

Academic Platform versus Technology Based Services :

- ❑ **.From IGMBC to PhenoPro**

- ❑ **Phenotyping Business**

- ✓ Market
- ✓ forecast

- ❑ **Issues**

Academic Platform versus Technology Based Services :



IGBMC

Institute of Genetics and Molecular and Cellular Biology

leading European center of biomedical research,
devoted to

- study of higher eukaryotic genomes
- control of genetic expression
- analysis of the function of genes and proteins.

This knowledge is applied to studies of human pathologies.

Research areas

[Cell biology and development](#)

[Cancer biology](#)

[Neurobiology and genetics](#)

[Functional genomics](#)

[Structural biology and genomics](#)

Mouse Clinic institute MCI

ICS is to provide a comprehensive array of services for the "mouse" scientific community

- Genetic engineering
- Transgenic facility
- Microinjection Facility

These activities span from the **generation of new mouse models to phenotyping platforms**

All phenotyping activities are **carefully validated in several different mice strains and the procedures are standardized in close collaboration with the [EU-funded mouse phenotyping projects](#).**

Academic Platform versus Technology Based Services



1994 : IGBMC

Institute of Genetics and Molecular and Cellular Biology

2000 Mouse Clinic institute MCI

2004

Research Grants Partnering

Industrial Contracts
for Phenotyping application

Academic Platform versus Technology Based Services



1994 : IGBMC

Institute of Genetics and Molecular and Cellular Biology

2000 Mouse Clinic institute MCI

2004 GIE (IGBMC + MCI with INSERM / CNRS / ULP)

2007 PhenoPro – legal entity

Research Grants Partnering

**Industrial Contracts
for Phenotyping application**



2011 PhenoPro – Building facilities

Academic Platform versus Technology Based Services

*Phenotyping is one of the most valuable tools in the researchers arsenal to bridge **molecule screening** with **therapeutic assumptions** and in **vivo assay** .*



Phenotyping goals : Validate screening assumptions with in vivo assay implementation

Using this tool creatively with genetically modified mouse models can :

❑ **Accelerate the drug discovery process**

- Screen candidate drugs *in vivo*
- Identify and validate novel therapeutic targets
- Sustain therapeutic mechanism of action / organ driver
- Create custom panels from hundreds of assays for specific research needs.

❑ **Avoid late stage pullbacks**

- May reveal drug side effects
- Identify potential toxicity.

❑ **Limit research costs**

- Avoids the long term costs of maintaining imperfect models.
- Drives the go-nogo development plan decision tree



PhenoPro vs Mouse Clinical institute ?

PhenoPro is a MCI spinoff :



dedicated to provide high quality standard mouse model phenotyping services for projects from

- **For-profit worldwide organizations**
- **North American non-profit institutions.**

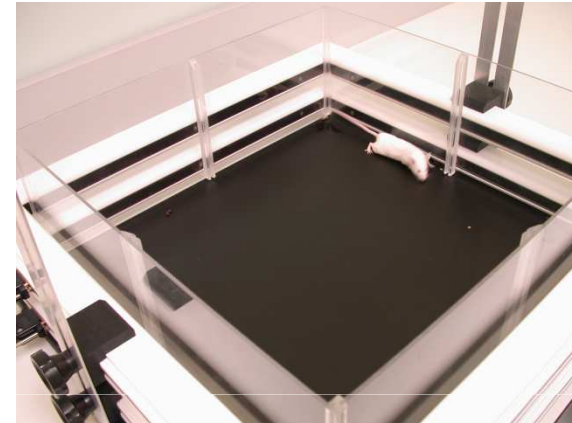
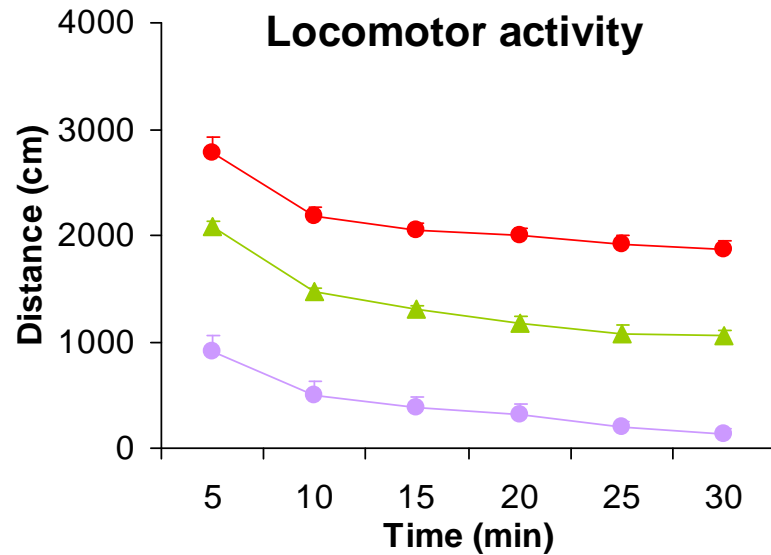
Meanwhile MCI drives and provides services for French and European Academia & institutions

PhenoPro is a legal entity to get access for partners to MCI knowhow and expertise:

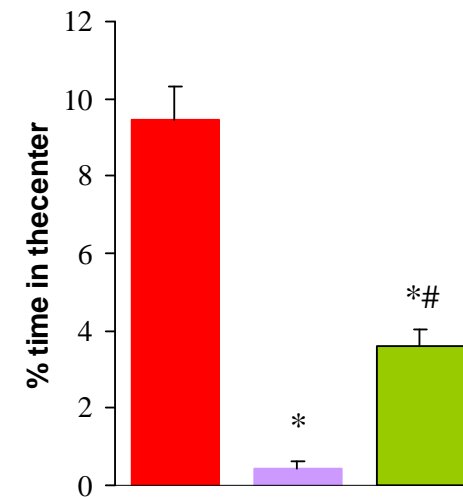
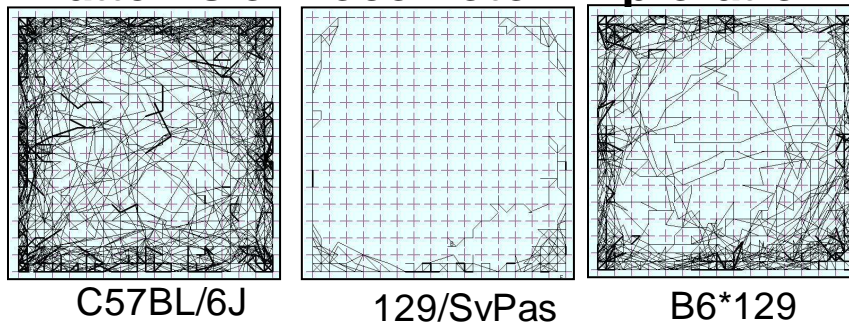
- PhenoPro manages commercial / business contracts
- MCI and IGBMC will fuel the PhenoPro innovation engine with respect to mouse model phenotyping-centered translational medicine tools and services.

PhenoPro services

Effect of the genetic background in the Openfield test



Patterns of Locomotor Exploration



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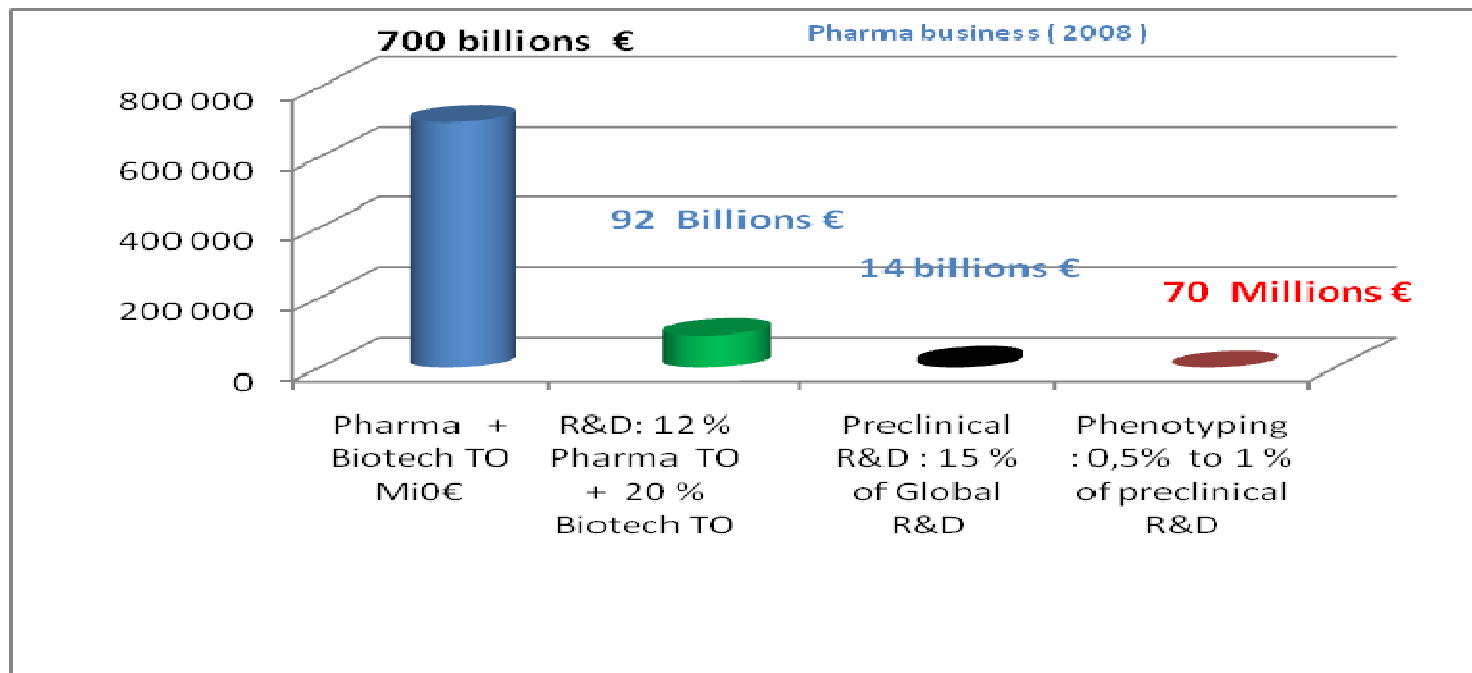
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Phenotyping Market approach

□ Pharma and Biotechnologies industries Data - 2008

Phenotyping Potential estimate :0,75% of Preclinical R&D Budget



Phenotyping Market – Targeting strategy

□ Pharma and Biotechnologies industries Data - 2008

☞ 2500 Phenotyping Projects per year - **1/3 outsourced to technology based services**

☞ **100 Customers from** Big Pharma Pharma and Biotechnologies industries

T1: Key Accounts : 14 customers : 48 % of business potential

T2: Business Target : 35 customers:18 % of business potential

T3: Opportunity Target : 50 customers:34 % of business potential

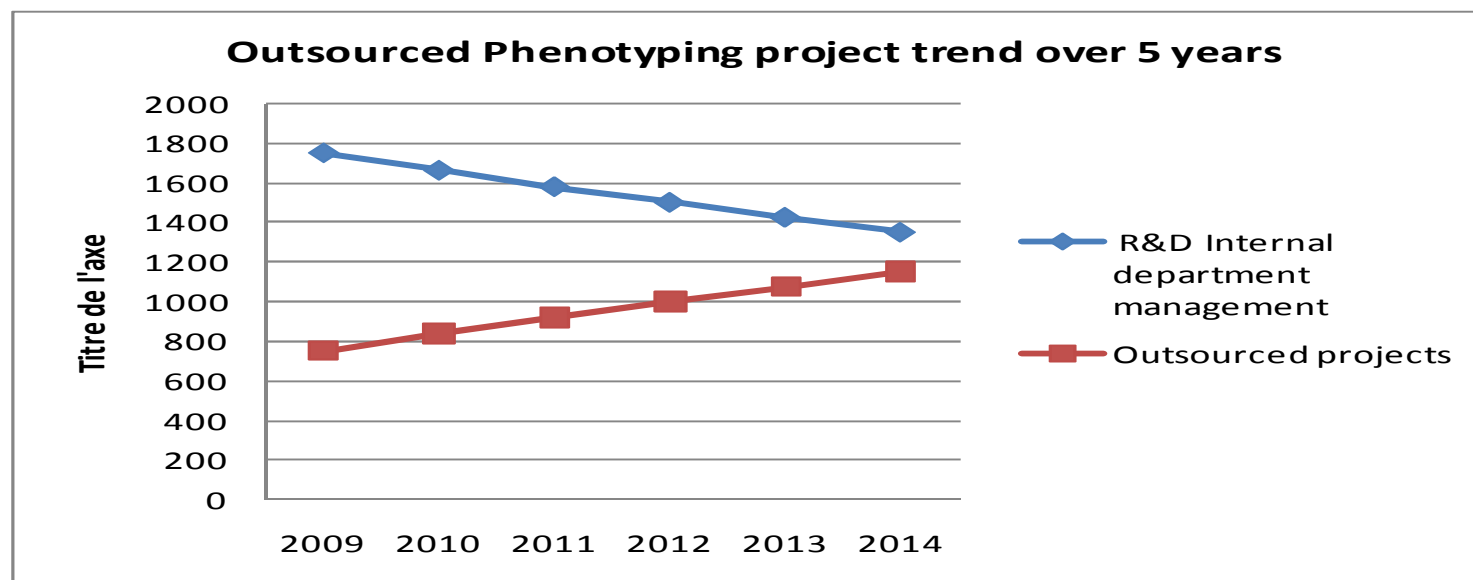


Phenotyping Market – Market Evolution 2010 - 2014

□ Estimate based on current trend from big Pharma and speed up of outsourcing (- 5 % per year)

☞ 1150 per year : 450 new Projects as a potential growth over 5 years

	2009	2010	2011	2012	2013	2014
Phenotyping projects estimate	2500	2500	2500	2500	2500	2500
R&D Internal department management decrease by -5% / year	1750	1660	1580	1500	1425	1350
Outsourced projects	750	840	920	1000	1075	1150



Phenotyping Market – Competitors overview

□ Competitors services profile

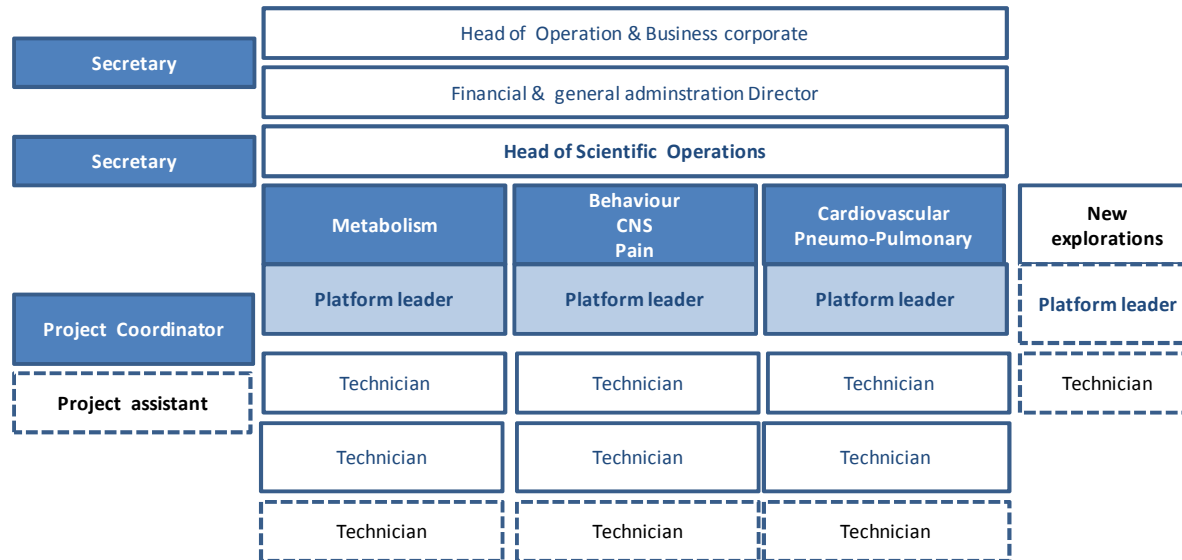
Therapeutic Field	PhenoPro	Charles Rivers	Jackson	Caliper	PsychoGenics	Autres EPFL
Cardiovascular	X	X	X	X		X
Respiratory	X	X	X			
CNS	X	X	X		X X	
Muscles / bones	X		X			
Métabolism / Diabetis	X	X	X			X
Behaviour	X		X			
Oncology		X				
Pain			X			
Inflammatory disesase		X				
Embryonic letality Reproduction eval		X				
Virology / Immunology						
Markers		X	X			
Imaging		X				
Toxicology		X				
Drug metabolism / Pharmaco K		X				

PhenoPro Budget forecast 2009 to 2010

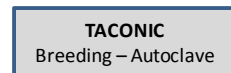
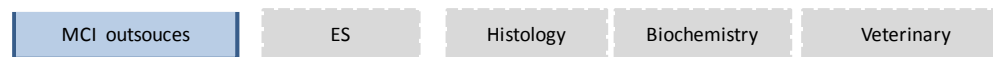
□ Phenotyping activities : 7 Mio € to 8,5 Mio : 250 Phenotyping projects per year

BUDGET Forecast PHENOPRO - K€							
	2007/2008	2009	2010	2011	2012	2013	2014
MCI Phenotyping contract	2 500	2 500	2 500				
PhenoPRO Phenotyping contracts	183	663	1 200	4 650	6 250	6 700	7 045
<i>New customers</i>				1 800	3 000	3 450	3 795
<i>Global Phenotyping TO MCI + PhenoPro</i>	2 683	3 163	3 700	4 650	6 250	6 700	7 045

□ Team : 16 to 22 FTE



Outsourced positions



Jan 2011 : 16 FTE
Janv 2014 : 22 FTE



PhenoPro services

PhenoPro subcontracts phenotyping operations

Currently and till Building facilities end of 2011

- Team Time share management
- Project Flow & resources coordination

PhenoPro's phenotyping services includes

- Project management including logistic
- Analysis and interpretation of data

- Flexibility to adjust protocol to customer demand

- MCI SOP's and Quality process management
- Access to MCI experts network

PhenoPro coordinates contract and bid process

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☐ **Issues**

Academic Platform versus Technology Based Services :

Key issues ... and room for competition between academic goals and business stakes

- ☞ **Could Business last over 5 years ?**
 - Market approach vs academic programs

- ☞ **Sustainable Knowledge transfer & business Activities (Vs Time share)**
 - Appropriate timing
 - Educated team
 - Effective organization

- ☞ **Fuel / secure MT / LT R&D initial partnership**
 - Innovation vs new services