

A hand in a blue nitrile glove holds a glass vial. A 3D molecular model with blue and grey spheres is overlaid on the scene. The background is a blurred laboratory setting with glassware.

QUÉBEC'S LIFE-SCIENCES INDUSTRY

THE RIGHT FIT

“The Merck Lumira Biosciences Fund, a collaborative approach by the government, research community and industry, builds on the strong foundation of innovation in Québec.”

Cyril Schiever,
President and Managing Director
of Merck in Canada

Open Innovation in Québec

Pharmaceutical companies around the globe are now using a new business model based on partnerships to fuel their pipeline with innovative products. Thanks to Québec's expertise and the excellence of its scientific research cluster, numerous partnerships involving pharmaceutical giants have been forged, in some cases with the financial participation of the Québec government.

Win-Win Partnerships

The **Partnership Fund for an Innovative, Healthy Québec** (PFIHQ) supports partnerships between the private sector and public medical research institutions. **Seven projects** have been selected to receive government assistance of **\$62.5 million** and **\$77.3 million** from private partners including **Hoffmann-La Roche, Servier, Pfizer, Merck, Valeant** and **Novartis**.

Roche has made the **Montreal Heart Institute** (MHI) its **global research centre on cardiometabolic diseases**. The alliance pools MHI's world-class expertise with Roche's capabilities in translational medicine and clinical development.

The **Government of Québec, Telus, Ubisoft, ORS, Emovi, TS03, Medtronic, Roche Diagnostics** and **Siemens** teamed up with five university health centres to create **MEDTEQ**, a research consortium for the development of medical technologies.

Pfizer, Sanofi, Caprion Proteomics, Oncozyme Pharma and **Telus Health** invested with the **Québec government** to create the Personalized Medicine Partnership for Cancer (PMPC), which works to develop and test new biomarkers and to encourage their use in medical practice.

Bristol-Myers Squibb signed a collaborative research and licence agreement with the Institute for Research in Immunology and Cancer (**IRIC**) at the **Université de Montréal** to support two new projects in oncology.

AstraZeneca and **Pfizer** teamed up with the **Québec government** to create the **NEOMED Institute**, a life-sciences research facility in Montréal that acts as a bridge between the private sector and academia, bringing together the various players in the R&D chain.

GLOBAL COMMERCIAL SUCCESSES:

3TC/Epivir®: The first effective treatment for HIV, this triple therapy was discovered by Dr. Bernard Belleau at McGill University and Dr. Paul Nguyen-Ba at the Montréal-based IAF BioChem International laboratories in 1988. The drug was later licensed to British pharmaceutical company Glaxo by Biochem Pharma.

SINGULAIR®: Montelukast sodium, now called SINGULAIR®, was discovered by Merck Canada for the treatment of chronic asthma. The drug, one of Merck's most significant R&D contributions, was developed in Montréal—hence the “Mont” in its original name.

ENOBIA: The Food and Drug Administration (FDA) has granted breakthrough therapy designation to asfotase alfa for the treatment of patients with hypophosphatasia (HPP). It's a first-in-class targeted enzyme replacement therapy developed originally in Québec and acquired by Alexion with the acquisition of ENOBIA Pharma.

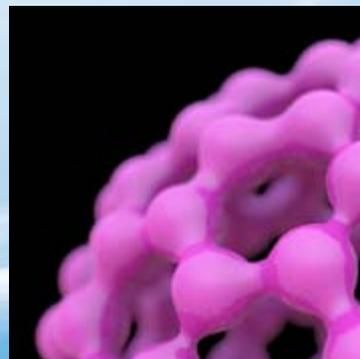
FluLaval®: This injectable influenza vaccine for active immunization against influenza was developed in Québec at ID Biomedical, acquired by GlaxoSmithKline in 2005.

EGRIFTA®: This injectable treatment, known as Tesamorelin, was developed by Montréal company Theratechnologies to reduce excess abdominal fat in HIV-infected patients with lipodystrophy. It will be commercialized as EGRIFTA® in the United States exclusively by EMD Serono under a collaboration and licensing agreement.

A Complete Cluster: From Bench to Market

Québec is a major pharmaceutical hub in Canada, with over 70 corporations and the Canadian headquarters of giants like Pfizer, Sanofi, Valeant Pharmaceuticals and Merck.

The cluster encompasses all the main segments of the industry: basic research, manufacturing, biotechnology, contract research and medical technology. Nearly half of the companies in the life-sciences sector in Canada are concentrated in Québec, spawning opportunities for partnership and collaboration.





Dr. Eustache Paramithiotis
(Caprion Proteomics Inc.)

Talented and Qualified Workforce

Québec has earned a name for the excellence of its scientific workforce. It has developed a deep pool of highly skilled and experienced workers as a result of the concentration of high-tech jobs.

It boasts a **critical mass** of more than **10,000** researchers at public biomedical research centres and more than **2,000** workers with expertise in basic research, organic synthesis, drug administration and rational drug design. Québec is also home to some 300 university-affiliated research centres, public research centres and research organizations.

Recognized Fields of Excellence

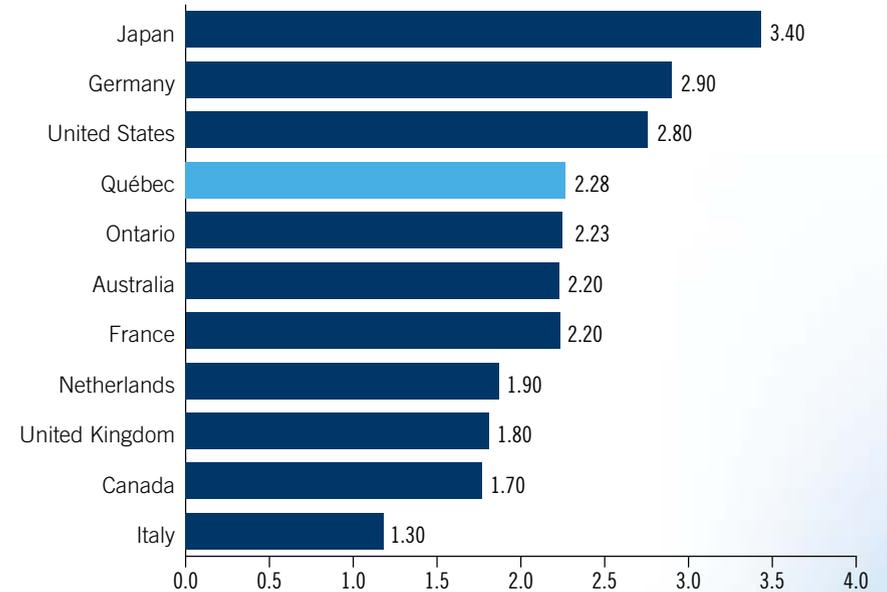
Québec is home to internationally renowned research centres of excellence and offers an exceptional environment for the development of public and private health research. The province is one of the 10 largest health-science clusters in North America, with world-class research infrastructures and leading expertise in fields such as:

- **Oncology:** More than 10 world-class cancer research centres in Québec are readily available as well as cancer research networks and tissue banks in ovarian, breast and skin cancers and leukemia.
- **Neuroscience:** Québec is well recognized for its expertise in the central nervous system, receiving 36% of Canadian research funds allocated to aging, neurosciences and mental health.
- **Cardiology:** Québec is a major international hub of cardiology research, receiving 27% of Canadian research funds in the field. In addition, the Montreal Heart Institute (MHI) was selected in 2012 as Roche's global research hub in cardiometabolic diseases.
- **Genetics, genomics and proteomics:** Québec is a leader in genomics, receiving over 60% of federal co-funding from the 2013 Genome Canada competition. Research centres, research teams and state-of-the-art infrastructures are well renowned for their research into functional genomics, pharmacogenomics, RNomics, personalized medicine and bioinformatics.

INNOVATING IN QUÉBEC

According to KPMG's 2014 international comparative study on business location costs, Québec allocated 2.28% of its GDP to research and development, the highest level of any Canadian province. It also exceeds the rate of industrialized countries such as France, Netherlands, United Kingdom and Italy.

Gross Expenditure on R&D (% of GDP)



Source: *Competitive Alternatives, KPMG's Guide to International Business Location Costs, 2014 Edition*

TAX CREDITS FOR FOREIGN RESEARCHERS

To enable innovative companies operating in Québec to attract the world's best researchers, the province offers generous personal income tax reductions, with a 100% tax credit over two years and a 75% credit, on average, over five years.



The NEOMED Institute

Operating Costs Among the Lowest in the G8

Given its affordable labour, capital and operating costs, Québec is one of the most attractive locations in the world for biopharmaceutical development, drug manufacturing and clinical trials.

INTERNATIONAL ANNUAL COSTS COMPARAISON



Source: KPMG's Guide to International Business Location Costs, 2014 Edition (Operating costs include labour, rent, transportation, electricity and gas.)

Index: United States = 100

RECENT INVESTMENTS

- In 2014, Korean company **Green Cross**, the global leader in biopharmaceuticals, chose Montréal as the site of a new blood plasma fractionation plant.
- In 2013, **Servier Canada** invested \$16.3 million in a centre of excellence in clinical research at the Laval Technopole. The centre will house the Canadian International Centre for Therapeutic Research (ICTR) and the Servier Canada National Centre for Professional Training.
- In 2013, **GSK** invested \$36 million in its Québec City facilities. The investment will enable the pharmaceutical company to add two new production lines, one for filling and packaging pandemic vaccines and another for packaging influenza vaccines.
- In 2012, **Valeant** invested over \$20 million to modernize its manufacturing plant in Laval, set up an international centre of excellence in cosmeceuticals and dermatology, and establish Valeant Pharmaceuticals International Inc.'s global headquarters in Greater Montréal.
- In 2012, **Pfizer** invested nearly \$32 million to upgrade its tablet manufacturing plant in Saint-Laurent, Montréal.



QUÉBEC: THE CANADIAN LEADER IN VENTURE CAPITAL INVESTMENT

Québec was the Canadian leader in venture capital (VC) in 2012, receiving 50% of all venture capital raised and having 58% of all VC-backed companies in Canada.

Major private funds, government funds and large pharmaceutical companies have joined forces to invest in funds intended for innovative enterprises:

- **Sanderling VII**, a new \$60-million start-up fund managed in Montréal by the Therilia team, which will conduct initial preclinical trials on molecules with therapeutic potential (2013).
- **Lumira Capital II Fund** (Merck, Lumira Capital and Teralys Capital), a \$100-million fund launched in Québec to benefit North American firms involved in late clinical stage development of medications, diagnostics and medical devices (2012).
- **Merck Lumira Biosciences Fund**, a \$50-million fund investing solely in Québec biotechnology firms (2012).
- **TVM Life Science Ventures VII** (Eli Lilly, Business Development Bank of Canada, Fonds d'action CSN, Advantus Capital Management, Teralys and TVM Capital), a \$150-million fund investing primarily in early-stage drug development and opportunities for life-science companies (2012).
- **GSK Canada Life Sciences Innovation Fund**, a \$50-million innovation fund investing in Canadian-based early-stage breakthrough research (2011).
- **AmorChem** (Merck, FIER Partenaires, Investissement Québec, FTQ Solidarity Fund), a \$40-million fund investing in promising life-science projects by Québec-based universities and research centres (2011).

WE'RE HERE TO SUPPORT YOU THROUGHOUT YOUR PROJECT

Investissement Québec offers the combined services of a financing corporation and an economic development agency. Our team of experts can support you through all stages of your project in Québec. We can help you secure the necessary financing, locate an appropriate site, and find the partners and suppliers you need.

FINANCIAL SOLUTIONS WITHIN YOUR GRASP

We offer a complete range of financial solutions to support the growth of businesses operating in Québec. These solutions include direct loans, equity financing (venture capital and growth capital), and the certification required for certain tax measures introduced to stimulate the life-sciences sector.

A NETWORK AT YOUR SERVICE

Investissement Québec is central to Québec's economic development and maintains privileged relationships with numerous stakeholders in the public and private sectors. We can put you in touch with the right people and help you carry out your project rapidly.

**TO FIND OUT MORE ABOUT HOW WE CAN ASSIST YOU,
CONTACT ONE OF OUR REPRESENTATIVES AROUND THE WORLD
OR VISIT OUR WEBSITE.**

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