

Greater Montréal: A World-Class Life Sciences & Health Tech Hub



A world leading economic development agency





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Top reasons to invest in life sciences and health tech in Greater Montréal



46,000+ jobs in life sciences and health tech in private companies



A **global AI hub**, with many life sciences projects including major players **Novartis**, **Roche** and **AstraZeneca**



Cutting-edge health infrastructure and an **ethical** framework to access data



Several thousand researchers in public organizations



1st in Canada for university research funding with \$2B per year



Competitive operating costs among the 20 largest metro areas in Canada and the U.S.



A **collaborative ecosystem** with many public-private partnership projects



50,000 university and college students enrolled in Life sciences and health tech-related programs



Strong government support and attractive tax credits and incentives for **R&D** and **talent development**

A strong and growing metropolis, strategically located in North America



Population

- 4.3 million residents
- 23% of population are foreign-born (34% for the city of Montréal)



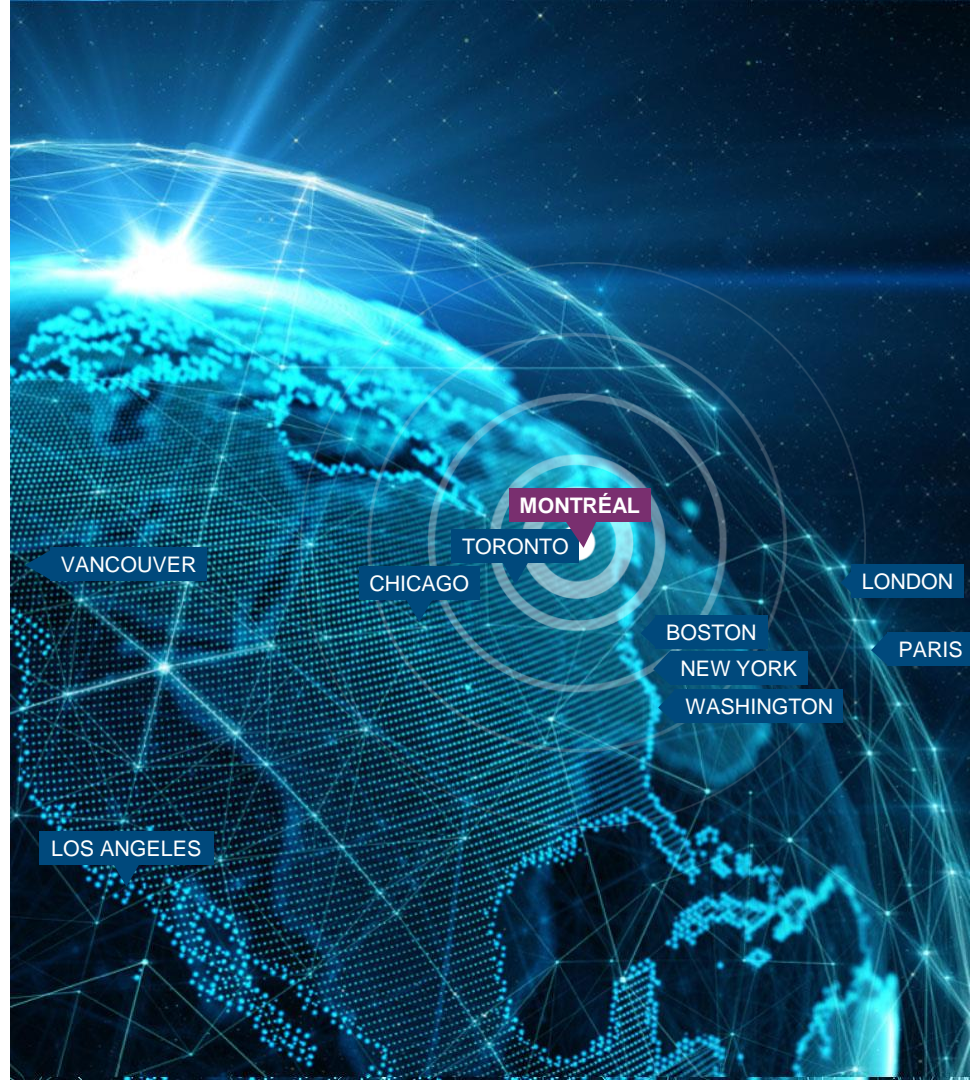
Economy

- Fastest economic growth in Canada in 2021
- Among the strongest economic growth forecasts in Canada in 2022
- \$3.765 billion in foreign direct investment in 2021 supported by Montréal International



Location

- 82 municipalities, 1 metropolitan area
- A 90-minute flight to Boston and New York City
- Less than a one-hour drive to the U.S. border





Montréal's Old Port

A direct access to 1.5 billion consumers, thanks to free trade agreements

Thanks to **CUSMA, CETA, CPTPP** and 12 other free trade agreements in force*

Direct access to **1.5 billion consumers** and a **combined GDP of US\$50 trillion** (60% of the world's output of goods and services)

Canada is the only G7 country to have a free trade agreement with the United States and the European Union while being part of the CPTPP

*Canada-United States-Mexico Agreement (CUSMA), Comprehensive Economic and Trade Agreement (CETA) and Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)
Source: World Trade Organization, 2020; World Bank, 2019; Census Bureau, 2020..

01

Life Sciences: A Strategic Sector for Québec



Québec's ambitious Life Sciences Strategy

Five strategic priorities



Generate synergies to address major health challenges



Develop human capital and attract talent



Support the creation and growth of **innovative businesses**



Attract and **execute investment projects**



Spur the commercialization of innovations

Three goals

1

Attract **\$4 billion** of private investment in Québec by 2025

2

Develop new industrial sectors in future niches, such as:

- mRNA
- AI applied to diagnostics and health
- Precision medicine
- Cell and gene therapies
- Biological product development, including vaccines

3

Increase the presence of Québec companies in the local and international supply chains

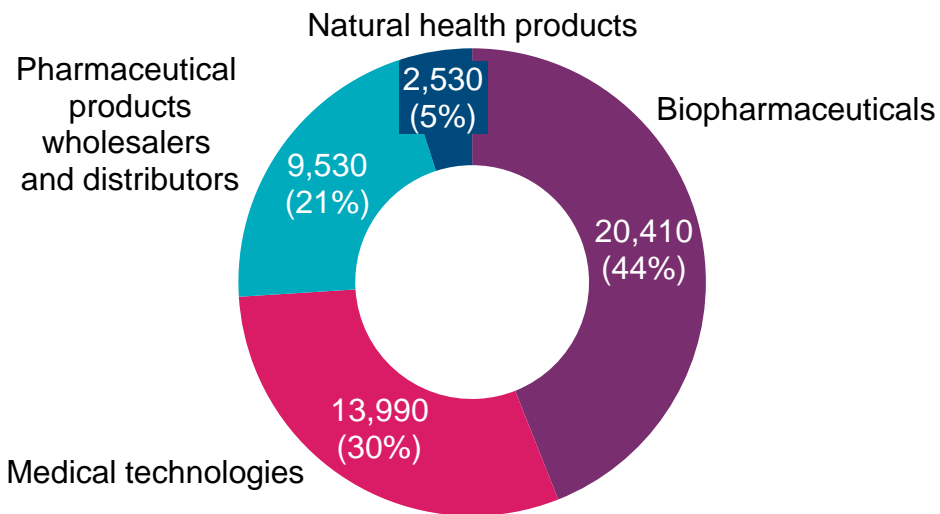
02

A Unique Interconnected & Collaborative Ecosystem



Québec's life sciences and health tech ecosystem is among the largest in North America

**Distribution of jobs in the LSHT industry
in Québec in 2020**
(in number of jobs and %)



1,000+ companies



46,000+ jobs
in private companies



Several thousand researchers
in public organizations



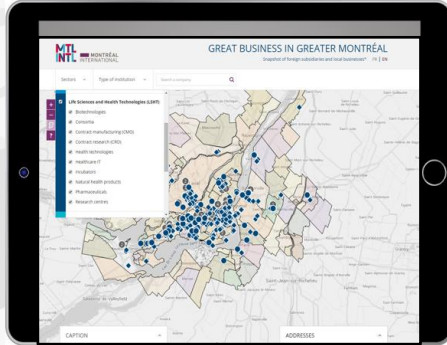
80% of Québec's ecosystem
is based in Greater Montréal

Numerous foreign companies have chosen Greater Montréal to expand their operations

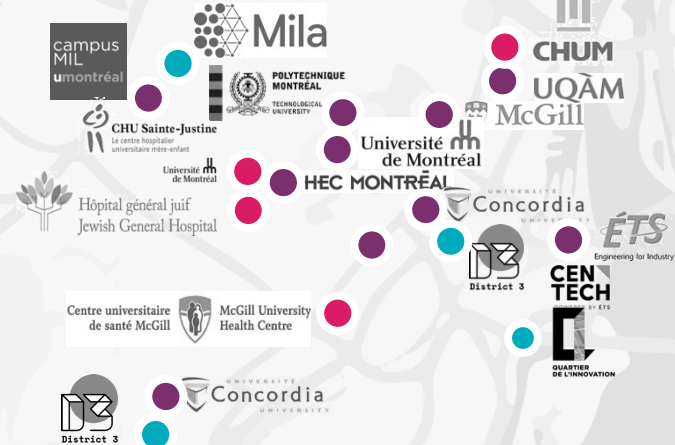


A major hub to boost business partnerships throughout the region

Click [here](#) to visit our interactive map of companies



Trudeau
International Airport



Innovation centre – fall 2020



U.S. Border
Less than 1 h



Boston
1.5 hrs



New York City
1.5 hrs

Toronto



1.5 hrs



6 hrs

Legend

● Industrial park / innovation cluster

● University Hospital Centre

● University

A large ecosystem driven by many supporting organizations

▲ Sector associations and clusters



▲ Translational research and clinical research organizations



▲ Consortium, research valorization and partnership research



▲ Accelerators and incubators



- And many more!

An extensive network of VC investors

- **\$8 B+** in VC investments between 2017 and 2021 in Québec, including **24%** dedicated to life sciences
- **Six of Canada's ten most active venture capital funds** in 2021 are based Montréal
- Example of funding for life sciences companies:



raised **US\$185M** (2021)
and **US\$37M** (2020)



raised **US\$140M** (2022)
and **US\$100M** (2021)



raised **US\$82.5M** (2019)



raised **US\$80M** (2018)



raised **US\$30M** (2020)

Private venture capital



Institutional partners



A collaborative approach between health, social services and research institutions

- **\$7.4+ billion** in investment in ongoing projects for cutting-edge healthcare infrastructure in Québec
- **\$805M in research spending in hospitals** in Québec in 2021
- **A wide university-affiliated hospital network*** to unite institutions, such as:



Recent major investments in health infratructures



Centre hospitalier de l'Université de Montréal (CHUM)
500,000 ambulatory visits/year



McGill University Health Centre (MUHC)
220,000 ambulatory visits/year



CHU Sainte-Justine, Mother & child university hospital Centre
80,000 ambulatory visits/year

* Université de Montréal and McGill University.

Source: Research Infosource, "Canada's Top 40 Research Hospitals 2021"; Commission de la construction du Québec, "Liste des chantiers importants", 2020; CHUM, 2020; MUHC, 2020; CHU Sainte-Justine, 2020.

Montréal East, a thriving hub for personalized healthcare

- A project of innovation zone with two key sectors of activity*:



Biotechnology, including cell therapy, gene therapy, pharmacogenomics



Healthcare technologies, including digital health, clinical research and virtual hospitals

- Many cutting-edge research organizations, promoting discovery, development and commercialization, involved in the project:



Center for
Commercialisation of
Cancer
IMMUNOTHERAPY



MONTREAL
HEART
INSTITUTE

Centre intégré
universitaire de santé
et de services sociaux
de l'Est-de-
l'Île-de-Montréal
Québec



A supportive ecosystem that fosters innovation

Pharma/biotechs



adMare BioInnovations: Life Sciences & Health Technology Innovation Hub including the adMare Innovation Centre, hosting subcontractor research organizations, biotech companies and consultants



IRICoR: Accelerating discovery and commercialization of highly innovative therapies in oncology by strong partnerships with industry



CQDM: Development of breakthrough tools and technologies that enhance biopharmaceutical R&D productivity



C3i: One-stop shop for the development, translation and commercialization of ground-breaking cancer immunotherapies treatments



CATALIS: Mobilizing all stakeholders involved in early clinical research in Quebec

Health Tech



Transmedtech Institute: Transdisciplinary and intersectoral open innovation ecosystem to develop next generation medical technologies



CENTECH: The ÉTS business incubator and accelerator, ranked among the 20 top performing university incubators in the world



DISTRICT 3: Startup accelerator and entrepreneurial community located within Concordia University



MEDTEQ: Consortium for industrial research and innovation in medical technology



Health Tech Campus/Campus des technologies de la santé (CTS): Accelerator for medical technology companies

A developed network of centres of excellence to train GMP workforce and implement best practices



- **Center of expertise for applied research in the pharmaceutical sciences**
- Joint-venture between the John Abbott College and Cégep Gerald Godin, both offering a **three-year pharmaceutical production** Diploma of collegial studies as well as continuing education and customized technical training
- Recipient of a \$250K grant from the city of Montréal in June 2021 to create a college certification training for biopharmaceutical production of advanced therapies focusing on **vaccines, CGT, and blood products**



- **Canadian network focused on advancing cell and gene therapy manufacturing**
- Launched the **Canadian Advanced Therapies Training Institute (CATTI)** in partnership with CCRM in Toronto, a centre of training developing and scaling e-learning and on-site **GMP training programs**
- Facilitates an unprecedented capacity in Canada for efficient and rapid upskilling of the required workforce
- **Advanced therapies:** vaccines production and cell, tissue and gene therapies

The INRS Armand-Frappier Research Centre, a hub for infectiology research and training in Québec

- Centre for research, training, and technology transfer in the fields of disease detection and prevention with a view to promoting human, animal, and environmental health
- The **only Canadian** university research institution part of the **Institut Pasteur International Network**
- A **new Level 3 laboratory (CL3)**, accredited by the Public Health Agency of Canada, which propels research on numerous pathogens
- A **National Experimental Biology Laboratory (NEBL)**, one of the few animal facilities in Canada that can accommodate large animals
- **35 researchers**
- **215+** graduate students and postdoctoral fellows
- **\$8.6M** in research projects in 2020-2021





Biotechnology Research Institute (BRI) on Royalmount Ave. in Montréal, home to human health therapy research facilities © CNRC

National Research Council (NRC), a biomanufacturing leader

- Canada's **largest R&D team in human health with 340+ researchers**
- Montréal, NRC's biomanufacturing hub with the **Biotechnology Research Institute**
- Major investment in cutting-edge facilities:
 - **\$126M** (2020): construction of dedicated biomanufacturing facilities
 - **\$44M** (2020): construction of a clinical trial materials facility compliant with good manufacturing practices (GMP)
- **Expertise** in cell bioprocesses and lines, development of biological products and vaccines, etc.
- Provides **technical training and funding for industrial R&D partnerships**

Source: Government of Canada, "NRC facilities - Biologics Manufacturing Centre", 2021; Government of Canada, "NRC facilities - Human health therapeutics research facility – Montreal: Royalmount", 2021; Government of Canada, "Biomanufacturing: Projects underway", 2021; NRC, "Strategic Plan, 2019–2024".

Clinical Research Canada: an HTA country



Canada is on the list of the **Health Technology Assessment Countries** of the World Health Organization with two HTA, including one in Québec



Opportunity for scalable development, as Canada boasts a diverse population ideal for clinical research



03

Montréal, a True AI Hub for Life Sciences



Montréal is home to Canada's AI cluster headquarters



SCALE AI

Canada's AI supply chain supercluster



**Forum
IA Québec**

Québec's AI organization fostering the development of Québec's AI ecosystem



**Other health-related
Canadian superclusters**



a cross-industry
collaboration in healthcare,
communications, technology

NGen

Next Generation
Manufacturing Canada

The Innovative
Manufacturing supercluster:
manufacturing 4.0

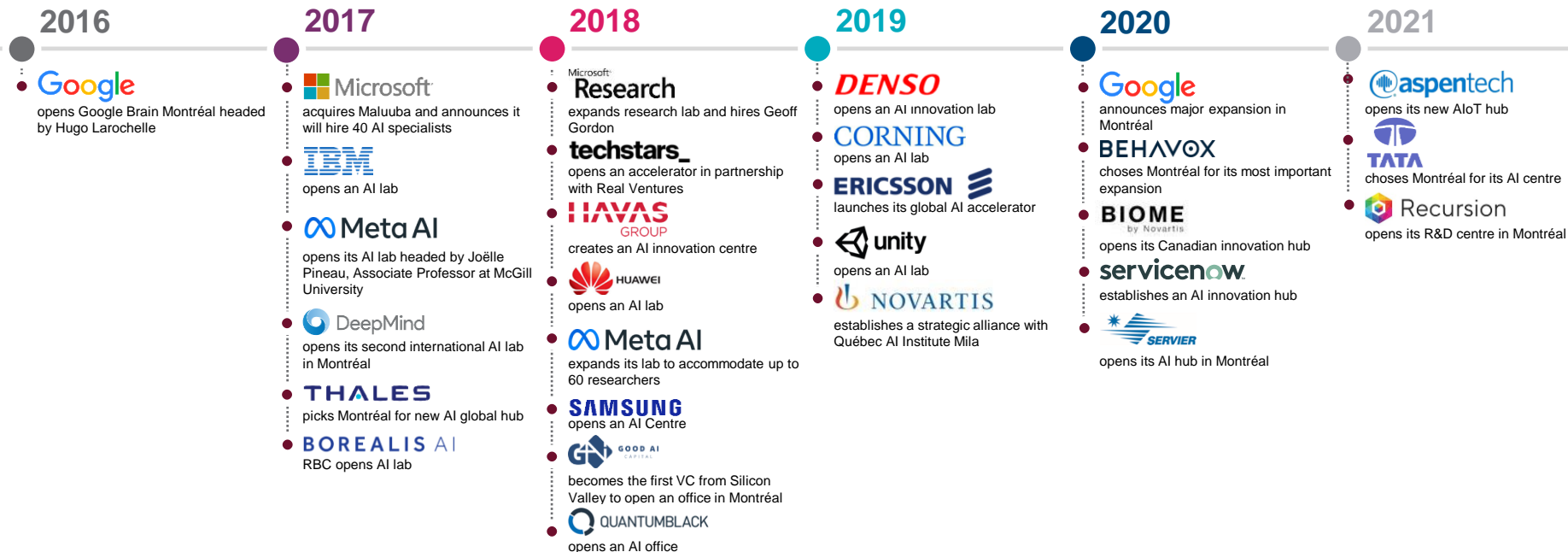


Mila, a thriving AI hub in the Mile-Ex neighborhood

- With close to **900 researchers**, Mila is the **world's largest academic research lab specialized in deep learning and reinforcement learning**
- A collaborative ecosystem of AI researchers, startups and major companies
- Examples of strategic global partners within Mila:



A few of the world leaders developing their AI expertise in Montréal



Other foreign companies that have chosen Greater Montréal



Strategic partnerships between major industry players and Mila in AI for health projects



Creating digital solutions to optimize health care delivery, reduce costs and improve health outcomes



Designing an evolving AI-based question-and-answer telemedicine platform to establish a preliminary diagnosis and collect all relevant results



Developing AI tools to accelerate understanding of the behavior of molecules when confronted with a virus or bacteria for the creation of new vaccines and drugs



Using AI to understand the biological mechanisms of disease, the design of molecules, or the prediction of clinical responses and safety profiles to facilitate clinical testing



Taking advantage of deep learning for drug design and make these technologies more widely available to R&D organizations



Doing the valorization of the unexplored data generated in order to transform the way therapies are developed



Using the AI ecosystem to accelerate the use of health technologies at Novartis Biome Canada innovation centre



Leveraging machine learning and advanced computational methods to accelerate drug discovery and development



CHUM: key initiatives to facilitate data access and the use of AI



Health Innovation District (HID)

The Centre Hospitalier de l'Université de Montréal (CHUM) and Allied Real Estate Investment Trust partner in the **Place Gare Viger project** to bring a community of innovation in **AI for health** between hospitals and health institutions, private partners, universities, including patients and citizens



Data lake project CITADEL

The Center for the Integration and Analysis of Medical Data (CITADEL) at the CHUM is one of the initiatives adopted to facilitate learning, teaching and communication:

- **20** integrated information systems
- **20+** million episodes of care
- **3.7** million patient records

04

A Deep and Growing Pool of Highly Qualified Talent



A pool of highly qualified workers

Examples of sector-related occupations in Greater Montréal (all industries combined)

Workers,
2021

Health sciences technologists and technicians	11,800
Technical sales specialists – Wholesale	14,900
Chemists, chemical technologists and technicians	6,400
Biologists, biological technologists and technicians	8,400
Healthcare managers	7,500
Pharmacists	3,700
Dietitians and nutritionists	3,400





A large pool of manufacturing workers

Examples of manufacturing-related occupations in Greater Montréal	Workers, 2021
Material Handlers and Longshoremen	30,400
Transport Truck Drivers	29,600
Manufacturing Directors	17,000
Computer Systems Managers	9,800
Machinists and Machining and Tooling Inspectors	6,600
Industrial and Manufacturing Engineers	4,700
Mechanical Engineering Technologists and Technicians	3,100
Industrial Engineering and Manufacturing Technologists and Technicians	1,800

The best student city in the Americas and Canada's university capital

- **Canada's university capital:** 15 university institutions and 60 colleges
- **320,000 post-secondary students**, including more than **200,000 university students** and **50,000 international students**
- **1st in Canada for university research funding** with nearly \$2B per year



Best student city in the Americas
tied with Boston

QS Best Student Cities Rankings 2022

1	Montréal tied with Boston
2	Toronto
3	New York
4	Vancouver
5	San Francisco



Source: QS Best Student Cities in the World, 2022; Ministry of Education and Higher Education, 2021; Research Infosource Inc., 2021.



Close to 40,000 university students are enrolled in LSHT programs

Examples of LSHT-related university programs	Students enrolled, 2021–2022	Graduates, 2021
Mechanical engineering	11,027	1,679
Biological sciences	7,072	1,176
Pharmaceutical sciences	4,427	722
Biochemistry and biophysics	2,699	378
Chemistry	2,458	361
Chemical engineering	2,234	330
Microbiology	1,917	323
Biological and biomedical engineering	1,810	207
Dietetics and nutrition	1,716	328

Source: Ministry of Education and Higher Education, 2022; compilation by Montréal International.

More than 9,000 college students are enrolled in LSHT programs

Examples of LSHT and manufacturing related collegial programs	Students enrolled, 2021–2022	Graduates, 2021
Laboratory techniques	2,106	316
Medical imaging techniques	1,891	301
Mechanical engineering techniques	1,870	392
Pharmaceutical production and procedures	959	60
Medical devices	794	238
Nutrition and dietetics	565	143
Administration and management of medical data	474	148
Neuroscience and geriatrics	447	98



05

Attractive Operating Costs and Incentives



Competitive operating costs among the 20 largest metro areas in Canada and the U.S.

1st clinical trials and life sciences R&D centre¹

1st Software development centre

2nd bio-pharma manufacturing²

4th medical devices manufacturing plant

1: Research, discovery, design, development or testing of biotechnology or pharmaceutical related products and/or medical devices.

2: Companies in this industry develop and manufacture therapeutic products and in vitro diagnostics using biotechnology.

Source: fDi Benchmark, 2022.



Québec offers corporations an attractive tax treatment

Comparison of corporate effective tax rate (%) Selected Canadian provinces and U.S. States, 2021

Québec (Montréal)	26.50%
Ontario	26.50%
Massachusetts	27.32%
California	27.98%
New Jersey	28.11%
Illinois	28.51%
New York	34.64%



Advantageous salaries for pharma companies

Annual salaries* (US\$) for seven typical occupations in pharma Selection of 7 major North American cities, 2022

	Montréal	Toronto	Raleigh	Chicago	Newark	Boston	San Francisco
Laboratory Technician	\$49,757	\$53,330	\$57,402	\$64,253	\$67,284	\$70,326	\$74,775
Laboratory Supervisor	\$78,276	\$83,688	\$99,129	\$109,110	\$119,084	\$116,581	\$129,144
Scientific Researcher	\$85,270	\$91,020	\$100,345	\$110,331	\$120,475	\$117,869	\$130,617
Pharmaceutical Detailer	\$74,854	\$79,899	\$103,491	\$104,139	\$116,083	\$114,268	\$126,134
Laboratory Head	\$81,888	\$87,750	\$97,434	\$105,717	\$110,125	\$113,886	\$134,208
Biochemist	\$100,189	\$106,585	\$130,632	\$139,143	\$156,051	\$144,116	\$161,993
R&D Manager (technical)	\$145,028	\$155,241	\$196,098	\$184,085	\$212,617	\$197,587	\$236,247

* Base salaries based on Level 2 (Intermediate level with 5 to 7 years experience) at the 75th percentile, for the pharmaceuticals industry (NAICS 3254).

Currency exchange based on the 2021 yearly average: US\$1.00 = CA\$1.2535.

Source: Economic Research Institute Inc., 2022.

Low mandatory benefit costs for employers

Examples of mandatory benefit costs for employers, 2022

Gross annual salary*	\$50,000	\$100,000	\$125,000
Québec Public Pension Plan (employee: 6.15%; employer: 6.15%, max. \$3,500)	\$2,859.75	\$3,500.00	\$3,500.00
Québec Parental Insurance Plan (employee: 0.494%, employer: 0.692%, max. sal. of \$88,000)	\$346.00	\$608.96	\$608.96
Employment Insurance (employee: 1.20%, employer: 1.68%, max. sal. of \$60,300)	\$840.00	\$1,013.04	\$1,013.04
Health Services Fund (max. 4.26% if global salary total is more than \$7M)	\$2,130.00	\$4,260.00	\$5,325.00
Commission des normes du travail (Labour standards board) (0.06%, max. sal. of \$88,000)	\$30.00	\$52.80	\$52.80
Commission de la santé et sécurité du travail (Occupational health and safety board) (0.44% in service sector, max. sal. of \$88,000)**	\$220.00	\$387.20	\$387.20
Workforce Skills Development and Recognition Fund - Québec Training Law 1% (1% of their total payroll in training for employers with total annual payroll over \$2M)	\$500.00	\$1,000.00	\$1,250.00
Total benefit costs	\$6,925.75	\$10,822.00	\$12,137.00
Total cost	\$56,925.75	\$110,822.00	\$137,137.00
Total benefits in % of gross annual salary	13.85%	10.82%	9.71%

Note: *Paid vacation represents a minimum of 4% of salary and is included in gross salary. Some rates apply up to a maximum insurable revenue.

**The rate for the service sector (65110 - *Bureau de courtage; bureau de services professionnels; bureau offrant des services de soutien administratif*) is 0.44%. The average premium rate in 2022 is \$1.77 per \$100 of payroll.

Source: Revenu Québec, 2022.

Various incentives tailored to your project



- ▶ Strategic Innovation Fund
- ▶ Canada Economic Development for Québec regions
- ▶ Tax credit on SR&ED
- ▶ Mitacs Acceleration program for talent
- ▶ Support for technology innovation



- ▶ ESSOR Fund for Major Projects
- ▶ Tax credits for Large Investment Project
- ▶ Refundable Tax credit on R&D
- ▶ Tax Credit for Investments and Innovations (C3i)
- ▶ Deduction for the Commercialization of Innovations (IDCI)
- ▶ Financial assistance for job creation and training
- ▶ Tax holiday for foreign experts and researchers



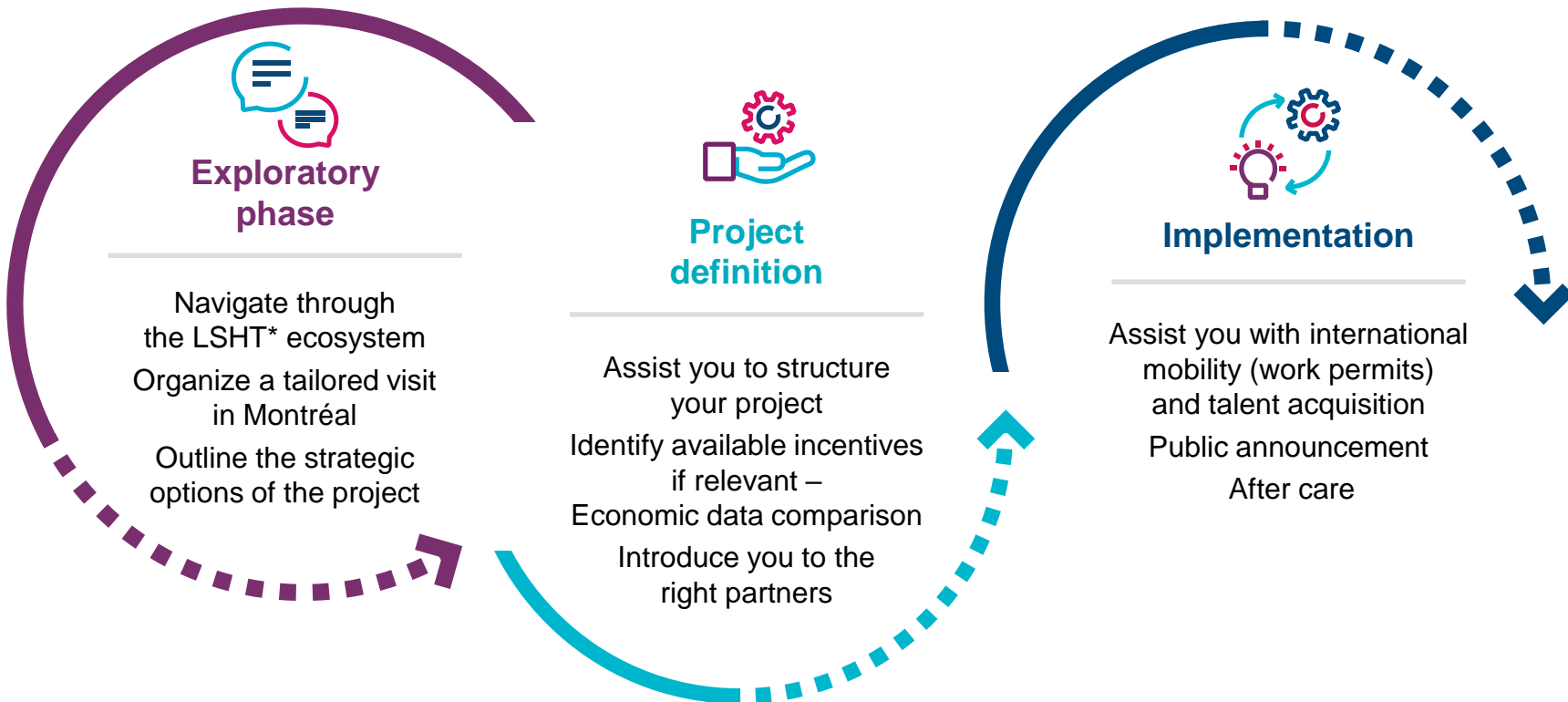
Sustainable development programs are also available at the municipal level

06

Montréal International's Personalized, Free and Confidential Services



Your development in Montréal: Montréal International can assist you through the whole process





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