FORUM DRUG DELIVERY

1st and 2nd of December 2010

Parc Científic de Barcelona

Date: December the 1st and 2nd of 2010

Place: **Scientific Park of Barcelona - Towers R+I+D**
Auditorium in Hall tower D (ground floor)
4, Baldiri Reixach street
08029 Barcelona

DECEMBER, 1st

12.00- 12.20 Registry

12.20- 12.35 Welcome
Dr. Fernando Albericio, Scientific Director, Scientific Park of Barcelona
Dr. Ramon Mangues, Hospital de la Santa Creu i Sant Pau, Barcelona.
Dr. Josep Samitier, Deputy Scientific Director, CIBER-BBN.

12.35 - 13.20 Importance of drug delivery technologies in biomedicine for the Future competitiveness of European industries.
Dr. Ruth Duncan, Professor of Cell Biology and Drug Delivery, Welsh School of Pharmacy, and Member of the CIBER-BBN External Advisory Board

13.20 – 13:30 Practical issues for the development of the forum
Dr. Fernando Santos, Technology Transfer Manager

13.30 - 14.30 Lunch

14.30 – 17:00 CIBER BBN groups **flash presentations** (5 minutes each).
At the end of session will take note of the meetings requests.

17.00 - 17.20 Coffee break

17.20 - 19.00 Companies **flash presentations** (5 minutes each).
At the end of session will take note of the meetings requests.

21:00 **Dinner at the Restaurant "Ca la Nuri" (http://www.calanuri.es/)**
377 Consell de Cent street (between Roger de Llúria and Bruc)

DECEMBER, 2nd

Place: Scientific Park of Barcelona - **Towers R+I+D**
Rooms next to Hall tower D (ground floor)
4, Baldiri Reixach street
08029 Barcelona

9.00 – 9.10 Delivery of b2b meetings schedule.

9.10 – 15.00 b2b meetings (15 minutes each).

Flash presentations Research groups

Research groups

Drug Delivery Systems

INORGANIC NANOPARTICLES

1	Nanogated materials.	Mr. José Vicente Ros	IQMA-UPV	Valencia
2	Biofunctional gold and magnetic particles	Mr. Marco Marradi	LNB-CICBIO	San Sebastián
3	Hybrid nanoparticles for hyperthermia	Mr. Jesús Santamaría	NFP-INA	Zaragoza
4	Hyperthermia and magnetic focalization	Mr. José Javier Serrano	GBT-UPM	Madrid

ORGANIC NANOPARTICLES

5	Multifunctional Polymeric Nanoparticles	Ms. Gabriela Caldero	QCI-CSIC	Barcelona
6	PEG Based Dendrimers	Mr. Daniel Pulido	PCB-UB	Barcelona
7	Carbosilane dendritic systems	Mr. Rafael Gómez	GDAB-UAH	Madrid
8	Polysaccharides	Ms. Marina Giannotti	NANOMEMB-UB	Barcelona
9	Polimeric particles and SLNs	Mr. José Luís Pedraz	SLFPB-EHU	Vitoria
10	Solid particles/liposomes	Ms. Nora Ventosa	ICMAB-CSIC	Barcelona

PROTEIC PARTICLES

11	Recombinant Nanopartícles	Ms. Esther Vázquez	IBB-UAB	Barcelona
12	Recombinant Proteic Polimers	Ms. Alessandra Girotti	BIOFORGE-UVA	Valladolid

CELLS

13	Cell Microencapsulation	Mr. José Luís Pedraz	SLFPB-EHU	Vitoria

Support tools to dessign drug delivery systems.

14	Peptide Production	Ms. Miriam Royo	PCB-UB	Barcelona
15	Nucleic acid synthesis	Mr. Santiago Grijalvo	GQNA-CSIC	Barcelona
16	Protein Production	Mr. Antonio Villaverde	IBB-UAB	Barcelona

Support tools to assay drug delivery systems

17	Preclinical Assays for Antitumor Drugs	Mr. Ramon Mangues	GOA-HSCSP	Barcelona
18	Preclinical Assays for drug delivery	Ms. Ibane Abasolo	GDLF-HUVH	Barcelona
19	Non invasive bioluminescence imaging for drug development	Mr. Jerónimo Blanco	TC-CIC	Barcelona
20	Single Molecule Detection Unit	Ms. Olga Esteban	IBEC	Barcelona
21	Preclinical applications of MR/MRS/MRSI	Ms. Ana Paula Candiota	GABRMN-UAB	Barcelona
22	Contrast Agents	Mr. José Javier Serrano	GBT-UPM	Madrid
23	Micro-imaging and NMR spectroscopy	Mr. Vicent Esteve	FQ-UV	Valencia

Flash presentatations companies

1	Bioiberica	Mr. Roger Sabata	Barcelona
2	Chemo	Mr. Gonzalo Hernández	Madrid-Barcelona
3	Ecopoltech	Mr. Josep Rocas	Tarragona
4	Endor Nanotechnologies	Mr. Marc Ramis	Barcelona
5	Ferrer	Ms. Laurence Lachamp	Barcelona
6	GP Pharm – Lipotec Group	Mr. Ricard Mis	Barcelona
7	Idifarma	Mr. Angel Ursua	Navarra
8	Ipsen	Mr. Roland Chérif-Cheikh	Barcelona
9	Janus Developments	Mr. Ramon Bosser	Barcelona
10	Labiana	Mr. Rafael Bernad	Barcelona
11	NLAB Drug Delivery	Mr. Quique Llaudet	Madrid
12	Palau Pharma	Mr. Alberto Fernandez	Barcelona
13	Pharmamar	Ms. Pilar Calvo	Madrid
14	Sepmag	Ms. Anna Montràs	Barcelona

End of session

19:00 End of session

Other attendants

Ms. Ruth Duncan	Professor of Cell Biology and Drug Delivery	Welsh School Pharmacy
Mr. Joan Marca	General Secretary	CataloniaBio
Ms. Arantxa Sanz	Head of Corporate Projects	Nanomedicine Platform
Mr. Fernando Albericio	Director	PCB
Mr. Josep Samitier	Deputy Scientific Director	CIBER BBN
Mr. Gonzalo Vicente	General Manager	CIBER BBN
Mr. Jesús Izco	Plataforms Manager	CIBER BBN
Ms. Aída Castellanos	Project Manager – Regenerative medicine SL	CIBER BBN
Ms. Johanna Sheperd	Project Manager – Biosensors SL	CIBER BBN

Organizing team

Mr. Fernando Santos	Technology Transfer Manager	CIBER BBN
Mr. Ramon Roca	Project Manager – Nanoconjugates SL	CIBER BBN
Ms. Inés Ortega	Responsible for the area of communication	CIBER BBN
Ms. Elena Andrés	IP management	CIBER BBN

Research Centres

DRUG DELIVERY SYSTEMS

INORGANIC NANOPARTICLES

1 Nanogated materials
Ramón Martínez Máñez Group
IQMA-UPV Valencia

Nanogated materials: an innovative technology for controlled release.
Our group has developed a family of new coatings based on nanometric devices (molecular gates) for controlled release of guest molecules on command, preventing premature release of the cargo. The process of the gate opening/closing is designed to be controlled by stimuli either chemical, physical or biological in a reversible way. Examples of coatings already developed include materials able to release the guest in response to changes on pH, specific ions concentration, light, temperature and the presence of enzymes, toxins or oligonucleotides. Some of them are patented or under patenting process. Although the coatings can be applied on several host materials, we have employed porous silica nanoparticles as inorganic 3D porous scaffoldings. The big loading capacity due to the large surface area and empty space pore volume of the silica mesoporous supports make them attractive vehicles for the storage and delivery of molecular therapeutics. They can be easily functionalized with gating mechanisms, bioimaging agents and targeting receptors to direct the drug delivery vehicle to the desired point and release the cargo there. We can also support companies and research centres in the preparation and modification of other kind of porous and metallic nanoparticles.

2 Bifunctional gold and magnetic nanoparticles
Soledad Penadés Group
LNB-CICBIOmagune San Sebastián

The glyconanotechnology developed by our group provides a versatile platform for preparation in a single step of water-soluble gold nanoparticles incorporating a number of different molecules (carbohydrates, fluorescence labels, peptides, proteins, antibodies or si-RNA) in defined stoichiometric ratios. The technology allows also the preparation of multifunctional magnetic nanoparticles as probes for in vivo labelling, tracking and imaging stem cells by MRI. Semiconductor glyconanoparticles (glyco-QDs) have been also prepared and used as fluorescent probes in cellular systems.
Reviews: I. García , M. Marradi, S. Penadés, *Nanomedicine* **2010**, *5,* 777; J. M. de la Fuente, S. Penadés, *Biochem Biophys Acta* **2006**, *1760*, 636

3 Hybrid nanoparticles for hyperthermia
Jesús Santamaría Group
NFP-INA Zaragoza

Hybrid nanoparticles for magnetic and optical hyperthermia

Our laboratory develops nanoparticles that can be used as drug delivery vehicles or as contrast agents for diagnosis. The objective is to have injectable micro- and nanoparticles that can be directed by means of external or internal fields. The particles have a biocompatible (silica or zeolite) coating which can be functionalized, and whose porous structure is used to load the drug. An important development aims to obtain porous particles that can be remotely heated by means of magnetic fields (magnetic hyperthermia) or by a near-infrared laser (optical hyperthermia). These nanoparticles can then be used for thermal ablation or for magnetic or laser-triggered drug delivery.

4 Hyperthermia and magnetic focalization
Francisco del Pozo Group
GBT-UPM Madrid

The CIBER-BBN Platform at CTB-UPM is dedicated to the functional characterization of magnetic nanoparticles (MNPs) as agents for the following nanomedical applications:

- as contrast agents for MRI,
- to magnetically or optically induce hyperthermia what is useful to the magnetically or thermally drug delivery activation and
- to perform mechanical actions by magnetically driving their movements (magnetic focalization and guidance) inside biological tissues and organs, useful to concentrate and retain loaded MNPs at specific places before the natural of forced realise of drugs.

ORGANIC NANOPARTICLES

5 Multifunctional Polymeric Nanoparticles
Conxita Solans Group
QCI-CSIC
Barcelona

Polymeric nanoparticles are promising drug delivery systems in the biomedical field, which can improve efficacy and decrease adverse effects of drugs by a rational design including appropriate functionalization. Polymeric nanoparticles prepared in O/W nano-emulsions will be presented as well as the ongoing work on their functionalization for their use as selective drug delivery and theranostic systems.

References

V. P. Torchilin. Advanced Drug Delivery Reviews 58 (2006) 1532–1555
M. Ferrari. Current Opinion in Chemical Biology 2005; 9: 343-346
K. Riehmann, et al. Angew. Chem. Int. Ed. 2009; 48: 872-897
Desgouilles S. Et al. Langmuir 19: 9504-9510, 2003
Solans C., et al. Current Opinion in Colloid and Interface Science 10, 102-110, 2005

6 PEG Based Dendrimers
Fernando Albericio Group
PCB-UB
Barcelona

Our lab has been developing technology based on well defined dendrimers based on PEG oligomers as drug delivery platforms. These dendrimers are multivalent molecules, non toxic, biocompatible, non hemolitic highly soluble in water and high stability in plasma. Therapeutic agents could be conjugated covalently to these dendrimers taht are able to protect the therapeutic agent against degradation and increase its half live time on plasma. Well defined combinations of therapeutic agents can be conjugated in controlled way producing a final nanoconjugated with exact molecular weight and drug surface distribution.

7 Carbosilane dendritic systems
Rafael Gómez Group
GDAB-UAH Madrid

We are currently developing a new synthetic technology based on carbosilane dendritic systems and their corresponding functionalization for biomedical application (HIV or cancer). Although, they can act as therapeutic systems (antiviral, antibacterial or antiprionic agents), one important contribution is their employ as alternative non-viral vectors for gene therapy or nanocarriers for drug delivery.

8 Polysaccharides
Fausto Sanz Group
NANOMEMB-UB Barcelona

Our lab is able to produce and characterize polymer-based carriers for therapeutic agents using derivatives of natural polysaccharides. These drug delivery systems are based on supramolecular interactions between the polysaccharide and the therapeutic agent (a protein, for example), a strategy that implies mild preparation conditions, as well as a high level of control of the physicochemical properties (size, Z-potential, etc). These systems are specifically designed to release the cargo in the precise site of action, triggered by parameters characteristics of the medium of in the target cell/organelle. Besides, conjugation to fluorescent dyes allows further following of their cellular internalization *in vitro*. In addition, these systems can also be functionalized with certain ligands in order to induce specificity to certain target cell type.

9 Polimeric Particles and SLNs
José Luís Pedraz Group
SLFPB-EHU Vitoria

Biodegradable polymeric micro- and nanoparticles have shown numerous applications in the field of drug delivery. The most commonly used polymers are poly-lactide-co-glycolide acid (PLGA) and its derivatives due to their wide use in a number of medical devices and degradation into natural products that enter into metabolic pathways.
PLGA particles have demonstrated an adjuvant activity that enhances the immunogenicity of a variety of vaccine antigens, from peptides and proteins to viruses. Their mechanism of action is based on a depot effect and their ability to target antigens to antigen-presenting cells (APCs), such as macrophages and dendritic cells, and carry these antigens to lymphoid tissues. Furthermore, their controlled release ability has been related to the possibility of mimicking multiple vaccine doses with single immunization.
Polymeric micro- and nanoparticles have also been used as vehicles of bioactive molecules such as cytokines and growth factors (e.g. VEGF, GDNF, BDNF). The main goal of these systems in to provide therapeutically efficient concentrations of the encapsulated molecule in a biologically inspired manner, that controls their spatio-temporal bioavailability and interactions with other signaling molecules.

10 Solid particles/liposomes
Jaume Veciana Group
ICMAB-CSIC Barcelona

Solid lipid nanoparticles (SLN) are an efffective system to transfer genetic material into the cell, being an ideal suystem for gene theraphy, allowing plasmid expression into cells. SLN are also able to protect genetic material from enzymes present in blood and other biological fluids, preventing its degradation before reaching its ultimate destination.

Our expertise is based in compressed fluid based technologies used for the straightforward preparation of micro and nanoparticulate materials with potential applications in drug delivery. CF or SF based technologies (mainly CO2-based) are showing to be promising technological platforms of single-step bottom-up approaches to produce micro- or nanostructured materials. Some of the product materials successfully obtained by our group using different CFs methodologies are pure micro- or nanosized drug powders with increased bioavailability, particulate composite materials as sustained release forms or improved targeted forms, and liquid-dispersed systems such as water dispersed nanovesicles/liposomes for the encapsulation of active molecules. Main advantages and innovative aspects of our CF technology platform are:
1) Highly reproducible product batches in single-stage and easy-scalable processes.
2) High added-value product properties achieved (bioavailability, selectivity and solubility stability)
3) Higher control over particle size and polymorphic purity.
4) Environmental friendly processing.

PROTEIC PARTICLES

11 Recombinant Nanoparícles
Antoni Villaverde Group
IBB-UAB
Barcelona

Multimeric protein nanoparticles are chimeric proteins genetically modified with specific domains. Their goal is to achieve selective delivery on specific cells or tumours and enhance specific effects on these cells. The multimeric proteins could be tailored according with the needs of every project and could domains to direct their transport to specific locations within the cell. They could also contain domains for specific interactions between specific cell ligands, domains for internalization and domains with specific toxic effects, able to restore activities or to inactivate or downregulate specific genes.

12 Recombinant Proteic Polimers
José Carlos Rodríguez Cabello Group
BIOFORGE-UVA Valladolid

Taking advantage of the smart behaviour and the self-assembly ability of the elastin-like polymers (ELPs), we have developed self-assembled drug release systems being highly biocompatible and biodegradable. Besides, thanks to the enormous potential given by recombinant techniques, the degree of complexity and control in the final composition of the nanoparticles can be extraordinary high. This way we have obtained nanoparticles with controlled size and composition to be employed as carriers of drugs, antigens, proteins, cells, DNA/RNA… and as adjuvants in vaccines delivery systems.

LIVING CELLS

13 Cell Microencapsulation.
José Luís Pedraz Group
SLFPB-EHU Vitoria

Cell encapsulation is one of the most promising technological approaches to overcome the limitations of current in vivo drug delivery systems. This technology is based on the immobilization of cells within a polymeric matrix surrounded by a semipermeable membrane for the long-term release of therapeutics or tissue-engineering applications where microcapsules are employed as the scaffold for cells to grow in. Encapsulated cells are isolated from the host immune system while exchange of nutrients, waste and therapeutic agents is allowed. The versatility of this approach has stimulated its use in the treatment of numerous medical diseases including diabetes, cancer, central nervous system diseases and endocrinological disorders among others.

Support tools to dessign for drug delivery systems.

14 Peptide synthesis
Fernando Albericio Group
PCB-UB Barcelona

Is capable to introduce synthetic modifications that are necessary to bound peptides to therapeutic nanoconjugates and other molecules, either to take advantage of the pharmacological activity of the peptide itself or to facilitate the delivery into the cells of nanoconjugates or other molecules into the cells in order or act as targeting driver.

Also this unit offers complementary services on Medicinal chemistry, heterocyclic and condensation chemistry, synthesis of dendrimers natural products and chemical biology tools. They are capable to design and synthesize small to medium-sized chemical libraries (50-400 compounds), both solid-phase and in solution, and microwave assisted synthesis, using parallel automatic and semi-automatic synthesis.

15 Nucleic acid synthesis
Ramon Eritja Group
GQNA-CSIC
Barcelona

Development of novel modified siRNAs , triplex-forming oligonucleotides, aptamers and antisense DNAs for inhibition of gene expression. Synthesis of novel oligonucleotide conjugates with lipids, carbohydrates, peptides or intercalating agents aimed to improve delivery of nucleic acids derivatives into cells. Synthesis of G-quadruplexes and DNA-binding drugs for viral inhibition.

16 Protein Production
Antoni Villavede Group
IBB-UAB
Barcelona

This facility has the necessary equipment to offer an “a la carte” service for the design, production and purification of recombinant proteins. Two expression systems are available: prokaryotic expression systems (low cost and high efficiency, but limited when post-translational modifications are required) such as those based on escherichia coli, and eukaryotic systems (more expensive but also highly efficient and moreover post-translational modifications can be carried out) such as those based on insects cells-Baculovirus and mammalian cell lines.

Support tools to assay drug delivery systems

17 Preclinical Assays for Antitumor Drugs
Ramon Mangues Group
GOA-HSCSP Barcelona

Our group has an extense expertise in the development of new antitumor compounds in collaboration with the pharmaceutical industry, which we are now enhancing by testing the effect of their directioning to tumor cells. We have developed novel orthotopic models of disseminated cancer that closely replicate the metastatic phenotype observed in human colorectal and pancreatic carcinomas, large B-cell non-Hodgkin lymphomas or acute myeloid leukaemia. We have cultured cancer cell lines for each of these tumor models. Our group has characterized their expression of surface receptors. These models could then be used to assess the effectiveness of nanoparticles that incorporate high affinity ligands for these receptors as directed drug delivery vehicles. We can evaluate whether these vehicles are able of specifically delivering therapeutic agents inside the disseminated tumor cells that express the targeting receptor. We can also assess the specificity of the receptor-mediated nanoparticle internalization, as well as the in vitro antitumor effect and antimetastatic effect in the animal models. Finally, we can characterize the effect of the therapeutic agents on its target gene or protein and also their capacity of inducing apoptotic and non-apoptotic cell death pathways.

18 Preclinical Assays for drug delivery
Simó Schwartz Group
GDLF-HUVH Barcelona

At CIBBIM-Nanomedicine we are currently testing the efficacy and toxicity of diverse delivery systems, such as polymers, dendrimers, liposomes, silica nanoparticles, carbon nanotubes or magnetic nanoparticles, through standardized in vitro and in vivo experimentation procedures. In our hands, basic preclinical studies including efficacy treatments and ADME assays are complemented with non-invasive optical imaging technologies, which help to accelerate the preclinical development of novel therapeutic and/or diagnostic agents.

19 Non invasive bioluminescence imaging for drug development
Jerónimo Blanco Group
TC-CSIC Barcelona

The group develops non-invasive bioluminescence imaging procedures to monitor in live animals: a) the behavior of luciferase expressing stem cells in biomaterials for tissue repair, b) the effectiveness of cells as vehicles to deliver localized tumor therapy, and c) the response of tumor models to antineoplasic agents.
In addition, this technology can be used: a) in vitro, for high throughput screening strategies to monitor the response of target genes to drugs, and b) in vivo, to analyze the capacity of different drug delivery systems to introduce drugs, proteins and nucleic acids into cells of target tissues and tumors.

20 Single Molecule Detection Unit
María García Parajo Group
IBEC Barcelona

The single molecule detection unit includes a confocal multiparameter fluorescence microscope which is integrated with a module for wide-field optical microscopy (EPI-TIRF) with single molecule sensitivity. It offers the possibility of imaging individual molecules in living cells, combining high spatial resolution (10 nm) with temporal resolution (400 frames/sec). This facilitates the access to the biological system at the nanometric scale in a dynamic and non-invasive manner.

This platform provides a comprehensive tool for investigating the dynamic interactions of drug-carrier nanoparticles with both synthetic surfaces and the membrane of living cells. These interaction studies can be used to design and develop more efficient drug delivery systems. In this context, we are currently
applying these high-resolution microscopy techniques to the study of (1) the interaction of diverse nanoparticles with the cell plasma membrane, (2) the intracellular nanoparticle traffic in living cells and (3) the physicochemical properties of drug-carrier nanoparticles on a particle-by-particle basis.

21 Preclinical aplications of MR/MRS/MRSI
Carles Arús Group
GABRMN-UAB Barcelona

The Platform for Biomedical NMR at UAB has the capability of acquisition, processing and/or interpretation of Nuclear Magnetic Resonance (NMR) data. This includes high resolution spectra from drugs, biofluids, HRMAS of tissues, CPMAS of solids, in vivo MRI, MRS and MRSI of preclinical animal models of human pathology (up to a body diameter of 17 cm). Ultrafast molecular imaging using hyperpolarized substances is also possible. Support for Pattern Recognition analysis of data is available. Guided access to clinical scanners at collaborating Hospitals of the Barcelona metropolitan area for patient related work may be facilitated (1.5 and 3T systems).

22 Contrast agents
Francisco del Pozo Group
GBT-UPM Madrid

The CIBER-BBN Platform at CTB-UPM is dedicated, among other activities, to the characterization of magnetic nanoparticles (MNPs) as contrast agents for MRI. Because the loaded MNPs' spatial distribution must be well established we use a relaxometer to measure the changes in T1 and T2 along a wide range of magnetic fields as a function of the MNPs in vitro concentration and of other parameters. This information can be used to determine the MNPs distribution in a tissue or organ from MRN images. Excluding the use of MNPs, the relaxometer is also useful to measure other characteristics of biological samples like the fat content, etc..

23 Micro-imaging and NMR spectroscopy
Bernardo Celda Group
FQ-UV Valencia

Monitoring drug delivery and response in tissue samples and cellular systems by micro-imaging and NMR spectroscopy:

We are developing new micro-chambers (lab-on-chip) for long term monitoring of tissue samples and organotypic cellular systems by NMR microscopy and optical techniques of molecular imaging. This investigation at micro-scale of the drug delivery and effects is a step towards the correlation and interpretation of the information obtained by imaging and spectroscopic techniques and could facilitate the translation to clinical NMR monitorization in vivo. Of particular importance will be the preclinical human tissue assays.

Companies

1 Bioiberica
http://www.bioiberica.com/

Desde nuestra creación, en 1975, nos hemos especializado en la **investigación, fabricación y comercialización de biomoléculas** para la industria farmacéutica, veterinaria y agrícola. Un firme compromiso con la ciencia y la tecnología y un amplio conocimiento de este campo han consolidado nuestro liderazgo como productor de Glicosaminoglicanos (Mucopolisacáridos), entre los que destacan Heparina, Condroitín Sulfato, Ácido Hialurónico y Glucosamina y otros ingredientes activos como Aminoácidos, Péptidos caracterizados e Hidrolizados proteicos

2 Chemo
http://www.chemogroup.com/EN/

Over the last 30 years, Chemo is a provider of active substances to major pharmaceutical companies. As an integrated Health care group, Chemo has been involved into different sides of the pharmaceutical business, comprising thus, all the links of the industry chain as TRADING GENERICS API, GENERICS FDF, BRANDED PHARMACEUTICALS, VETERINARY & AGROCHEMICALS, R&D and BIOTECH.

3 Ecopoltech
http://www.ecopoltech.com/

Development of R & D industries Adhesives, Coatings, Dyes, Chemicals, Intermediates, systems for drug release, etc..
Current research lines.

- New products and materials, special adhesives and coatings, with better properties and benefits, friendly environment. Solventless adhesives and coatings.
- New water-based polyurethanes. PU dispersions.
- New products from recycled materials
- Biomaterials and biodegradable materials
- New systems of controlled release of active ingredients for the pharmaceutical, agriculture, insect and pest control, etc.

4 Endor Nanotechnologies
http://www.endornanotech.com/

Endor is a nanomedicine company developing innovative pharmaceutical products. The emerging nanomedicine market is our core business. Endor's mission is to translate our medical programs using advanced metallic nanosystems to make a positive pharmaceutical market impact. Advanced metallic nanosystems offer a versatile platform with wide technological possibilities for the development of new treatments and diagnostic tools for th patient. Our leading program for therapeutics is an innovative delivery system for agents with great potential to be applied in oncology. EDS is an advanced delivery system for therapeutic agents both small molecules and biologicals (organic drugs, siRNA, proteins or monoclonal antibodies).

5 Ferrer
http://www.ferrergrupo.com/

Since the seventies, Ferrer has based its business activity on R&D&I (research, development and innovation) in all its operating areas.
This includes essential research, the development of products boasting new galenic formulations and technological innovations, and providing customized solutions for our customers, especially in the food and chemicals areas.
Our consistent global growth continues because we believe strongly in the future.
Today we can adapt ourselves confidently to our environment and strengthen our links and alliances thanks to the Ferrer team and the intelligent use of new technologies.
In the future we will continue to use innovation and the introduction of new technology to operate wherever we are required. The incorporation of state-of-the-art projects, such as research based on biotechnology will be crucial to this.

6 GP Pharm
http://www.gp-pharm.com/

GP Pharm, is a Spanish biopharmaceutical company of the Lipotec Group, located in Barcelona (Catalonia, Spain). The company is focused on research, development, manufacturing and marketing of products for injection within Urology and Oncology fields, based in proprietary Drug Delivery Systems. These technological platforms include microspheres and liposomes.
Proprietary Technological Platforms
Microspheres: Platform based on the use of PLGA microspheres containing triethyl citrate to modulate a sustained drug release.

- Enhanced control during release phase
- Enhanced sustained release during the whole treatment
- Enhanced pharmacologic effect
- Decrease of the requested dose per administration unit

Products: Leuprorelin 1 month, Leuprorelin 3 months, Triptorelin 1 month, Triptorelin 3 months, Gosorelin 3 months, Octreotide LAR, Octretide MAR Liposomes
Platform based on liposomes for injection which includes the drug substance and lipochroman (a own proprietary antioxidant product) in the wall of the liposome.

- Suitable platform to encapsulate cytotoxic compounds to reduce its toxicity or increase its bioavailability.
- Reduces drug substance degradation process Products: Liposomal doxorubicin, target liposome's.

Lipotec
http://www.lipotec.com/

Lipotec i**s** a privately owned company founded in 1987. The company's core business was originally built around two technology platforms: peptides and delivery systems. The cosmetic division was dedicated to encapsulation and delivery systems for cosmetics, especially millicapsules and liposomes, while the Peptide division specialised in the synthesis and purification of peptides for pharmaceutical applications.
In recent years, our expertise in peptides has been incorporated as a technology platform into the cosmetic operation and peptides are currently one of our most active product lines for cosmetics. This has enabled Lipotec to become one of the leading suppliers of cosmetic active ingredients in the world.

7 Idifarma
http://www.idifarma.com/en/present.htm

IDIFARMA is a company of reference in the offer of specialized services for the Spanish and European markets in the areas of pharmaceutical and biotechnology research, development, and innovation.

Our main objective is to provide services and products according to our customers' needs. Thanks to wide range of services, our high-performance equipment and a strict quality-control system, we are able to offer efficient solutions within the set deadlines. We are experts in formulating and designing drug manufacturing processes, in developing and validating analytical methods and in manufacturing and supplying the products required for the clinical development of new drugs.

IDIFARMA is an authorized **pharmaceutical laboratory** and has been certified as complying with Good Manufacturing Practices (cGMP) and Good Laboratory Practices (GLP).

8 IPSEN
http://www.ipsen.com/en/r-d-homepage

To develop the Group's product portfolio by making the best strategic choices, **Ipsen adopts a global and strategic approach for all candidate compounds**. Some of the compounds discovered by internal research teams are developed by the Group, whilst others are licensed out to laboratories via strategic partnerships. Ipsen may also develop and market compounds that do not come from its own research, but which are perfectly in line with its strategy. **By optimizing time and resources, Ipsen generates the most value added possible**, both in medical and economic terms. Clinical development teams execute or commission execution of clinical trials, the pharmaceutical development center produces batches destined for preclinical and clinical research, and the pharmacokinetics department takes part in clinical trials with the advanced drug delivery teams.

9 Janus Developments
http://www.janusdevelopments.com/

JANUS DEVELOPMENT´s final costumer are biotech and pharmaceutical companies which buy products at earlier stages of research (preclinical and clinical proof of concept), investing in clinical development in order to bring them to the market. In this sense, for each of the purchased licenses, JANUS conducts a specific market study, creating a detailed product profile, depending on both the selected pharmaceutical indication and the market competition in the defined indication. The study includes product market projections and sales expectations in their particular area.
Moreover, JANUS key business opportunity is determined by the spanish technology generators which could deliver licensable projects in an important volume and excelence quality that allow to develop a portfolio of research projects attractive to the end customer.

10 LABIANA
http://www.labiana.com/

LABIANA PHARMACEUTICALS S.L.U. and LABIANA LIFE SCIENCES S.A.U. belong to LABIANA GROUP. Both companies have extensive experience in contract manufacturing services for pharmaceutical and veterinarian industries and have provided services to well established multinational companies.

Under GMP certificate, LABIANA PHARMACEUTICALS S.L.U. has a production plant with current authorisation for several pharmaceutical forms including tablet manufacturing and with a capacity of about 20 million units. Among other expertises, LABIANA has Film Coating Technology (FCT) available and strong packaging capability comprising 7 packaging lines. LABIANA LIFE SCIENCES plant is manufacturing products for veterinarian use worldwide. In addition, it has prepared and registered several marketing authorisations.

With a competitive and highly trained team spread among the Technical, Regulatory Affairs and Research and Development departments, LABIANA can provide integrated services at diverse steps during drug development from idea to the market. LABIANA holds and has produced marketing authorisations for several pharmaceutical and veterinarian products.

11 NLAB Drug Delivery
www.nlabdrugdelivery.com

NLAB Drug Delivery is singularly focused on the development and commercialization of innovative drug delivery solutions based on mesoporous silica particles.
The company operates from Malaga and Barcelona in Spain in close contact with The Andalusian Centre for Nanomedicine and Biotechnology (BIONAND).
Silica nanoporous drug delivery systems offer high stability, high carrier capacity, feasibility of incorporation of both hydrophilic and hydrophobic substances and compatibility with different administration routes (oral, inhaled, etc.). NLAB Drug Delivery materials are designed to allow controlled (sustained) drug release from the matrix. All these properties result in improvements in drug bioavailability values and dosing frequency, and may resolve the problem of non-adherence to prescribed therapy. Silica powders are an approved food additive (E551 under EU regulations; categorized as “unlimited daily intake” under WHO regulations). Porous versions of amorphous silica offer an inexpensive and safe route for the design of new drug delivery vehicles.
NLAB Drug Delivery is a spinoff from Nanologica, a materials development company based in Sweden, that engineers nanoporous materials for use in a range of industries from pharmaceuticals to photovoltaics.

12 Palau Pharma.
http://www.palaupharma.com/

Palau Pharma S.A. ("Palau") is a product-driven biopharmaceutical company focused on the discovery and development of medicines that are designed to address the unmet needs of patients suffering from inflammatory and autoimmune diseases. By successfully targeting specific conditions that are currently underserved, we are able to open up opportunities for commercializing best-in-class or first-in-class products.
In addition to our unique focus, we adopt a nimble approach and operating structure that emphasizes the importance of developing safe and effective products within an expedited framework. This approach has been strongly validated through partnering agreements with broad range of companies, including GlaxoSmithKline, Schering-Plough, Affectis Pharmaceuticals, IberHospitex, and others.

13 Pharmamar
http://www.pharmamar.com/
PharmaMar is the first company in the world to develop and market a drug of marine origin to fight cancer.
Founded in 1986, PharmaMar, a wholly owned member of the Zeltia Group, is a biopharmaceutical company determined to advance cancer treatment through discovering, developing, producing, and marketing innovative drugs of marine origin.
The company has a unique marine organism library containing over 95,000 specimens. PharmaMar's Research, Development, and Innovation Department has discovered 700 new chemical entities and identified 30 new families of compounds. As a result of this work, PharmaMar has over 1800 patents that either have been awarded or are in the processing stage.
PharmaMar ranks among the leading Spanish pharmaceutical companies that invest heavily in Research, Development, and Innovation. During its first 20 years it has devoted 450 million euros to R+D+i.

14 Sepmag
http://www.sepmag.eu/

SEPMAG develops, manufactures and markets Precision Magnetophoresis systems for the Biotechnology Industry. Unlike traditional magnetic separators, **Sepmag** precision magnetophoresis systems are specifically designed so that all beads experience the same magnetic force, regardless of the distance to the magnetic ring. Homogeneous separation conditions eliminate the possible adverse effects that non-homogeneous separation may have on the variability of the end-product. Furthermore, scaling-up is straightforward and process revalidation becomes unnecessary.
Our product range includes the Stepmag, Sepmag Q and Sepmag LAB series, as well as the QCR monitoring system to control the process.

FORO CIBER BBN-EMPRESA EN LIBERACIÓN DE FÁRMACOS

Cuestiones prácticas sobre el desarrollo del Foro

1- PRESENTACIONES FLASH
   a. Rogamos que se ajusten a 5 minutos.
   b. No habrá tiempo para formular preguntas. Debido al elevado número de presentaciones y puesto que se dispondrá de las entrevistas bilaterales para ampliar información.
   c. Se ruega puntualidad para el comienzo de las sesiones después de la pausa para café y la comida.

2- SOLICITUD DE ENTREVISTAS BILATERALES O PARTNERING
   a. Se ruega a las EMPRESAS que al terminar la sesión de las presentaciones flash de los grupos CIBER (pausa para café) indiquen a Fernando Santos (CIBER-BBN), con qué grupos del CIBER-BBN desean mantener una entrevista o "partnering".
   b. Se ruega a las GRUPOS CIBER-BBN que al terminar la sesión de las presentaciones flash de las empresas (final del primer día) indiquen a Fernando Santos (CIBER-BBN) con qué empresas desean mantener una entrevista o "partnering".

3- ENTREVISTAS BILATERALES (PARTNERING)

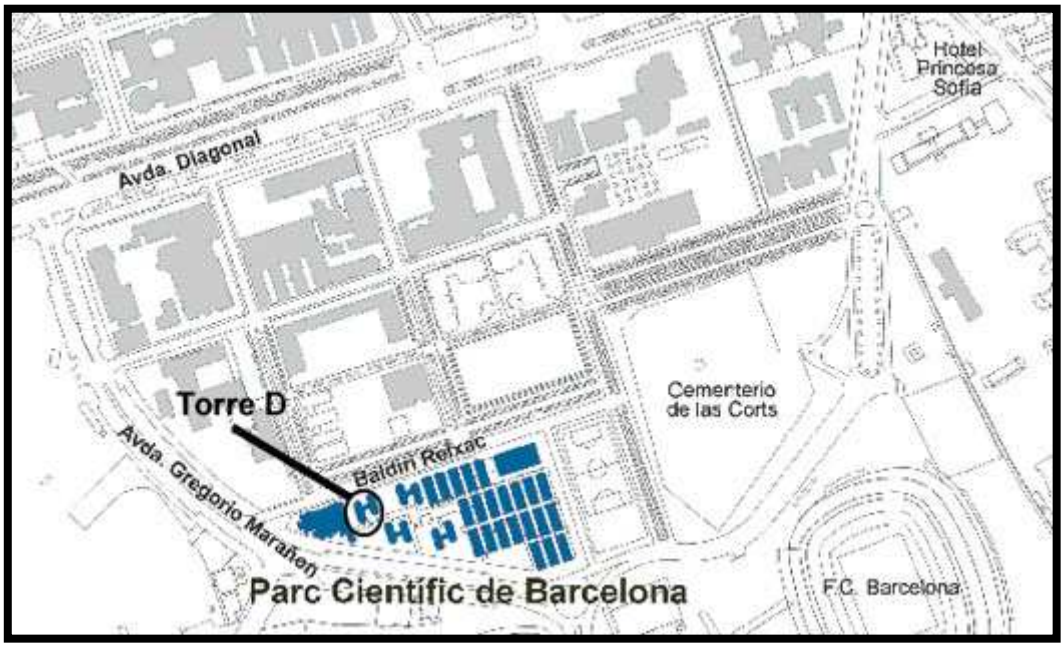
   Se colocarán las sillas en grupos numerados en las salas que adjuntas al Hall de la planta baja de la Torre D (Junto al auditorio) en las torres R+I+D del Parque Científico de Barcelona (PCB). Calle Baldiri Reixach nº4.
   a. Antes del comienzo del partnering, se informará a cada participante de las entrevistas que tiene concertadas, con quién, el número del lugar de encuentro y la hora.
   b. Rogamos que las entrevistas se ajusten a 15 minutos.
   c. Son breves, pero su objetivo es identificar puntos comunes de interés, y que los participantes que lo deseen concierten futuras entrevistas con más tiempo para profundizar en los temas comunes.

4- ENCUENTROS INFORMALES

   Durante toda la mañana, mientras se celebra el partnering se dispondrá de una zona en el Parque Científico para tomar café y conversar con otros participantes en aquellos periodos que no se tengan entrevistas bilaterales concertadas.

LOCATION OF THE FORUM

Scientific Park of Barcelona - Towers R+I+D
Auditorium in Hall tower D (ground floor)
4, Baldiri Reixach street
08029 Barcelona



ciber-bbn
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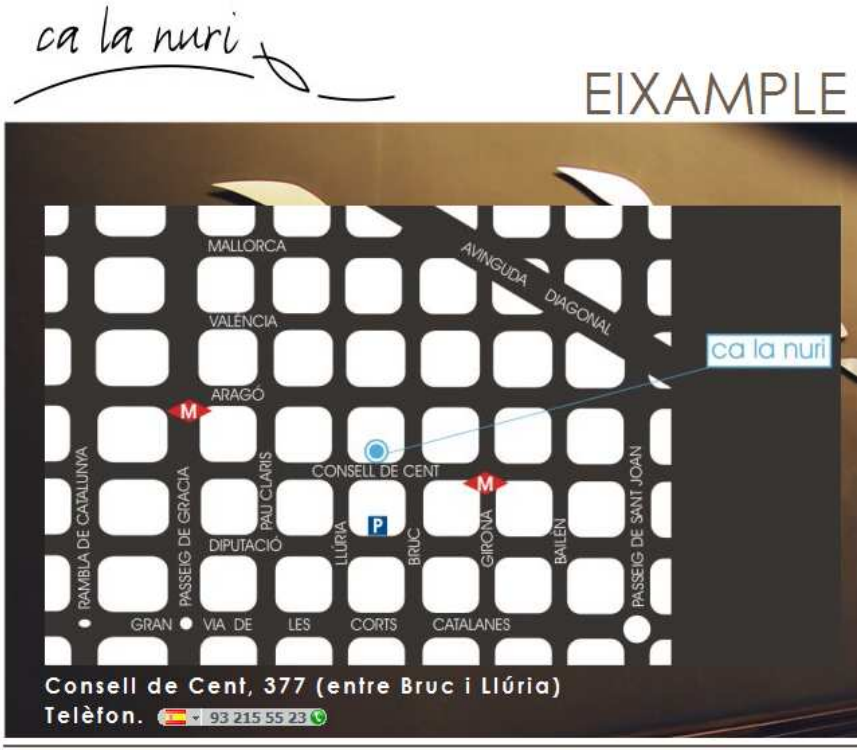
LOCATION OF THE RESTAURAT "CA LA NURI "
377 Consell de Cent street
http://www.calanuri.es/



ca la nuri

STARTERS

Iberian ham
Codfish salad
Deep fried squid
Deep fried fish
Grilled cocales

MAIN COURSE

Grilled squid from Arenys
Or
Noodles with clams
Or
Oven sea bass from Vilanova
Or
Veal sirloin steack
- - - - - - - -
Toasted bread with tomato

DESSERTS

To choose with cup of “cava”

TO DRINK

With or black wine from “Bodegas Barbadillo”
Water

Coffees and tea

ca la nuri

PARA COMPARTIR

Jamón Ibérico
Ensalada de bacalao
Chipirones fritos
Pescadito de playa
Berberechos a la plancha

A ESCOGER

Calamares de Arenys a la plancha
O
Fideuà con almejas
O
Lubina de Vilanova al horno
O
Entrecot de ternera
- - - - - - - -
Pan tostado con tomate

POSTRE

Postre con copa de cava

PARA BEBER

Vino blanco y tinto de Bodegas Barbadillo
Refrescos y aguas

Cafés