

LIFE SCIENCES

VACCINES INFECTIOLOGY
DEVELOPMENT OF NEW MEDICATIONS CLINICAL RESEARCH
DIAGNOSTIC TOOLS TELEHEALTH MEDICAL EQUIPMENT
CLINICAL MOBILITY COSMECEUTICALS
NUTRACEUTICALS FUNCTIONAL FOODS CARDIOLOGY
PNEUMOLOGY ONCOLOGY TISSUE ENGINEERING

FROM FUNDAMENTAL RESEARCH AND PATIENT TREATMENTS TO DISEASE PREVENTION AND DETECTION, THE LIFE SCIENCES INDUSTRY REAPS THE BENEFITS OF THE REGION'S OUTSTANDING BUSINESS ENVIRONMENT.

Backed by internationally renowned research centres, industry leaders and a wide range of innovative companies, the Quebec City region offers cutting-edge expertise in the areas of biopharmaceuticals, medical technology, cosmeceuticals and nutraceuticals. Home to the Quebec Department of Health and Social Services (MSSS) and the National Public Health Institute (INSP), the region is also an important decision-making centre.

Capitalizing on high-value intersector collaborations and offering real proximity between industry stakeholders, the region is a genuine incubator of innovative techniques that are revolutionizing the health field.



LIFE SCIENCES INDUSTRY IN THE QUEBEC CITY REGION

128 companies
7,100 jobs
including
3,500
estimated research jobs
85 research centres,
chairs, groups and institutes
56,200
university graduates
in life science-related fields
CA \$1.5G
estimated in annual revenues

Data compiled for the Quebec City census metropolitan area (CMA) by Québec International.



COMBINING SCIENCE AND EXPERTISE

As a recognized skills hub, the Quebec City region is home to various internationally acclaimed researchers and has successfully transformed research and innovation into powerful growth drivers.

The **CHUQ Research Centre** is the largest university biomedical research centre in Canada. It is home to the world's first molecular endocrinology lab.

Backed by a team of 125 researchers, the **Quebec City University Institute for Cardiology and Pneumology Research Centre** is a world leader in the areas of cardiology, pneumology and obesity. It has the highest concentration of obesity researchers in Canada.

Employing 250 scientists from some 20 countries, the **Infectiology Research Centre** is the largest infectious disease research centre in Canada.

Offering specialized oncology services, **Laval University's Cancerology Research Centre** conducts research in the areas of applied oncology and cellular/molecular biology.

Positioned on the cutting edge of brain disease research, the **Quebec City University Mental Health Institute Research Centre** has 55 teams of researchers and is home to six Canada research chairs.

Employing 188 researchers, the **Quebec City Affiliated University Hospital Centre Research Centre** specializes in public health, aging and traumatology. It is home to the Experimental Organogenesis Laboratory, Canada's largest tissue engineering and regenerative medicine research centre.

The **Institute for Nutraceuticals and Functional Foods** is a multi-disciplinary research centre specializing in interactions between foods, nutrition and health.

The R&D team at **Hema-Quebec**, a supplier of blood components for Quebec's healthcare system, develops innovative products in the areas of transfusion medicine and human tissue grafting.

RIGOROUS CLINICAL TRIALS

Before they are marketed, medications and medical technologies are subject to a rigorous review process aimed at verifying their safety and efficacy. In Quebec City, PharmaNet/i3, a subsidiary of global leader inVentiv Health, carries out clinical trials in state-of-the-art facilities, including bioanalytical labs and four clinical units with 200 beds.

ACCURATE AND RAPID DIAGNOSES

Three ingenious local companies are competing to develop diagnostic tools. BD Diagnostics GeneOhm produces in-vitro polymerase chain reaction (PCR) tests used to identify infectious agents in record time. DiagnoCure develops molecular diagnostic tests for detecting and monitoring cancer, while GenePOC is offering a "lab on a chip" used to carry out diagnostic tests in a doctor's office in less than one hour.



KEY ROLE IN THE VACCINE FIELD

Quebec City is on track to become a global hub in the vaccine field. GlaxoSmithKline has a local facility that can produce 75 million doses annually (this capacity is set to double in the near future). Medicago, a rising star on the international stage, is revolutionizing the vaccine world with its exclusive manufacturing technology based on plants and pseudoviral particles.



VACCINES AND INFECTIOLOGY - FOLIA BIOTECH, GLAXOSMITHKLINE BIOLOGICALS, MEDICAGO
DEVELOPMENT OF NEW MEDICATIONS - ÆTERNA ZENTARIS, ASMACURE, ENDOCEUTICS
CLINICAL RESEARCH - PHARMANET/i3 **DIAGNOSTICS** - BD DIAGNOSTICS GENE OHM, DIAGNOCURE, GENEPOC
TELEHEALTH AND CLINICAL MOBILITY - ASENTRI, DOMEDIC GROUP, MYCA, HOSPITALIS SOLUTIONS

BEAUTIFUL AND HEALTHY AGING

Immanence Integral Derma Correction specializes in cosmeceutical products designed to reduce the signs of skin aging. This high-potential niche market brings together the fields of cosmetics and pharmaceutical products. In addition, Lucas Meyer Cosmetics, a Unipex Group subsidiary, has forged a solid reputation as a supplier of active ingredients that are currently available in more than 50 countries (North America, Europe and Asia).





TECHNOLOGY SERVING HEALTHCARE

Quebec City is home to various medical technology companies. Five of them (Asentri, DMedic, Fujitsu, Mirego and Hospitalis Solutions) recently created an innovation consortium to develop a platform for monitoring home care patients. They are now working with healthcare institutions to demonstrate the platform's clinical efficiency. In addition, TSO³ has developed an innovative low-temperature sterilization technology. The company's products have also attracted the attention of multinational 3M™, which distributes TSO³'s technologies under a global commercial agreement.



IMPROVING CARE AND QUALITY OF LIFE

The Quebec City region is playing an active role in developing new medications. EndoCeutics offers innovative therapies for treating hormonal disorders affecting post-menopausal women, as well as for treating and preventing breast cancer. Æterna Zentaris has a portfolio of 80 patent families as well as a library of 120,000 compounds for developing oncology products. The company's personalized medicine approach aims to create treatments adapted to the patient's specific condition.



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MEDICAL EQUIPMENT - STERIS CORPORATION, BERTEC GROUP, NEUROSTREAM TECHNOLOGIES, ORTHOFAB, TSO³
FINE CHEMICALS AND ACTIVE INGREDIENTS - OMEGACHEM, SILICYCLE
NUTRACEUTICALS AND FUNCTIONAL FOODS - ATRIUM INNOVATIONS, BIOPHARMACOPÆ
COSMECEUTICALS - DECTRO INTERNATIONAL, IMMANENCE INTEGRAL DERMO CORRECTION, LUCAS MEYER COSMETICS

INTEGRATED TRAINING COMPLEX

Laval University's Faculty of Medicine is one of the oldest in North America. Recognized for excellence in teaching, Laval University has created an integrated health sciences training complex encompassing the Faculties of Medicine, Pharmacy and Nursing. It is home to the Apprentiss Centre, which includes some 30 learning labs reproducing clinical settings. Playing a very active research role, the Faculty of Medicine has 260 professors/researchers who receive \$120 million in grants and research contracts every year. In 2012, it generated 343 patents and 14 spin-off companies.



Photo: Faculté de médecine de l'Université Laval - Jérôme Bourgon

QUEBEC CITY N°1 IN NORTH AMERICA FOR LOW OPERATING COSTS AMONG CITIES IN ITS CATEGORY

On average, overall operating costs for companies are 5.8% lower in Quebec City than in other North American cities. The region offers even greater cost savings in the areas of clinical trials (20.5%) and biomedical research (13.8%).

Source: KPMG 2012 Competitive Alternatives



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