

# Public-Private Partnerships to Support Drug Discoveries

The example of the Quebec Drug Discovery  
Consortium (QDDC)

*EuroBio, Lille*

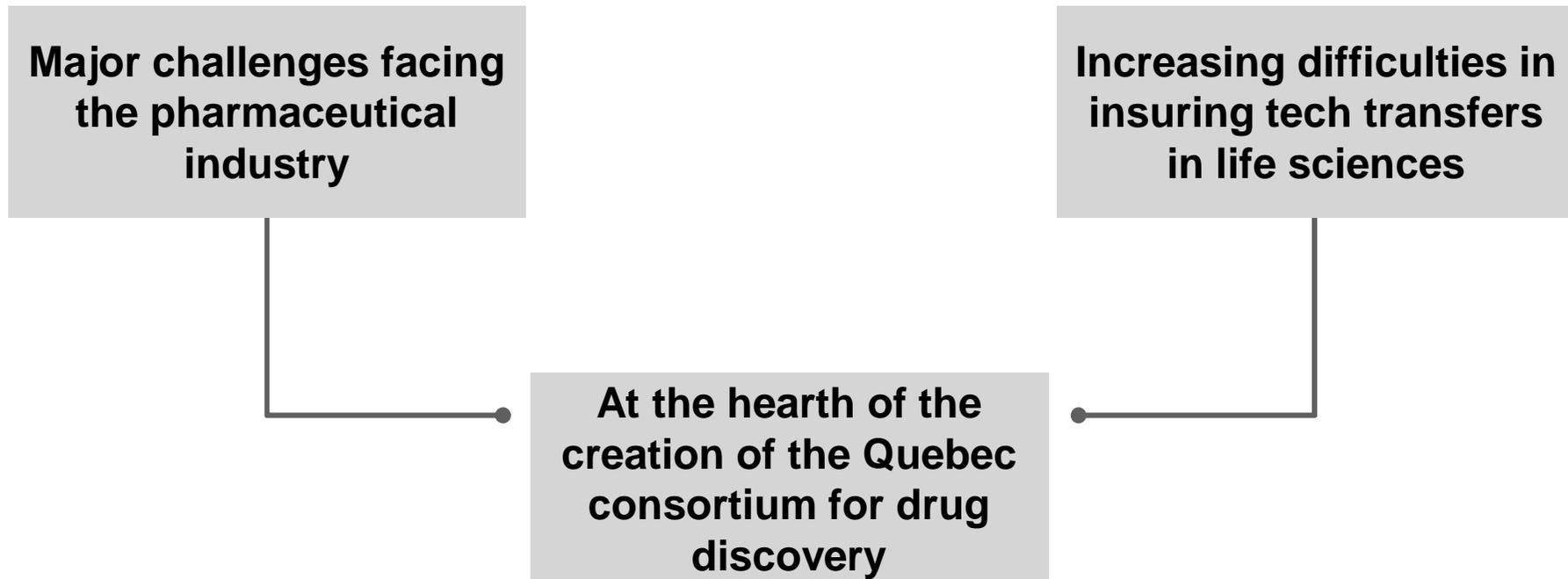
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# Pharmaceutical Research in Quebec

- ▶ **The pharmaceutical Industry: a strategic sector for Quebec**
  - 2 billion dollars in revenue, more than 40 000 jobs, close to 50% of overall Canadian activities are located in Quebec
- ▶ **A strong university and research network**
  - 4 faculties of medicine, 2 faculties of pharmacy and more than 10 000 students and researchers in life sciences
- ▶ **Major presence of pharmaceutical companies**
  - 13 of the 15 biggest Pharmas have research or manufacturing facilities in Quebec

# The Quebec Drug Discovery Consortium

## An innovative response to urgent needs



# The Major Challenges Facing the Pharmaceutical Industry:

- ▶ **Continuous growth of development costs**
- ▶ **Decrease in the number of new drugs registered in recent years**
- ▶ **The expiration of many drug patents**
- ▶ **Increase in the withdrawal of products from the market**

# The Increasing Difficulties in Insuring Tech Transfers in Life Sciences

- ▶ **Withdrawal of venture capital from early stage investments in life sciences**
- ▶ **Diminishing interest of academic researchers in commercializing discoveries**
- ▶ **Increasing risk and complexity**
- ▶ **Growth in the cost of pre-clinical phases**

# The Objectives of the QDDC

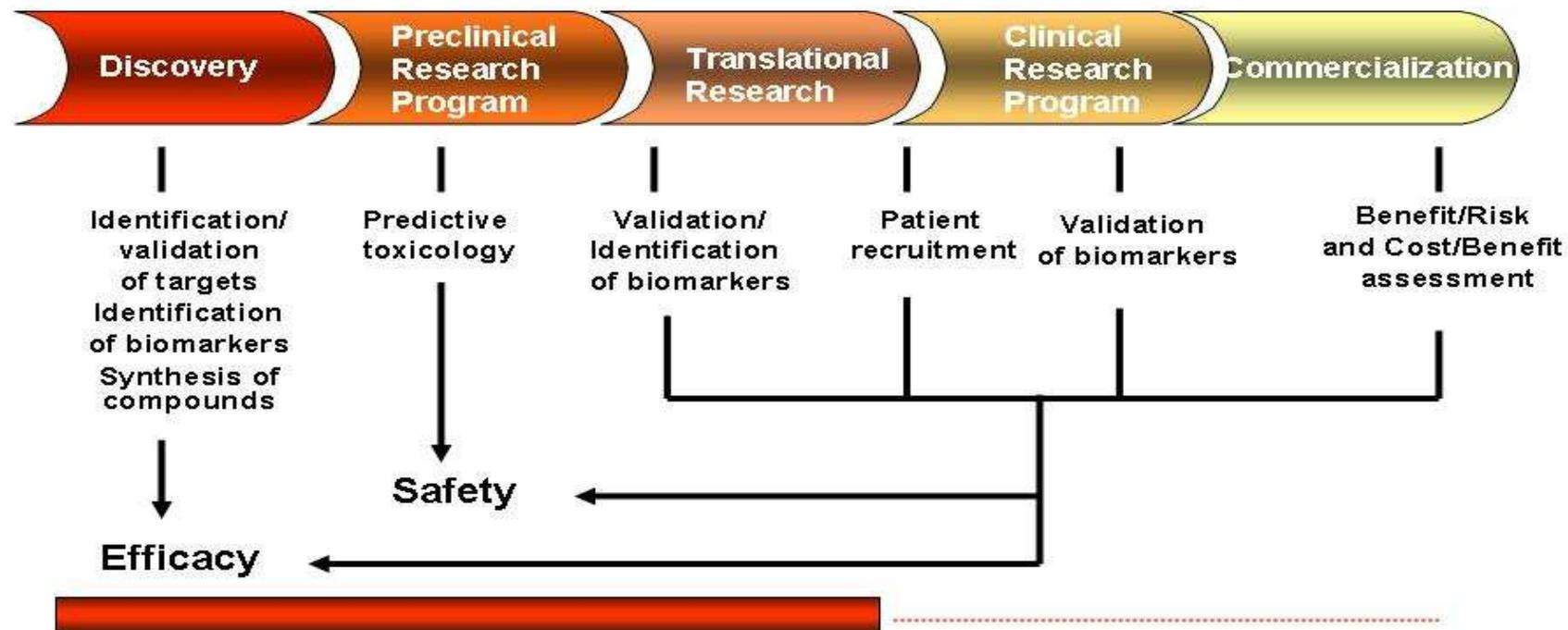
- ▶ **Enable the public sector and the pharmaceutical industry to invest more in R&D and increase the productivity of their investments**
  - By better channelling of public investment in pharmaceutical R&D
  - By improved functional network with and within the drug industry
- ▶ **With the ultimate goal of accelerating the drug discovery process and developing safer and more effective drugs**

# Key Characteristics

- ▶ **Financing of pre-competitive research**
  - On new methods to optimize the drug development process
- ▶ **With public-private funding**
  - 50% - 50% between government agencies and pharmaceutical firms
- ▶ **But industry-driven**
  - Regarding research theme, agenda and project financed
- ▶ **And inducing cooperation**
  - Criteria: Multi-institutional, inclusion of Biotechs
- ▶ **With a proper level of support**
  - In dollars (\$2-3 M per project) and advisory support

# Financing of Pre-Competitive Research

Figure 1: QDDC activity niches  
(Pre-competitive Research)



**Key**

■ QDDC's activity sectors

Source: Adapted from the Innovative Medicines Initiative, 2006. The Innovative Medicines Initiative (IMI) Strategic Research Agenda.

# Examples of Research Orientation

**Create enabling tools and technologies that will facilitate or accelerate the discovery or development of new drugs e.g.**

- ▶ **develop tests to predict toxicity and/or efficacy**
- ▶ **validate new therapeutic targets**
- ▶ **develop new animal models**
- ▶ **mathematically model pre-clinical and clinical development**
- ▶ **develop and validate new biomarkers**

## With Public-Private Funding

A minimum contribution of \$24M from the industry (not taking into account additional co-financing in specific projects)

	2008-12
FRSQ	\$4M
MDEIE	\$12M
Federal gov't.	\$8M
Industry*	\$24M
<b>TOTAL</b>	<b>\$48M</b>

\* Pfizer, Merck Frosst, Astra Zeneca

# Taking into Account Lessons Learned in Tech Transfer

## Industry driven, inducing cooperation and with proper levels of support

- ▶ High-level industry leaders set research priorities, determine focus of call for tenders, select projects, fix milestones and monitor developments
- ▶ Research projects carried out in public-private partnerships, inclusion of a biotech firm in the research team is prioritized in the selection process
- ▶ At least one of the pharma sponsors follows the project more closely and provides the research team with advice and access to industrial expertise
- ▶ A much higher level of financing than those offered by other “discovery” funds
- ▶ A non-dilutive financing scheme that includes “rewards” for all parties involved, if project leads to commercialization
- ▶ Involvement of a group of institutions in the development process
- ▶ Active participation of the Quebec health research fund granting council (FRSQ) to emphasize the importance of commercializing research

**To Know More About the QDDC**

**[www.cqdm.org](http://www.cqdm.org)**

# Appendix

# The Partners

**The QDDC gathers the key players from the private, academic and public life-science sectors into a consortium devoted to supporting drug discovery and development**

## THE QUEBEC DRUG DISCOVERY CONSORTIUM (QDDC)



## **QDDC's Mission**

**As part of international initiatives aimed at accelerating drug discovery and development, the QDDC plans to stimulate pre-competitive research in the field of drug development in order to help:**

- ▶ reduce development costs by sharing risks, resources and expertise**
- ▶ accelerate drug discovery, development and commercialization processes for safer and more efficient molecules**
- ▶ foster the integration of new drugs into the provincial health system**
- ▶ become a research nexus for the pharmaceutical industry in the country**
- ▶ create an innovative model of public-private research partnerships**