



INFRAFRONTIER / IMPC / UAB

Industry liaison meeting

Barcelona, MAJESTIC Hotel, November 13th, 2014

Agenda

08:30 - 09:00 Registration of participants and coffee

INFRAFRONTIER / IMPC

09:00 - 09:05 Welcome address / Meeting objectives - Martin Hrabé de Angelis

09:05 - 09:25 Martin Hrabé de Angelis / INFRAFRONTIER

09:25 - 09:45 Steve Brown / International Mouse Phenotyping Consortium (IMPC)

Collaboration models of INFRAFRONTIER / IMPC partners and industry

Mouse production, phenotyping and preclinical services:

09:45 - 10:00 Alexandre Fraichard (genOway) / Access to EUCOMM-based KO mouse models

10:00 - 10:15 Tania Sorg (ICS / PhenoPro) / Mouse phenotyping services

10:15 - 10:30 Maria Denis (Biomedcode) / (Humanised) animal models of chronic inflammatory diseases, preclinical drug evaluation services

10:30 - 11:00 Coffee break

Joint development of research instrumentation:

11:00 - 11:15 Lars Breuer - TSE systems GmbH

11:15 - 11:30 Giorgio Rosati - Tecniplast

11:30 - 11:45 Lucas Noldus - Noldus Information Technology

11:45 - 12:00 David Craig - ActualAnalytics

12:00 - 12:15 Valentina Villa - Ayoxxa Biosystems GmbH

12:15 - 12:30 Amit Vasanji - ImageIQ

12:30 - 13:30 Lunch break

Requirements and use of mouse models by BioPharma

13:30 - 13:45 John Mudgett (Merck)

13:45 - 14:00 Fatima Bosch (UAB) and Eduard Valenti (ESTEVE) / Gene therapy approaches for mucopolysaccharidosis: From preclinical studies in mice to the clinic

14:00 - 14:15 European Federation of Pharmaceutical Industries and Associations (EFPIA)

14:15 - 14:30 Discussion

Partnering session

14:30 - 16:00 INFRAFRONTIER / IMPC PIs and meeting attendees

Wrap up

16:00 - 16:15 Martin Hrabé de Angelis

List of participants

Craig	David	Actual Analytics Ltd	UK
Sillito	Rowland	Actual Analytics Ltd	UK
Dobbie	Michael	Australian Phenomics Facility	Australia
Villa	Valentina	AYOXXA Biosystems	Germany
Zumbansen	Markus	AYOXXA Biosystems	Germany
Denis	Maria	Biomedcode Hellas SA	Greece
Rülicke	Thomas	Biomodels Austria	Austria
Shin	Hee-Sup	Center for Neural Science	Korea
Malissen	Marie	Centre pour Immunophénomiques	France
Zarubica	Ana	Centre pour Immunophénomiques	France
Benso	Frank	Charles River	USA
Campbell	Gerald	Charles River	USA
Morse	Iva	Charles River	USA
Dunn	Colin	Charles River - Europe	UK
Raspa	Marcello	CNR Monterotondo	Italy
Tocchini-Valentini	Glauco	CNR Monterotondo	Italy
Knudsen	Soren	Cryoport	UK
Valenti	Eduard	Esteve	Spain
Li	Tong-Rei	Fundan University	China
Fraichard	Alexandre	genOway	France
Aguilar-Pimentel	Antonio	Helmholtz Zentrum München	Germany
Becker	Lore	Helmholtz Zentrum München	Germany
Castro	Ana	Helmholtz Zentrum München	Germany
Fessele	Sabine	Helmholtz Zentrum München	Germany
Fuchs	Helmuth	Helmholtz Zentrum München	Germany
Gailus-Durner	Valerie	Helmholtz Zentrum München	Germany
Gegenfurtner	Manuela	Helmholtz Zentrum München	Germany
Hagn	Michael	Helmholtz Zentrum München	Germany
Hölter-Koch	Sabine	Helmholtz Zentrum München	Germany
Hrabe de Angelis	Martin	Helmholtz Zentrum München	Germany
Neff	Frauke	Helmholtz Zentrum München	Germany
Rozman	Jan	Helmholtz Zentrum München	Germany
Wurst	Wolfgang	Helmholtz Zentrum München	Germany
Hoover	Brett	Image-IQ	USA
Vasanji	Amit	Image-IQ	USA
Moore	Mark	IMPC	USA
Raess	Michael	INFRAFRONTIER GmbH	Germany
Bartels	Jan	InnoSer Nederland BV	Netherlands
van Roon	Marian	InnoSer Nederland BV	Netherlands

Sedlacek	Radislav	Institute for Molecular Genetics	Czech Republic
Beck	Inken	Institute for Molecular Genetics	Czech Republic
Ulfhake	Brun	Karolinska Institut	Sweden
Carlson	George	McLaughlin Research Institute	USA
Mudgett	John	MERCK	USA
Hérault	Yann	ICS Mouse Clinical Institute	France
Schmitt	Philippe	ICS Mouse Clinical Institute	France
Brown	Steve	MRC Harwell	UK
Fray	Martin	MRC Harwell	UK
Wells	Sara	MRC Harwell	UK
Gao	Xiang	Nanjing University	China
Fletcher	Colin	National Institutes of Health	USA
Mirochnitchenko	Oleg	National Institutes of Health	USA
Schloss	Jeff	National Institutes of Health	USA
Huijbers	Ivo	Netherlands Cancer Institute	Netherlands
Noldus	Lucas	Noldus Information Technology BV	Netherlands
Sorg	Tania	PhenoPro	France
Shmerling	Doron	Polygene	Switzerland
Gale	Nick	Regeneron	USA
Seoung	JeKyung	Seoul National University	Korea
Gulezian	Donna	Taconic	USA
Platt	Kenneth	Taconic	USA
Schoor	Michael	Taconic	USA
Rosati	Giorgio	Tecniplast SPA	Italy
Bernardini	Pietro	Tecniplast SPA	Italy
Braun	Bob	The Jackson Laboratory	USA
Krebs	Mark	The Jackson Laboratory	USA
McFarland	Michael	The Jackson Laboratory	USA
Svenson	Karen	The Jackson Laboratory	USA
McKerlie	Colin	Toronto Center for Phenogenomics	Canada
Porteous	David	Transnetyx, Inc.	USA
Breuer	Lars	TSE Systems	Germany
Bosch	Fatima	Universidad Autonoma Barcelona	Spain
Assam	Hisham	University of Buckingham	UK
Langlands	Kenneth	University of Buckingham	UK
Astoul	Emmanuelle	Wellcome Trust Sanger Institute	UK
Lelliott	Chris	Wellcome Trust Sanger Institute	UK
Cook	Ros	Wellcome Trust Sanger Institute	UK
Yul Seo	Kyoung	Yonsei University	Korea



1. Hotels

Gallery Hotel

Roselló, 249

08008 Barcelona

Tel: +34 93 415 99 11, +34 93 415 91 84

www.galleryhotel.com

(Map point 1)

Royal Hotel

Passeig de Gràcia 84

08008 – Barcelona

Tel: +34 937 370 010

www.royalpasseigdegraciahotel.com

(Map point 2)

2.Meeting venue

MAJESTIC Hotel & Spa Barcelona

Passeig de Gràcia, 68

08007 · Barcelona

Spain

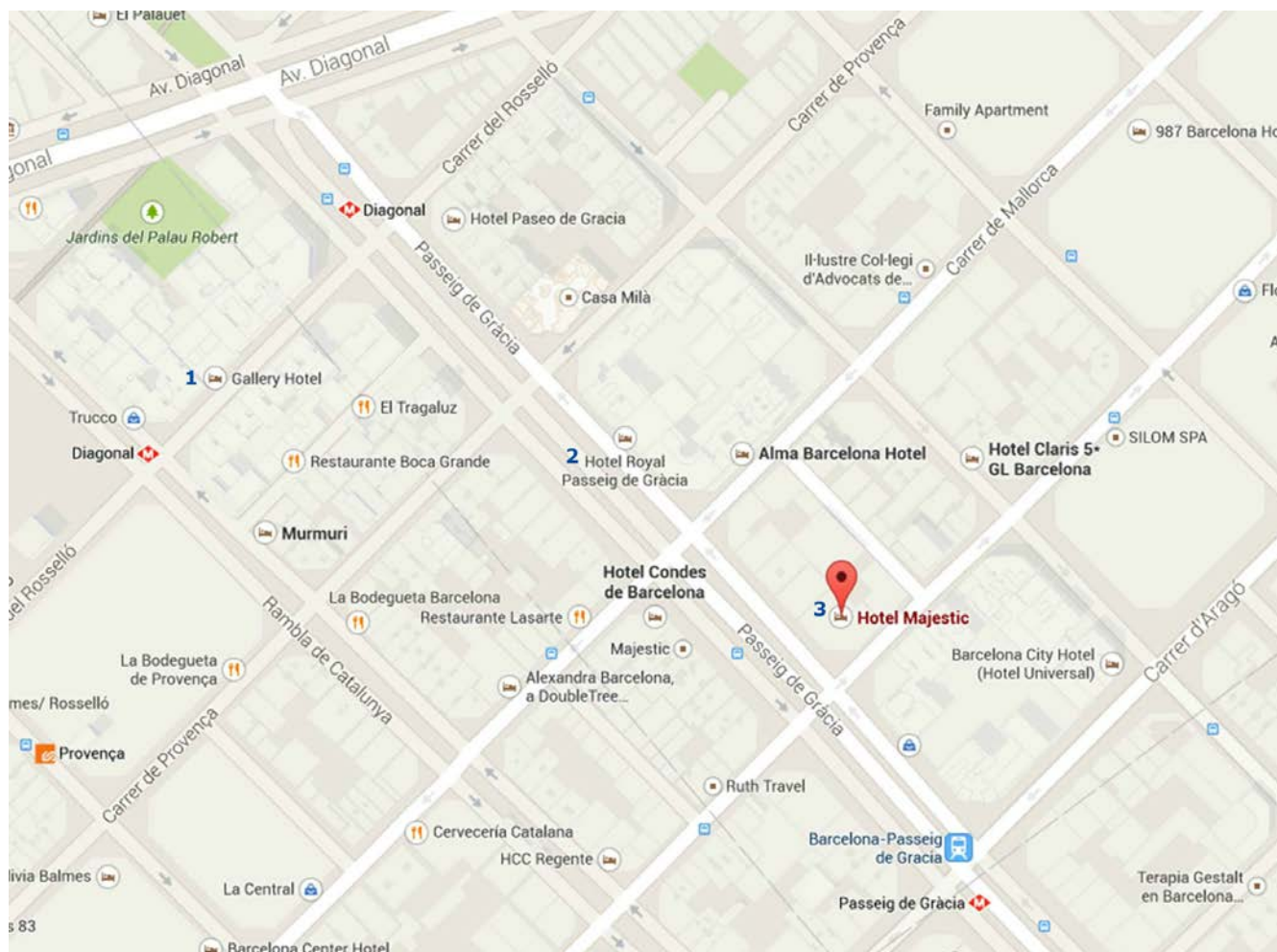
T: +34 93 488 17 17

F: +34 93 488 18 80

www.hotelmajestic.es

(Map point 3)

The INFRAFRONTIER / IMPC industry liaison workshop will take place at the **MAJESTIC Hotel**, main meeting room **Alborán**.



1 Gallery Hotel, **2** Royal Hotel, **3** INFRAFRONTIER/IMPC Industry Liaison meeting (MAJESTIC Hotel)

Both hotels are in walking distance (ca. 5-10 minutes) from the meeting venue

3. Barcelona El Prat Airport – Hotel

The best way to reach both hotels is by taxi from the Barcelona Airport, which takes about 20 minutes with an approximate cost of 30€.

Alternatively, you can take public transport:

By Train

The local train service connects the airport to Barcelona and other towns in Catalonia.

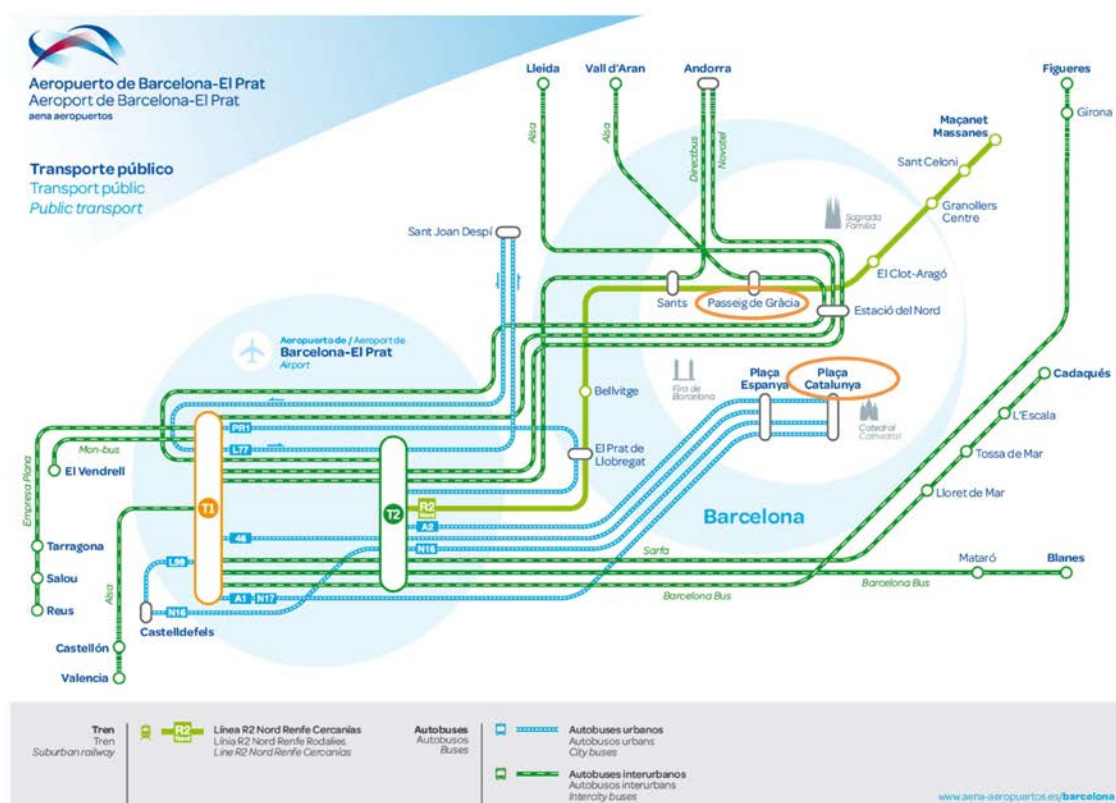
Estimated travel time: 27 minutes to Passeig de Gràcia.

By Bus

Aerobus A1: Plaça Catalunya - Airport (terminal T1)

Bus service between terminal T1 and Barcelona city centre every 5 minutes at peak times, every day of the year. In 35 minutes, stopping at strategic points in the city.

www.aena-aeropuertos.es/csee/Satellite/Aeropuerto-Barcelona/en/Page/1237554338469//Public-transport.html

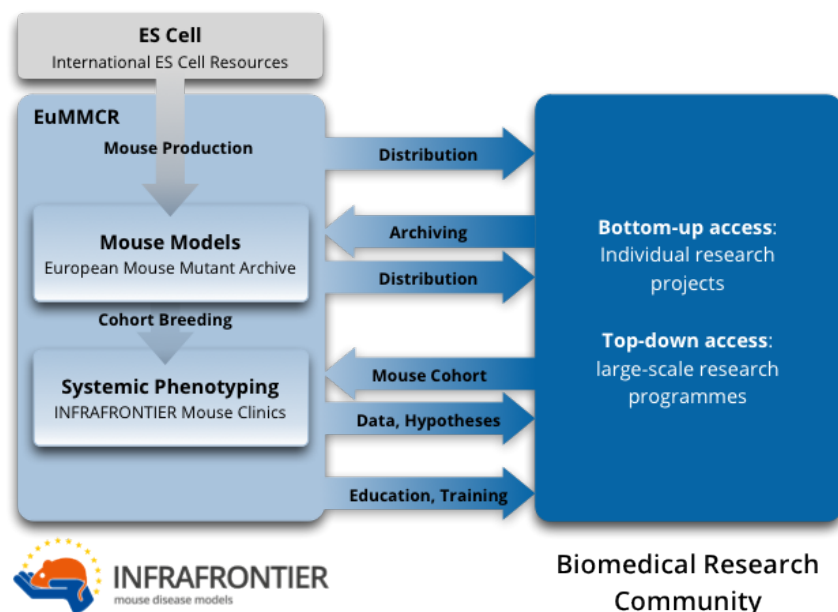


INFRAFRONTIER



The INFRAFRONTIER Research Infrastructure provides access to mouse models, data and scientific platforms and services **to study the functional role of the genome in human health and disease**, using the mouse as a model. It addresses the full range from common disease such diabetes or age-related cancers to rare diseases. The INFRAFRONTIER Research Infrastructure can be accessed **bottom-up** by individual scientists and research groups in academia and industry. It also provides **top-down** capacities for large scale global initiatives such as the **International Mouse Phenotyping Consortium (IMPC)**.

Archiving and distribution of scientifically valuable mouse strains is provided by the **European Mouse Mutant Archive (EMMA)**, one of the world leading mouse repositories. EMMA is a widely recognised and used resource in the research community, due to its high quality standards and standardised operation procedures. The **INFRAFRONTIER Mouse Clinics** provide access to whole organism, systemic analysis of genotype–phenotype interactions using cutting-edge analytical and diagnostic methodology, based on common quality standards and operation procedures.



International Mouse Phenotyping Consortium (IMPC)



Building the First Comprehensive Catalogue of a Mammalian Genome

The knockout mouse is a powerful tool for precision medicine. The biological changes associated with gene activation provides important clues to mammalian gene function. By creating and broadly phenotyping a knock out mouse strain for every gene. The IMPC is building the first truly comprehensive, functional catalogue of a mammalian genome. This large scale endeavour requires unprecedented cooperation among leading international mouse research centres. As the first IMPC phenotype data becomes available, IMPC partners are transforming our understanding of the mammalian genome.

Biological Toolkits

The IMPC is generating over 20,000 mutant mouse strains from IKMC resources and making them publicly available through established repositories. Each strain carries a flexible allele design where genes can be inactivated only in tissues of interest. With all strains on a uniform genetic background, alleles can be 'mixed and matched' to study complex genetic interactions. Working together, IMPC partners allow researchers to focus on innovative work rather than use their own resources generating mutant mouse strains.

Understanding disease

For clinical researchers who are looking for connections between gene and disease, IMPC is a gene phenotyping discovery resource that provides an unprecedented volume of high quality data. Clinicians can use IMPC data to find relevant mouse models to human disease by orthologous gene and by shared phenotypic features.

Big Phenotype Data

IMPC centers are collecting phenotype data on over 250 parameters in an unbiased manner. Data is freely available for all genes from the well studied and to the poorly characterized. Biomedical researchers can explore IMPC findings by an intuitive online portal while bioinformaticians will find highly standardized data that is interchangeable with other data types.

Charles River Laboratories
IMPC Corporate Partner & Corporate Sponsor



Products and Services

- Research Models
- Discovery Services
- Preclinical Services
- Biologics Testing Solutions
- Endotoxin Detection & Microbial Identification
- Avian Vaccine Services
- Chemicals, Agro & Vet

www.criver.com

- **Colin Dunn, Corporate Senior VP & General Manager, Charles River Laboratories, UK**
- **Frank Benso, Supervisor, Animal Research Facility, Charles River Laboratories, USA**
- **Gerald Campbell, Global Director Marketing (RMS) Charles River Laboratories, USA**
- **Iva Morse, Vice President Research Model Services, Charles River Laboratories, USA**

Taconic
IMPC Corporate Sponsor



At Taconic, we make your research goal the center of everything we do, and we go further in helping you achieve it. We start with the right **model**- even if we have to **design** it for your specific question - and we follow that with the research-ready **colonies** and streamlined licensing

Taconic offers a unique solution for biopharmaceutical and biomedical researchers: GEMs Management. Taconic's GEMs Management offering empowers researchers to use one company to help manage their genetically engineered models (GEMs) and services. Taconic can help you acquire or generate, import, license, breed, test, prepare, and distribute the GEMs you need to any location worldwide. Whether you require an off-the-shelf model or a custom generated one, Taconic can help you decide upon the most appropriate mouse or rat for your study and then do everything necessary to get that model ready for use in your research.

www.taconic.com

- **Donna Gulezian, VP Business Development (TMS) Taconic, USA**
- **Kenneth Platt, Associate Director - GEM Repository Development Taconic, USA**
- **Michael Schoor, Taconic, Germany**

Actual Analytics



Headquartered in Edinburgh, Scotland, Actual Analytics is a leading provider of behavior analysis solutions for scientific studies. We are committed to creating high quality, accurate and easy to use solutions that our customers can depend upon.

Products

ActualTrack™

ActualTrack™ is an easy-to-use, affordable tool to automatically track the movement of lab animals from video. Designed for use with: Rodents, Drosophila and Zebrafish out the box.

ActualTrack™ gives accurate, consistent results with detailed locomotor and zonal statistical output in Microsoft Excel™ and .csv formats.

Designed for common behavioral paradigms including: Water Maze, Plus Maze, Open Field, Novel Object and X/Y/O-Maze with easy-to-define zone entry / exit criteria.

ActualHCA™

Rodent behaviour analysis plays a vital role in drug discovery, from the development of disease models through to safety pharmacology. Through the NC3Rs CRACK-IT Challenges (in partnership with Astra Zeneca, MRC Harwell, University of Strathclyde, University of Edinburgh and The NC3Rs, we have developed an innovative home cage analysis system that provides 24/7 monitoring of rodent behaviours in a group-housed environment that is beneficial from both data and welfare perspectives.

www.actualanalytics.com

- **David Craig, CEO Actual Analytics, UK**
- **Rowland Sillito, Scientist Actual Analytics, UK**

Ayoxxa Biosystems



AYOXXA Biosystems, an international biotech company based in Cologne, Germany and Singapore has developed a proprietary technology platform for multiplexed protein analysis. Core to the cutting-edge system is a bead-based technology that yields 10,000-fold more data points than a standard ELISA. Together with the lowest sample volume in multiplex protein analysis history, very good accuracy and data robustness, high data throughput and readout with equipment existing already in your lab, AYOXXA will innovate biomedical research, pharmacological screening and preclinical diagnostics development. Its „in-situ encoded bead array“ (IEBA) technology allows industry and university users to realize the full potential of proteomics reliably as well as resource and cost efficiently.

Products

In-situ encoded bead array (IEBA)

IEBA is a novel and innovative multiplex protein assay based on antibody coated microspheres on a planar surface (chip). During chip **production**, single bead families carrying capture antibodies specific for different target proteins are sequentially deposited, creating a unique pattern for every well. For data analysis the bead coordinates are provided to the user as a decoding table alongside the carrier. The **assay** itself follows the sandwich ELISA principle with a read-out based on a fluorescent reporter introduced at the final step of the assay. Following imaging using fluorescence microscope technology the AYOXXA **analysis** software allocates every fluorescent signal to its respective antibody coated microsphere returning a tailor-made report to the customer.



www.ayoxxa.com

- Markus Zumbansen, VP Research & Development Ayoxxa Biosystems, Germany
- Valentina Villa, Scientist Ayoxxa Biosystems, Germany

Biomedcode



Biomedcode is a Contract Research Organisation (CRO), founded in 2006 as a spin-off company of the **Biomedical Sciences Research Center "Alexander Fleming"**. The establishment of Biomedcode was the result of the long lasting expertise of Fleming researchers in successfully generating transgenic mouse models that develop symptoms of rheumatoid arthritis, cachexia, and inflammatory bowel disease.

Biomedcode generates, owns and operates unique humanized transgenic mouse models mimicking **Rheumatoid Arthritis, Intestinal Inflammation, Psoriasis, Multiple Sclerosis** and other diseases. In addition to its proprietary humanized mouse models Biomedcode also offers a number of standard induced models of disease such as **CAIA, EAE, induced colitis**, and others. Moreover, Biomedcode employs state of the art technological platforms for comprehensive phenotyping of disease progression and response to therapy.

Our mission is to provide a customer and quality-oriented, process-driven approach tailored to meet individual customer outsourcing needs.

www.biomedcode.com

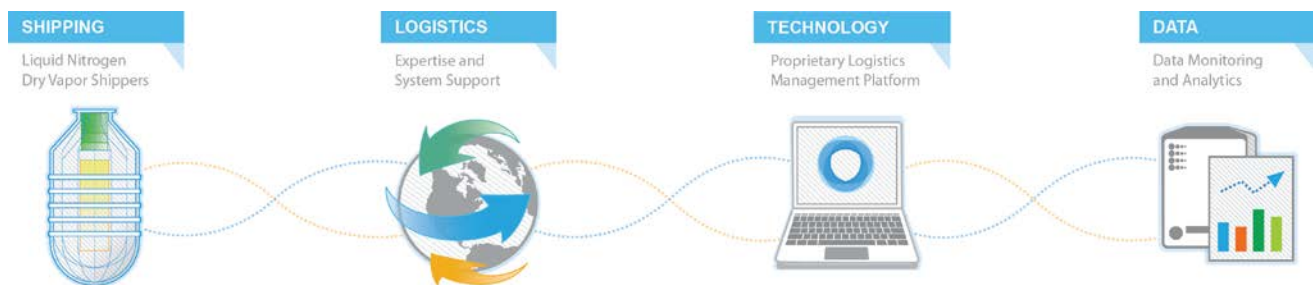
- **Maria Denis, CEO Biomedcode, Greece**

Cryoport



The Cryoport Solution replaces dry ice, virtually eliminating the risk of cell degradation during frozen transportation. We use custom-built liquid nitrogen dry vapor shippers to maintain stable temperatures. We are experts in deep-frozen shipping for biological materials with the most advanced Logistics Management Platform in the industry.

Cryoport provides a complete global frozen shipping service.



www.cryoport.com

- **Soren Holm Knudsen, Commercial Director Cryoport, UK**

ESTEVE



ESTEVE focuses mainly on two main health-related fields: the pharmaceutical field and the active pharmaceutical ingredient field, or fine chemistry. In the pharmaceutical field, ESTEVE has activities in research, new drug development and marketing, and innovative formulations.

We are present in the innovative prescription, generic, OTC, veterinary and dermatopharmacy markets, the latter through ISDIN, a 50/50 joint-venture with the Group Puig.

Through strategic alliances we also have activity in the segment of home respiratory therapy (Esteve Teijin Healthcare, with the Japanese company Teijin Pharma).

In the chemical field, through Esteve Química, we focus mainly on the development of new processes, as well as on the production and international commercialization of active pharmaceutical ingredients.

www.esteve.es

- **Eduard Valenti, Regulatory Affairs Director & Pharmaceutical Quality Head, ESTEVE, Spain**

IMAGE-IQ



ImageIQ is an ICRO (Imaging Contract Research Organization) and software developer, for customized imaging, analysis and software

Services

Clinical Trails

We are experts in all facets of imaging in clinical trials, from imaging modality selection, protocol development, site training, site qualification to integration of quantitative customized image analysis.

Pre clinical Research

Using sophisticated customized quantitative techniques, analysis and software, ImageIQ can enable you to:

- Ensure the quantification and consistency of your data
- Have impenetrable research documentation for the FDA and/or publication
- Reduce the costs and time of manual qualitative research
- Reduce time to clinical trial

Product Software Development for Medical Device Research

With a vast array of completely customizable image processing libraries, algorithms, techniques and source code, we create custom standalone or embeddable analytics software that give your objective and quantitative data “heads up” displays that provide context, awareness, and far more information than just what the user “sees” in an image, photo or video.

Operation Software Development

leveraging imaging and workflow automation expertise, ImageIQ develops custom software that automates, optimizes and improves internal processes to remove time and cost, and add value.

www.image-iq.com

- **Brett Hoover, VP Sales & Marketing Image-IQ, USA**
- **Amit Vasanji, Chief Technology Officer Image-IQ, USA**

InnoSer



InnoSer's services are not just the maintenance and breeding of your research models for your experiments. We offer you cryopreservation and sanitation services. InnoSer also offers study-ready induced animal models. For example: special diet fed animals or instrumented animals ready to be included in your experiments, in short 'pre-conditioned' animals. We can also provide you with just the biological samples you require for your research.

Services

- Colony Management
- Sanitation
- Cryopreservation
- Pathology
- GEMM Generation

www.innoser.nl

- **Jan Bartels, Managing Director InnoSer, The Netherlands**
- **Marian van Roon, Scientist, Innoser, The Netherlands**

genOway



genOway is a public company focused on the development of custom genetically-modified (GM) mouse models. In addition to providing highly advanced technological solutions for transgenesis and mouse model design, genOway offers interactive scientific consulting at every step of the process. genOway considers its interactive consulting an essential part of the design process. genOway utilizes its consultation services to better understand your specific research needs, objectives and goals as well as to help enhance the reliability of your *in vivo* studies.

Services

- ES Cell-Based Models
- CRISPR/Cas 9 - based models
- EUCOMM - based models
- Phenotyping

Technologies

- Humanized & Knockins Models
- CRISPR/Cas9 Nuclease System for KO
- FLEEx: Inducible Point Mutation
- TET System: Controlled Gene Expression
- IRES: Co-Expression of Transgenes and/or Generation of Reporter Models
- Quick Knockin: Permissive HPRT or Rosa26 Loci
- RMCE: Recombinase-Mediated Cassette Exchange

www.genoway.com

- **Alexandre Fraichard, CEO genOway, France**

MERCK



Our Vision

To make a difference in the lives of people globally through our innovative medicines, vaccines, biologic therapies, consumer care and animal health products. We aspire to be the best healthcare company in the world and are dedicated to providing leading innovations and solutions for tomorrow.

Our Mission

To discover, develop and provide innovative products and services that save and improve lives around the world.

Products

- Vaccines
- Oncology
- Consumer products
- Animal health
- Product patents

www.merck.com

- **John Mudgett, External In Vivo Pharmacology MERCK, USA**

Noldus

Noldus

Noldus Information Technology develops and delivers innovative software and hardware solutions and services for the measurement and analysis of behavior, and the design of interactive systems.

Products

Software

- **EthoVision XT** Video tracking software for automated behavioral research
- **DanioScope** Video analysis software tool to investigate a scope of zebrafish embryo and larvae parameters
- **The Observer XT** Behavioral coding and analysis software
- **Media Recorder** Software for synchronous recording of video
- **ErasmusLader** Assessment of motor performance and motor learning
- **Theme** Software to unravel the time structure of behavior

Systems

- **DanioVSION** Complete solutions for high throughput zebrafish larvae tracking
- **CatWalk XT** Complete solution for advanced gait analysis
- **PhenoTyper** Instrumented cage for uninterrupted behavioral testing
- **Automated Tube Test** Complete system to investigate social dominance and social hierarchies
- **Coy MCS** Mechanical Conflict-Avoidance System

www.noldus.com

- **Lucas Noldus, CEO Noldus Technology, The Netherlands**

PhenoPro



Our mission is to ensure you to work with the most adapted, highly physiologically relevant animal models for your research program. To answer your questions and meet your goals, Phenopro provides you with functional exploration, genetic validation of your mouse models and in vivo preclinical drug screening studies.

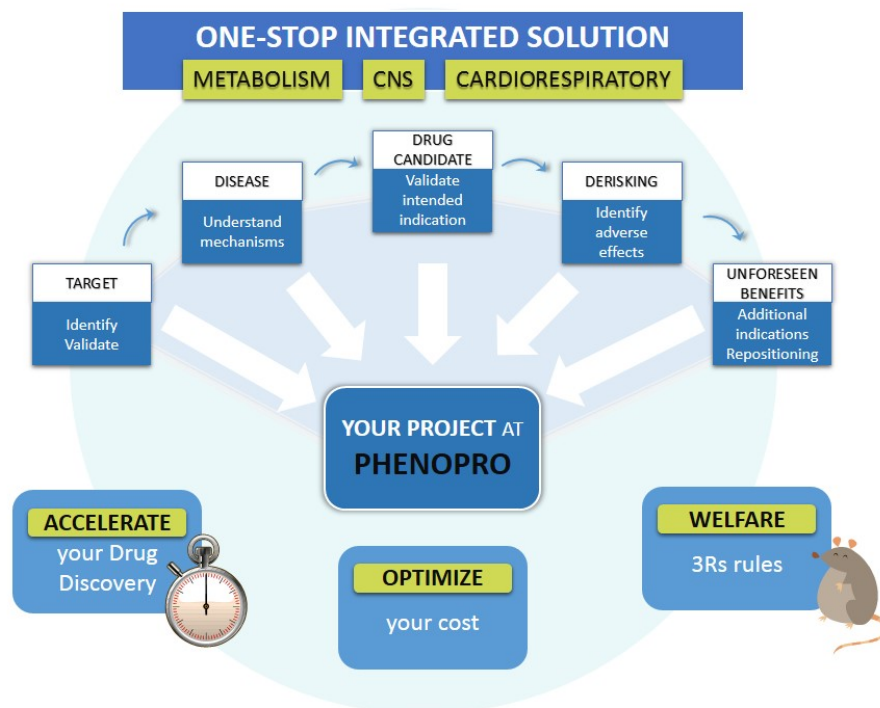
Services

Clinical Phenotyping

We provide services in Clinical Phenotyping by addressing most of the physiological systems and covering most of the **therapeutic areas**, by using genetically engineered mouse models, or spontaneous or induced pathological models.

Gene expression testing

We provide services **to validate your model** and offer a comprehensive nucleic acid analysis of genetically engineered mouse models.



www.phenopro.fr

- Tania Sorg, Head of Scientific Operations PhenoPro, France

PolyGene is a privately held research institute offering state-of-the-art transgenic animal model development services to a world-wide research clientele. PolyGene has a fully functional production site for the establishment of transgenic and knockout mouse lines, and also offers co-development opportunities in model building, including also rat and rabbit models.

Services

PolyGene ESLIF

PolyGene AG is selling its germline tested LIF for the generation of highly chimeric mice.

Speed Congenics

PolyGene offers a tetranucleotide microsatellite-based screening of the mouse genetic background, aimed at users of genetically modified mice and mouse breeders. The screening is achieved using sets of 96 markers evenly dispersed in a distance of 20 cM (\approx 20-40 Mbases) over the 19 autosomal chromosomes.

Inducible Expression systems

Two distinct, antibiotic-driven (i.e. Erythromycin- or Pristinamycin-inducible) transgene expression systems for your inducible transgenic mouse model project are available at PolyGene.

Gene Targeting

PolyGene provides a complete range of gene targeting services in mice. This includes the full scope of target modification to generate constitutive or conditional knockouts, knock-ins of mutant alleles, or humanized genes, or marker genes. PolyGene is specialized in difficult-to-achieve targetings, such as the manipulation of repetitive genes, large targets, or unusual modifications.

Transgenic Animals

PolyGene is offering services for the development of comprehensive projects, as well as milestone steps for partial services (e.g., microinjection services, or vector construction). Designed gene(s) or BACs are injected into the pronucleus of the oocyte and integrate randomly into the genome.

www.polygene.ch

- **Doron Shmerling, Managing Director Polygene, Switzerland**

Transnetyx



Transnetyx is a molecular diagnostics company based in Memphis, Tennessee that has built a reputation for accuracy and efficiency in the world of bio-scientific research by launching the world's first fully automated genotyping system in 2004 for transgenic, knockout and knock in mouse lines.

Transnetyx provides basic researchers with essential genetic testing involving mutant mouse lines and other rodent models.

Transnetyx ensures accurate, reliable and cost-effective testing with fast results utilizing real time PCR. With more than 50 million (and counting) successful reactions, Transnetyx eliminates the tedious process of extracting and testing DNA. Utilizing our automated process not only replaces the need for supplies and reagents, but also eliminates the possibility for human error or contamination.

Services

- Automated Genotyping
- Institutional Testing Service
- Assay Development

www.transnetyx.com

- **David Porteous, European Sales Manager Transnetyx, UK**

Regeneron Pharmaceuticals Inc.



Science

Using platform technologies created by Regeneron scientists, we have rapidly discovered and validated new targets and developed new product candidates.

- VelociSuite® is a suite of genetic technologies offered by Regeneron that includes genetically modified cells; genetically modified animals; and biopharmaceuticals, including human antibodies. The suite of technologies also includes genetic engineering services for the rapid production of vectors; for the deletion and modification of genes; and for the production of genetically modified animals using, for example, embryonic stem cells and embryo manipulation technology.
- VelociGene® is a system for efficiently manipulating the mouse genome to investigate the function of unknown genes and validate clinical targets
- VelociMouse® technology offers time and cost-saving advantages over other technologies used to create genetically modified mice for use as preclinical disease models.
- VelocImmune® is a transgenic mouse technology that can generate a diversity of fully-human monoclonal antibodies to address clinically relevant targets of therapeutic interest.
- VelociMab® is a platform for the rapid screening of antibodies and rapid generation of expression cell lines for antibodies and fusion proteins we call Traps.
- Trap is a fusion-protein technology that creates high affinity antibody-like molecules that trap specific extracellular signaling molecules such as cytokines and growth factors, blocking the activity of such molecules in certain disease settings

Pipelines

- Cardiovascular and Metabolism
- Inflammation
- Oncology
- Ophthalmology
- Pain

www.regeneron.com

- **Nick Gale, Senior Director Therapeutic Target Discovery, Regeneron, USA**

Tecniplast



Tecniplast is an international company dedicated to the production and distribution of housing and related equipment to laboratory animals

Products

- Housing - Cages
- Laminar Flow Technology
- Analysis
- Biocontainment and Bioexclusion
- Vivatronics
- Washing Systems
- Washing and Automation
- Logistics
- Decontamination chamber

[www. tecniplast.it](http://www.tecniplast.it)

- **Pietro Bernardini, Director Tecniplast, Italy**
- **Giorgio Rosati, Product Manager VIVATRONICS Tecniplast, Italy**

TSE systems



The company's focus is on providing the total customer solution, with modular designs of integrated hardware and software platforms for laboratory animal research such as neuroscience, phenotyping, drug screening and toxicology. In more than 125 years of tradition and experience, TSE Systems has acquired a vast portfolio of technologies and core competencies. Moreover, TSE Systems has highly qualified specialists together with first-class facilities for mechanical and electronic design as well as for production and software development in accordance with quality assurance systems such as ISO 9000 and customer-adapted GLP requirements. This is one of the main reasons why TSE Systems has developed to become the leading supplier of high-quality phenotyping systems – both classical and automated high-throughput systems for small laboratory animals. The objective of the TSE project work is the **Metabolic PhenoCage (MPC)** which, in addition to recording "classical" metabolic parameters, also includes the automatic separation and quantification of urine and feces.

www.tse-systems.com

- **Lars Breuer, Sales Director TSE Systems, Germany**



- **INFRAFRONTIER is the European research infrastructure for phenotyping and archiving of model mammalian genomes**
- **More than 4.000 mouse strains in the European Mouse Mutant Archive (EMMA)**
- **Archiving by EMMA: Free of charge for depositor; IP stays with depositor; world wide distribution**
- **Models of rare and common diseases**
- **Part of the International Mouse Phenotyping Consortium (IMPC) effort to create the first catalogue of mammalian gene function**





Deposit mice

Free of charge archiving of mutant mouse strains from all over the world to facilitate their distribution



Order mice

Over 4000 mutant mice lines carrying targeted, transgenic induced and other types of mutation, from individual researchers, major collections and large-scale projects



NKI GEMM-ESC archive

Rapid target gene validation in complex cancer mouse models



Mouse production & phenotyping

Production of heterozygous mice carrying targeted gene allele of choice from the corresponding validated gene targeted ES cell clone & comprehensive first-line phenotyping of a mutant line with appropriate control



Axenic service

Generation and maintenance of animals in germ-free or axenic environment and with the possibility to restore specific components of micro flora



Training & Consulting

Hand-on cryopreservation courses, training in first-line mouse phenotyping, consulting on design and construction of animal facilities

INFRAFRONTIER Partners

BSRC Alexander Fleming, Vari-Athens, Greece

www.fleming.gr

CERBM-GIE, Institut Clinique de la Souris, Strasbourg, France

www.ics-mci.fr

CIPHE-INSERM, Marseille, France

www.ciml.univ-mrs.fr

CNR, Monterotondo, Italy

www.cnr.it

CNRS, France

www.transgenose.cnrs-orleans.fr

National Centre for Biotechnology, CSIC, Madrid, Spain

www.cnb.csic.es

EMBL-EBI, Hinxton, United Kingdom

www.ebi.ac.uk

Helmholtz Center for Infection Research, Braunschweig, Germany

www.helmholtz-hzi.de

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