Alsace BioValley :

Biocluster as a tool for economical development by innovation

Alsace :
unique substrate & geographical situation

A French area, in a unique trinational environment, dedicated to innovation in Life Sciences!

For the trinational area :

- **50 000** employees
- **600** companies (350 Pharma Biotech / 250 Medical devices)
- **30** technological platforms for scientists

France + Germany + Switzerland in the top 4 of European states producing drugs

Alsace BioValley is coordinating the **trinational biocluster BioValley** (France, Germany, Switzerland)

BIOVALLEY
The Life Sciences Network

Membre de BIOVALLEY

LES PÔLES DE COMPÉTITIVITÉ

Alsace in Life Sciences
key actors …

Roche
NOVARTIS
sanofi aventis
Lilly
transgene
Johnson & Johnson
octapharma
Laboratoires PHARMASTER
PhenoPro
DUPONT
BRUKER
CAPSUGEL

Alsace in Health & Life Sciences

Leader in fundamental & applied research

- **Alsace scientific production - measured by impact factor – ranks :**

No 1 in fundamental biology

No 1 in applied biology

No 1 in Chemistry

No 2 in engineering sciences

Pr. Lehn

Nobel Prize in Chemistry 1987

Director & Founder of ISIS

ISIS

Pr. Hoffmann

Nobel Prize in Medicine 2011

CNRS Gold Award 2011

Pr. Chambon

Lasker Prize

Founder of IGBMC and ICS

IGBMC

Pr. Marescaux

MD, Hon.FRCS, FACS

Professor of digestive surgery

President of IRCAD

ircad

A critical number : 400 teams throughout the drug development value chain

For the trinational area :

- **15 000** scientists
- **100 000** students
- **10** universities and institutes dedicated to Life Sciences

France since 2004
cluster policy to be more attractive
Some words …

The French cluster policy aims at

Identifying high-potential clusters and focus public aids on them

- avoiding scattering of public subsidies

Strengthening the link between research & industry

- promoting industry-driven research programs
- developing the "triple helix relationship" between firms, research centres and higher education institutions

Developing a full ecosystem

- education, private financing (business angels, VC…) , IP management, entrepreneurship, international development, …

French competitiveness clusters are:

- a combination **of companies, higher education centres and research units**
- within **a geographic area**
- sharing a **common strategy** aimed at generating synergies and leader positions **centred on co-operative R&D projects** between companies and public research laboratories
- in order to reach the **critical mass** needed for international competitiveness and visibility in targeted technological fields,
- with **dedicated governance** and **public oversight** bodies

What is Alsace BioValley?

One of the three "World Class Competitiveness Cluster"

in Health labelized by French Government, along with Paris and Lyon

Competitiveness cluster:

- non-for-profit association
- publically funded
- aiming at developing life science & health industry in Alsace

Exclusive access to dedicated 1,5B°€ funding for:

- collaborative R&D programs between public & private key actors
  - ➢ **over 150M°€ of programs funded in 5 years interfacing life sciences and engineering sciences**
- technology platforms & shared research infrastructures developed through Public-Private Partnerships, to provide services to industry and academy

Role of biocluster

To generate R&D collaborative public/private projects

- by supporting projects industry-oriented
- by selecting them with rigorous criteria (label)
- by looking for funding with governmental and local authorities

To induce local dynamism

- by structuring local activities in Life Sciences
- by networking and coordinating key actors

Alsace BioValley Cluster
The gateway to biobusiness development in Europe!

- The Alsace BioValley cluster brings together, in Alsace region, in the heart of Europe, **all life sciences & healthcare players** (companies, research centres, training organisations and universities)

- One goal: **boosting therapeutic innovations and create jobs!**

- Alsace BioValley spans **two main domains**:

Bio Pharmaceuticals:
from chemistry and genes toward new drugs

Medical Technologies:
Medical and surgical devices, imaging and robotics

Alsace BioValley
is one of the three French **worldwide competitiveness cluster officially acknowledged by the French government** with the label «Healthcare»

Alsace BioValley is the coordinator of BioValley, **one of the largest life science clusters in Europe**, covering France, Germany and Switzerland
> *www.biovalley.com*

Membre de

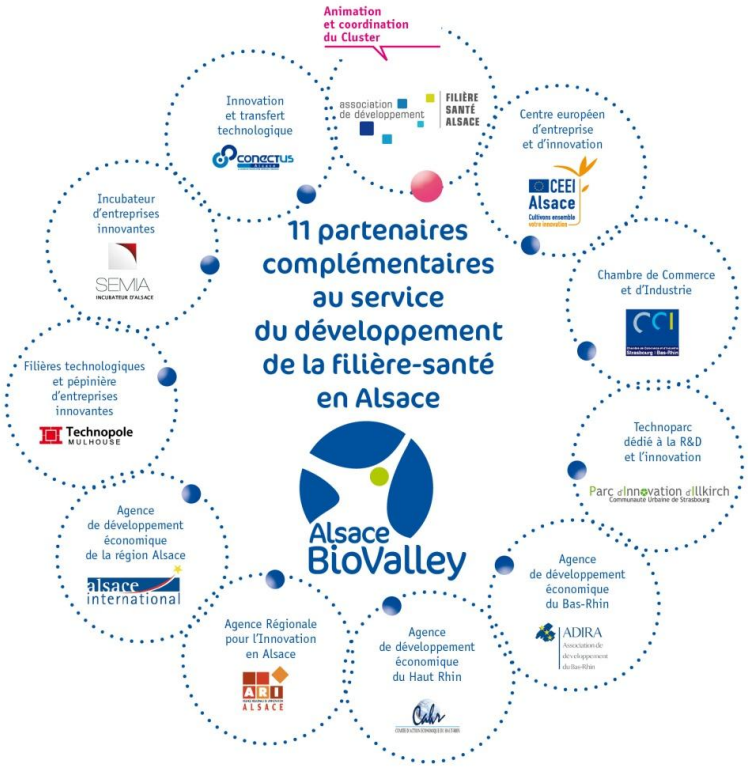
Integration within local eco-system

Coordination of all actors

- incubator, agencies for market or for development, TTO
- major implication of university and of hospital

Elaboration of a common strategy and action plans

- distinct but complementary competencies
- a share responsibility face to investors



A clear strategy

Strengthen actors competitiveness *via* different services:

- support to **R&D collaborative projects**
- representation of companies in BioEvents
- matchmaking
- economical intelligence, …

Reinforce the competitiveness and attractiveness of Alsace, by developing:

- **technological platforms** for public, but also private, research
- **new trainings**, to answer specific local needs
- **structures, linked to research and innovation**
- **investor networks**, to facilitate financing support for companies at different steps of their growth

Improve the international visibility:

- reach the **critical mass** needed for international competitiveness and visibility in targeted technological fields
- establish partnering with other bioclusters

10 years objectives
3 key indicators!

OVER 10 YEARS	AFTER 5 YEARS
• **5 000** jobs created	• over **2 200** direct & indirect jobs created
• **Doubling** of PPPs	• Increase of **60%**
• **90** companies created	• **46** companies created or in incubation

As illustration:
some concrete examples of collaborative PP projects …

"Anubis" project > Surgical and Medical Imaging and Robotics

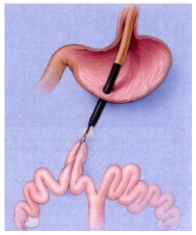
- **Subject:**

The objective pursued by the ANUBIS project is to develop transluminal surgery, a surgery which implies that the surgicalaction is performed on organs via natural orifices such as the stomach (transgastric) or the vagina (transvaginal). Thus the patient will neither have visible scars nor pain - possible risks of post-surgery complications will also be reduced. This development led to the creation of new surgical tools according to two major lines: mechanical tools directly controlled by the surgeon and robotised tools. The project also led to the development of a dedicated surgical training, taught at IRCAD, which is necessaryto learn this new surgical technique.

RESULT 1 I **World first in Surgery**

RESULT 2 I **New generation of endoscope**

RESULT 3 I **Start-up created**



Ambitions

To position France and Alsace as world leaders in the field of **transluminal surgery** by developing new **surgical tools** associated to high-level training.

Total budget:
7.09 M€
Grants:
1.79 M€
Funding partners:
DGCIS

PARTNERS

Coordinator:

ircad

Partners:

LSIIT

STORZ KARL STORZ – ENDOSKOPE THE DIAMOND STANDARD

"Dscreen" project > Innovative technologies for drug development

• **Subject:** The aim of dScreen is to develop a novel system for high throughput screening for drug discovery, based on digital microfluidics. In concrete terms, aqueous droplets are dispersed in a carrier oil within a microfluidic system and each droplet functions as an independent microreactor. Compared to conventional screening techniques, volumes can be reduced by a factor of 103 to 106, and the throughput can be increased by a factor of 104.
The partnership is compact and fully complementary, between the technology developer (ULP-CNRS), the equipment specialist (RainDance Technologies) and the final user (sanofi-aventis)..

RESULT 1 I **Raindance Technologies chooses Strasbourg to create its European affiliate**

RESULT 2 **Technology platform to be developed for HTS screening services**

PARTNERS

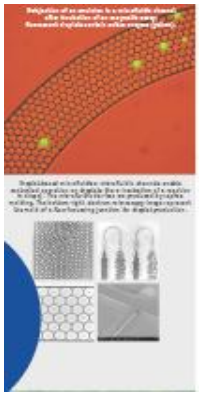
Coordinator:

Partners:

Ambitions

This project starts with a « Proof of Concept » phase for this new technology. If the results confirm our hypothesis, a second phase will follow for industrial development.

Total budget:
1.40 M€
Grants:
0.30 M€
Funding partners:
Alsace Région for ULP-CNRS
Oséo for RainDance
Sanofi-Aventis did not request public funding



NovAlix: platform to screen drug candidates in oncology

Partners

- **SME:** Novalyst (2 FTE) & Alix (2 FTE)
- **Public Res.:** IGBMC

Duration

- **3 years (2006-2008)**

Budget

- **1.627M°€** (860k€ of subsidies ≅ 53%)

Main deliverable, and followings…

- a new SME created : **NovaLix**
- **exponential development:** 63 employees at the end of 2009, 130 by now!
- **acquisition** of 2 companies :
  NMRTec in January 2010, and Graffinity in 2011.

Rhenepi: CNS simulation platform for the discovery and the validation of epilepsy treatments .

Partners

- **SME:** SynapCell, Grenoble
- **Public Res.:** CNRS, INSERM, Montpellier university, Neurosciences institute Grenoble
- **Coordinator** : Rhenovia Pharma, Mulhouse

Duration

- **3 years (2006-2008)**

Budget

- **2.161M°€** (1392k€ of subsidies ≅ 64%)

Project still ongoing yet …

Domain Therapeutics and Merck Serono Announce an Agreement to Develop Drugs for Parkinson's Disease
Merck Serono to develop Domain Therapeutics' mGluR4 allosteric modulators

Domain Therapeutics today announced that
an exclusive development and licensing agreement with Merck Serono, a division of Merck KGaA, Darmstadt, Germany, was signed to develop metabotropic glutamate receptor 4 (mGluR4) Positive Allosteric Modulator (PAM) drugs targeting Parkinson's disease and other neurodegenerative diseases.
Domain Therapeutics will contribute optimized compounds that have been developed from its proprietary chemical series. Under the terms of the agreement, the company will receive EUR 2 million in upfront payment and research funding, and is eligible for up to EUR 132 million in milestones for the first two products, as well as undisclosed royalties.

About Domain Therapeutics S.A.
Domain Therapeutics is a biopharmaceutical company located in Strasbourg, France, dedicated to the discovery and early development of small molecules targeting Gcoupled Protein Receptors (GPCRs), one of the most important classes of drug targets.
Domain Therapeutics discovers allosteric modulators for GPCRs such as lipidic and peptidic receptors, which are difficult to address. The company's pipeline is composed of new chemical entities, ranging from hits to optimized leads for leading indications such as schizophrenia, Parkinson's disease, and diabetes.
mGluR4 PAMs of Domain Therapeutics were discovered in the course of the **ARAMIS project, in association with Prestwick Chemical Inc and two academic laboratories of Strasbourg University and supported by a grant of the French Government (DGCIS), Alsace Region and Strasbourg City area. ARAMIS was one of the first collaborative projects of Alsace BioValley competitiveness cluster.**

Strasbourg, France, January 17, 2011

A unique international partnership with Quebec

CQDM (Quebec consortium for drug discovery) and Alsace BioValley have developed an annual joint program organized around thematics to leverage existing synergies between Quebec and Alsace, specially dedicated to SMEs.
R&D bilateral projects are co-labelised and co-financed by both parties.

2010

First annuel competition launched in 2010 as a pilot: one project selected and financed .

Identification of new biomarkers for neuroendocrine cancers involving INCI, a laboratory from Alsace.

2011

2 projects selected and financed involving on both side one SME and one academic laboratory.

- *Optical imaging and biosimulation platforms to accelerate CNS discovery*
- *Monitoring the signaling pathways of GPCRs in living animals*

Example / Propose services to small / medium companies:

- To find a partner and to finance a **R&D collaborative project**
- To create, to localize or to finance a company in Alsace
- To develop business at international level
- To find funds
- To become more visible
- To analyse their own market
- To perform their abilities

Example / propose new and adequate training: a formation center in BioProduction

To answer a lack in our local competencies:

- for attract the best students and professors
- for offer to local industries the specific needs of qualification

To promote training as a vector of redeployment:

- for students
- but also for unemployed persons, coming from other industries

To be funded (around 25M°€):

- by partnership between University of Alsace and University of South Carolina
- by implicating industries

EASE, a « factory school » unique in Europe dedicated to training in production in aseptic environment

- An innovative concept, dedicated to initic and continuous training
  - **4000** trainees / year
  - A response to industrial needs:
    health & MedTech, chemistry, nanotech…
  - Leveraging existing training organizations
    (University, industry union, etc.s)

= Providing the most performing environment for aseptic production operations

27M€ investment, 6M€ of which from industrial partners

They've already trusted

Thank you !

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