A shared facility to fight against Infectious Diseases:
The Infectious Diseases Center

BioCT International Workshop
Friday, 19th February, 2010
LYONBIOPOLE, a world-class Competitive Cluster in France

**Aim of the competitive clusters**

**Make 5 different kinds of players on the innovation field work together**
- Companies of all sizes
- Public Research centers
- Educational institutions
- Investors
- Institutionals

**Vocation of the competitive clusters**

- Encourage and develop public/private partnerships between large companies, SMBs, and academic research in order to produce innovative collaborative R&D projects
- Leverage France competitiveness

**Dedicated public fund**

- Single Interministry fund
- At least 2 companies + 1 public laboratory working on an innovative R&D project
LYONBIOPOLE: A French BIO Cluster with an industrial leadership …

Stakes in public health

Built a “healthcare shield”
to fight human and animal infectious diseases and cancers

Core Business

Develop innovative diagnostic, preventive and therapeutic solutions and delivery systems for more responsive, personalized medicine

Targeted markets

Infectious diseases, cancers, auto-immune diseases, orphan diseases and inflammatory disorders

Founding members

Biomérieux, Sanofi Pasteur, Merial, Biotechs
… benefiting from a dynamic SMBs environment and the presence of high level Research Centers

**Lyonbiopole’s members 2010**

**Industrial firms: 4**

- BD France
- bioMérieux
- Merial
- Sanofi Pasteur

**Knowledge & Resources centers: 13**

- CEA
- CLB
- CNRS
- EMBL
- ENS
- Fondation Mérieux
- HCL
- INRIA
- Inserm
- Institut Pasteur
- WHO
- UCBL1
- UJF

**SMBs & subsidiaries: 60**

- AAA
- ADNucleis
- Adocia
- Aguettant
- Alaxia
- Alizé Pharma
- Altrabio
- Alvedia
- Antialis
- Biotem
- Bio Elpidia
- Biomnis
- BioViron
- Charles River
- CIAT
- Conidia
- Creacell
- Cylergie-Cofely
- Cynbiose
- Cytoo
- Edap tms
- Edeliris
- Elicityl
- ERYtech Parma
- Eveon
- Eye TechCare
- Flamel Technologies
- Genostar
- genOway
- Genzyme Polyclonals
- Humalys
- IDD Biotech
- ID myk
- ImaXio
- ImmunID
- Indicia Biotechnology
- Innate Pharma
- IntuiSkin
- JLM Lab
- Kalys
- K-plan
- Khorionyx
- Latoxan
- Magnisense
- Metabolys
- Nano-H
- Netros Pharma
- Nocosium
- Novotec
- Phusis
- Poxel
- PX Therapeutics
- RCTs
- Roche Diagnostics
- Sofradim
- Synapcell
- Top Industrie
- Transgène
- Visoon
- Voxcan
Governance led by the industry

President: Philippe Archinard

BOARD (10 members)

6 companies:
bioMérieux, Sanofi Pasteur, Merial, Becton Dickinson France, PX'Therapeutics, Alizé Pharma

4 research/training centers:
INSERM, Lyon University, Mérieux Foundation, CEA

4 permanent guests:
Greater Lyon, Rhône-Alpes Region, Metro, DREAL

Technical Group (12 members)

6 companies:
bioMérieux, Sanofi Pasteur, Merial, Becton Dickinson, DiagnoSwiss, genOway

6 research/training centers:
IBS, CEA/Leti, SLC Foundation, HCL, Institut Pasteur, ENS Lyon

GD€co (9 members)

Oseo and 2 private investors:
Octalfa & Merieux Development
+ 7 companies:
Alizé pharma, ALTRA Bio, Edelris, ERYtech Pharma, Genoway, Imaxio, PX'Therapeutics

Coordination Team

Members
Partners members
General Assembly

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Support of the public authorities
Lyonbiopole’s offer for its members

1) Building collaborative R&D programs

2) Gaining access to funding sources

3) Building your strategic partnerships and growing your business

4) Gaining access to shared facilities and technological platforms

4 good reasons to join Lyonbiopole
Results & main actions

1) Building collaborative R&D programs

2) Gaining access to funding sources

69 projets
419 M€ total investment
170 M€ funding obtained from the French State (FUI), local authorities, Oseo, the European Regional Development Fund (EDFR) and EC;
400 scientific and technical jobs

Thematic & European Workshops, Training, Consortium Agreements

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Lyobiopole’s support

70 members from which 44 SMBs (+ 30% / year)

SMB Action Plan

1 / Be innovative and competitive
   50% of project leaders are SMBs. They get more than 30% of public fundings

2 / Develop the company activity at international Level
   PPTI, FABS, FTRD, FAST – Europe, Boston & SD/SF, Québec Montréal, Kansai Japon – BioSquare, BIO, BIO Japan …

3 / Support the economic activity of the company
   SMB / Pharma Meeting – Business Development

4 / Facilitate contact with private investors
   SMB/Investors meeting

5 / Strengthen competences in SMBs
   Training on IP, Consortium Agreement

6 / Be part of the Lyonbiopôle network
   GD€co, Lunch Break Partnering, Lifescience Corridor France, Alps BioCluster, BioWin, Boston et San Diego / San Francisco, Québec / Montréal Canada, Kansai Japon, Shanghai

3) Building your strategic partnerships and Growing your business
Access to shared facilities

All in one

**IDC**: 1920 sq.m of BSL Level 2 & 3

**Lyonbiopole team office**

**An Incubator to host new companies**

**acClnov**: a platform dedicated to innovation (*Project in Progress!*)

4) Gaining access to shared facilities and technological platforms
The Infectious Disease Center
The Infectious Diseases Center (IDC): The only platform of it’s kind in Europe!

Foster innovation by bridging Publics and Privates

Work in synergy with the Core Networks

Host teams working together

A Shared Facility For Collaborative R&D Projects

- Located in the Campus Charles Mérieux – Lyon Gerland
  - 1,920 sq.m / 21,000 sq.ft.
  - BSL 1&2 labs and BSL 3 platform
- €5 M of investment
- €2M of equipments for cellular and molecular Biology
Services offered by the IDC

◆ Assist the setting up of R&D projects
  ➢ Specification and launch of the project in “pre-incubation” phase
  ➢ Search for partners and building of scientific and technical networks
  ➢ Support access to public and private fundings

◆ Host project teams and provide them with
  ➢ Laboratories adapted to the study of infectious diseases (biological safety)
  ➢ Industrial-grade facilities which can handle potential collaborative projects between public and private organizations (IT security and modularity)
  ➢ An access to technical platforms and shared mutual equipments
  ➢ A team dedicated to the functioning and maintenance of the facility
High-Performance layout and Quality Environment

- Managed by François Martin assisted by 2 persons.

- 1 920 m² of laboratories:
  - Nearly all rented and able to accommodate around 84 persons
  - Allowing to gather major expertises in infectious diseases and to welcome researchers from around the world.

- 7 modules will accommodate teams / projects in the IDC, with for each module:
  - 2 BSL2 laboratories
  - 1 clean laboratory
  - 1 standard laboratory.

- Mutual areas organized with:
  - A BSL3 platform containing 3 BSL3 laboratories and 2 BSL2 laboratories, which the teams will be able to punctually rent according to their work.
  - A -80 °C deep freezer room …
  - A specific laboratory fitted with a scintillation counter
  - An informatic bunker
  - A wash room
  - A cold room
  - A meeting room
  - Storage
  - Gas and liquid nitrogen premises,
  - Waste premises…

... and a cafeteria!
€ 5 million euro of investment for construction and development of the platform, financed by the building’s owner and covered by a renting guarantee of Greater Lyon over the period of amortization.

€ 2 million of equipments for cellular and molecular biology laboratories, funded by the European Union with the European Regional Development Fund (ERDF): 40% of eligible costs, managed by the Rhône-Alpes Region, with the expertise of Inserm.
The rules: How to join the IDC?

◆ Rent a module for a minimum of 3 years, renewable once:
  – Be a member of Lyonbiopole!
  – Develop R&D projects linked to the technological strategy of Lyonbiopole in the diagnostic, vaccine and new therapeutics fields (human or animal)
  – Develop its project in the Infectious Disease Center for at least 3 years

◆ Rent the BSL3 Platform for a limited period of time:
  – Priority access to hosted teams
  – Then to members of Lyonbiopole
  – Then, to any public or private organization developing a R&D project linked to the thematics of Lyonbiopole
6 R&D teams hosted, the IDC is currently full

- PX Therapeutics
  - Development and production of monoclonal antibodies

- PLATINE
  - Immunomonitoring Platform, set up by an industrial consortium (Innate Pharma, Transgene SA and ImmunID) as well as academic research labs (Inserm & Léon Bérard multidisciplinary center).

- Transgene
  - Research Program and development on candidate vaccines in the field of infectious diseases (conception design, pre-clinical evaluation, models, analysis of mechanism of action, design and organization of immunomonitoring tests)

- Inserm, Unity U851 « Immunity, Infection, Vaccination »
  - 2 therapeutic innovation programs (Hepatitis B & C and Flu) and 1 technological innovation program (vaccination et immunotherapy)

- Inserm, Unity U851/ Finovi
  - Inflammasome study, innate immune signaling pathways, during infections with intracellular bacteria

- Merieux Institute
  - New analytical tools for bacterial identification
The Incubator
Office spaces available for new companies

◆ 400 sq.m of office spaces
  ◆ 2 shared meeting/conference rooms
  ◆ 4 offices already rented

◆ Still spaces to be laid out!
acCInov project
Perspective for Infectious Diseases Center

1st step

♦ The Infectious Diseases Center is the 1st step of a core program of dedicated real estate for biotechnology activities, launched at the beginning of Lyonbiopole

♦ Lyonbiopole opened the IDC on April 1st, 2009, which host R&D projects

2nd step

♦ Lyonbiopôle’s ambition is to provide even more services concerning dedicated real estate for biotechnology activities, by creating a platform (8,500 sq.m / 91,500 sq.ft) to host technical support centers (acCInov project)

♦ In the framework of the first call for innovative platform projects launched by the DGCIS (French Ministry of Industry) and the Caisse des Dépôts et Consignations (CDC) in October 2008, the acCInov project, coordinated by Lyonbiopole was the only innovative health biotech platform selected.

♦ The acCInov platform is scheduled to open its doors in 2013. It will provide an area composed of technical support centers run by new or emerging SMBs providing biological analysis or biomanufacturing services.
AcCInov: real estate dedicated to biotechnology activities

- Vocation: host technical support centres of bioservices SMBs (in post-incubation phase) stemmed from industry and academia

<table>
<thead>
<tr>
<th>Use</th>
<th>Activity</th>
<th>Localisation / residential itinerary</th>
<th>Owner of the real estate</th>
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</thead>
<tbody>
<tr>
<td>Research laboratories (public or private)</td>
<td>R</td>
<td>Campus or dedicated centres in Rhone-Alpes</td>
<td>Companies or academia</td>
</tr>
<tr>
<td>Laboratories for collaborative projects</td>
<td>R &amp; d</td>
<td>Gerland</td>
<td>« Dedicated real estate » developed in a public-private framework</td>
</tr>
<tr>
<td>SMB: technical support centres offering services allowances</td>
<td>r &amp; D</td>
<td>Techsud Porte des Alpes Etc…</td>
<td>Companies</td>
</tr>
<tr>
<td>Industry</td>
<td>IDC</td>
<td>acCInov Platform dedicated to innovation in biotechnologies</td>
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<td>R&amp;D and R&amp;D services</td>
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Biotechnology innovation chain

Services supplied by Lyonbiopole And its partners

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8 French BIO Competitiveness Clusters in France

- 71 Competitiveness Clusters in France.
- 7 world-leading clusters and 15 worldwide vocation
- 8 clusters are active in the healthcare field
  > Lyonbiopôle
  > Medicen Paris
  > Alsace BioValley
  > Orpheme
  > Atlantic Biotherapies
  > Nutrition, Health, Longevity
  > Cancer-bio Health
  > Prod’Innov
Facing the challenges of tomorrow’s healthcare
> Bio Pharmaceuticals: from chemistry and genes towards drugs
> Medical Technologies: medical and surgical devices, imaging and robotics

Building a healthcare shield
To fight infectious diseases
> Diagnostic, vaccines & new therapies, Systems

A unique and broad approach throughout the continuum of Cancer
> Prevention, diagnostic, treatment

Cooperation Agreements with
> Boston, Massachussets, USA
> Québec, Canada
> Kansai, Japan

LCF represents more than 1,200 companies involving > 80,000 jobs