

Pharmaceutical sales in Canada have a 2 percent share of the global market, making Canada the tenth-largest in the world.<sup>5</sup> The Canadian pharmaceutical sector also has a growing presence in international markets; between 2001 and 2015, the value of its exports and imports increased by 345 and 140 percent, respectively. More than half of Canadian production, worth approximately \$9.8 billion, is exported, primarily to the United States.<sup>5</sup>

## CANADA'S KEY STRENGTHS IN THE BIOPHARMACEUTICAL INDUSTRY

- » A pharmaceutical and biotechnology 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 increasingly commercially-oriented, providing value and advantages in infrastructure to firms securing partnerships
- » Many contract research organizations and contract manufacturing organizations (CROs and CMOs) serving both Canadian and international clients
- » Canada's diversified networks of expertise in the life sciences offer an ideal platform for joint investments in research, particularly for pharmaceutical companies seeking to leverage external partnerships to optimize R&D results
- » A modern, responsive, and efficient regulatory environment for pharmaceuticals and biotechnology products

## 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. The world's ten largest pharmaceutical companies are present in Canada, most with R&D and manufacturing operations in their Canadian facilities.<sup>1</sup>

The Canadian pharmaceutical sector is composed 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).

1 Evaluatepharma, World Preview 2016, Outlook to 2022. 2016.

2 Innovation, Science and Economic Development, Pharmaceutical and Medicine Manufacturing – 3254: Businesses – Canadian Industry Statistics. 2016.

3 PMPRB Annual Report 2015.

4 KPMG, Summary of 2013 R&D Spending and Investments by Rx&D Members, 2014.

5 Innovation, Science and Economic Development, Pharmaceutical industry profile.

# BIOPHARMACEUTICAL CLUSTERS



CANADA IS AN IDEAL LOCATION for pharmaceutical investment, with world-class clusters in Montréal, Toronto, Vancouver and other centres throughout the country.

» Leading companies include:

**BRITISH COLUMBIA:** Amgen, Aquinox Pharmaceuticals, Aurinia Pharmaceuticals, Cardiome Pharma, enGene, iCo Therapeutics, Jazz Pharmaceuticals, MRM Proteomics, Novilion Therapeutics, OncoGenex Pharmaceuticals, Qu Biologics, Sirona Biochem, STEMCELL Technologies, Xenon Pharmaceuticals, Zymeworks

**ALBERTA:** Gilead Sciences, NAEJA-RGM Pharmaceuticals, Oncolytics Biotech, Parvus Therapeutics, Resverlogix

**SASKATCHEWAN:** Prairie Plant Systems, VIDO-InterVac

**MANITOBA:** Apotex Fermentation, Emergent BioSolutions, Kane Biotech, Marsala Biotech, Medisure

**ONTARIO:** Abbott, Alphora Research, Amgen, Apotex, Astellas Pharma, AstraZeneca, Baxter, Bayer, Cipher Pharmaceuticals, Dalton Pharma Services, Eisai, Eli Lilly, Galderma, Generex Biotechnology, Genzyme, GlaxoSmithKline, Helix BioPharma, Ipsen Biopharmaceuticals, Johnson & Johnson, Microbix Biosystems, Novo Nordisk, Nucro-Technics, Nuvo Pharmaceuticals, PlantForm, Roche, Sanofi, Takeda, Teva

**QUEBEC:** AbbVie, Bristol-Myers Squibb, Caprion Biosciences, Charles River Laboratories, GlaxoSmithKline, Jubilant DraxImage, Laurent Pharmaceutical, Lundbeck, Merck, Medicago, Novartis, Pfizer, Pharmascience, ProMetic Life Sciences, Sanofi, Servier, Theratechnologies

**NEW BRUNSWICK:** Mycodev Group, Soricimed Biopharma

**NOVA SCOTIA:** Appili Therapeutics, Immunovaccine

**PRINCE EDWARD ISLAND:** BioVectra, Sekisui Diagnostics

**NEWFOUNDLAND AND LABRADOR:** Sequence Bio

## RECENT INVESTMENTS



In 2017, German-based Bayer and American-based Versant Ventures invested US\$225 million to create BlueRock Therapeutics, a stem cell therapy company in Toronto, Ontario.



In 2016, American-based Johnson & Johnson Innovation opened the JLABS @ Toronto life sciences incubator at the MaRS Discovery District in Toronto, Ontario.



In 2015, American-based Gilead Sciences invested \$100 million in expanding its facility in Edmonton, Alberta, in order to increase its R&D and manufacturing capabilities and to create an additional 170 jobs.

In 2015, Japanese-owned Medicago invested \$245 million to construct a new vaccine R&D and production facility in Québec City, Québec, creating 200 jobs.



In 2015, South Korean-based Green Cross Biotherapeutics started construction of a \$315 million plasma fractionation facility in Montréal, Québec, which will create over 200 jobs.





# CANADA'S ADVANTAGES



## LOW-COST RESEARCH AND MANUFACTURING BASE

Canada combines one of the best R&D tax incentives in the G7 with increased certainty of eligibility and reduced administrative costs for businesses. Among the G7 countries, Canada has the least expensive R&D services for clinical trials administration and for biomedical research. Further, Canada ranks first in the G7 in terms of business costs for the establishment and operation of manufacturing facilities for both medical devices and pharmaceuticals.<sup>6</sup>

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

## LEADING SITE FOR CLINICAL TRIALS

With its ethnically-varied population, Canada is an attractive site for holding clinical trials and is ranked third in the world.<sup>7</sup> Further, clinical trials represent a significant portion of research conducted by Canadian companies in the sector; this activity is supported by Canada's excellent health infrastructure and strong health networks.

## SKILLED LABOUR POOL

Canada has a world-class education system, with 20 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.<sup>8</sup>

## 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. With provisional application of the

Comprehensive and Economic Trade Agreement (CETA) with the European Union (EU) in force, foreign direct investors in Canada have guaranteed preferential access to the world markets with over 1.2 billion consumers and combined GDP of nearly US\$42 trillion — more than 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,  
Hoffmann-La Roche Limited

<sup>6</sup> KPMG, Competitive Alternatives, 2016.

<sup>7</sup> US National Institutes of Health, Trends, Charts, and Maps.

<sup>8</sup> Times Higher Education, World University Rankings, 2016.

# 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.

- » Genome Canada, a public not-for-profit corporation, initiates, funds and manages genomics research and partnerships
- » British Columbia's Centre for Drug Research and Development addresses the challenge of translating promising health research conducted at the university level into commercially viable solutions

- » The Canadian Glycomics Network (GlycoNet), in Edmonton, Alberta, supports research on using glycoconjugates in vaccines and therapeutics
- » Saskatoon's Vaccine and Infectious Disease Organization (VIDO) is a world leader in developing vaccines and technologies against infectious diseases
- » The MaRS Centre, Toronto's largest research hub, is home to a JLABS life sciences incubator, and is part of the Toronto Discovery District that attracts \$1 billion in annual research and development funding
- » 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 Centre for Commercialization of Cancer Immunotherapy (C3i) in Montréal develops cutting-edge immunotherapies for cancer treatment
- » 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

- » The University Health Network (UHN) in Toronto, Ontario, one of several such university networks in Canada, conducts research in diverse fields, such as cancer, cardiology, and immunology

## STRONG FINANCIAL SUPPORT FOR HEALTH RESEARCH

In 2016, the Canadian Institutes of Health Research (CIHR), Canada's federal funding agency for health research, which is composed of 13 virtual Institutes, supported thousands of health researchers across Canada, and provided close to \$981 million in funding. In addition, Canada's provinces and territories, as well as private and not-for-profit organizations, provide additional sources of funding to the sector.

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



# AN ENABLING BUSINESS ENVIRONMENT

CANADA HAS A STRONG AND STABLE business climate that is open for business, investment, and trade. Canada benefits from a sound, efficient financial system supported by low taxes and business costs and a government investing in the innovative, clean, inclusive economy of tomorrow.

## A WELCOMING BUSINESS ENVIRONMENT

Canada is the second best place for business in the G20.

Source: Forbes

## A HIGHLY EDUCATED AND TALENTED WORKFORCE

Canada has the most educated talent pool in the OECD with more than half of its population aged 25-64 having a tertiary level education.

Source: OECD

## LOW BUSINESS TAX RATES

Canada is the most tax competitive country in the G7.

Source: KPMG

## WORLD-CLASS CLUSTERS OF INNOVATION, WITH GOVERNMENT AS PARTNER

Canada has strong geographic and sectoral clusters, as well as R&D-intensive sectors with the lowest business costs in the G7.

Source: KPMG

## FINANCIAL STABILITY

Canada's banking system, ranked 3rd by the World Economic Forum (WEF), remains one of the soundest in the world following eight consecutive first place standings.

Source: World Economic Forum

## A GREAT PLACE TO INVEST, WORK AND LIVE

Canada ranked first among 60 countries for quality of life. Canada is ranked first in the G7 and G20 for overall prosperity of citizens.

Sources: U.S. News and the Legatum Prosperity Index

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

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