

“FUTURE TRENDS IN CLINICAL DIAGNOSTICS”

19th January 2011

IQAC-CSIC

Jordi Girona 18-26, Barcelona

9:00 – 9:30 Registration.

9:30 – 9:50 Welcome & Practical Issues for the development of the forum.

- Prof. Àngel Messeguer.
Director of the Institute of Advanced Chemistry of Catalonia, CSIC .
- Prof. M.-Pilar Marco Colás.
Coordinator of the Biosensors & Molecular Diagnostics Strategic Line of the Nanomedicine Area, CIBER-BBN.
- Dr. Fernando Santos.
CIBER-BBN Transfer Manager

9:50 – 11:30 Companies flash presentations (5 minutes each).

11:30 – 12:00 *Coffee Breack*

12:00 – 13:35 CIBER-BBN groups flash presentations (5 minutes each).

13:35 – 13:45 CIBER-BBN Equipment Platform Program.

- Dr. Jesús M. Izco.
Ciber-BBN Platform Manager

13:45 – 15:15 Lunch

15:15 – 15:30 Delivery of the meeting's schedule.

15:30 – 19:30 Partnering meetings (15 minutes each).

Flash Presentations of the different participating companies:

1	Grupo Ferrer	www.ferrergrupo.com	Barcelona
2	BIOKIT	www.biokit.com	Lliçà d'Amunt
3	Dropsens	www.dropsens.com	Oviedo
4	Roche Diagnostics S.L	www.roche.es	Sant Cugat
5	AlphaSip	www.alphasip.com	Madrid
6	Gendiag	www.gendiag.com	Barcelona
7	ImmunoStep	www.immunostep.com	Salamanca
8	LAIMAT	www.laimat.com	Granada
9	Bioiberica	www.bioiberica.com	Palafolls
10	Progenika	www.progenika.com	Vizcaya
11	Randox	www.randox.com	Barcelona
12	Singular Futures S.L	www.ingenieriacultural.com	Barcelona
13	Abyntek	www.abyntek.com	Derio
14	Evasensor	www.evasensor.es	Neuchâtel
15	ZEU-Immunotec	www.zeulab.com	Zaragoza
16	STAT-Diagnostica & Innovation	www.stat-diagnostica.com	Barcelona

Flash Presentation of CIBER BBN Research Groups:

1	Applied Molecular Receptor Group	Ms. M.-Pilar Marco	AMRg-IQAC	Barcelona
2	Nucleic Ac. Chemistry Group	Mr. Ramon Eritja	GQNA-IQAC	Barcelona
3	Colloid and Interfacial Chemistry Group.	Ms. Conxita Solans	QCI-CSIC	Barcelona
4	Applied Microbiology Research Group	Mr. Antonio Villaverde	IBB-UAB	Barcelona
5	Nanoparticle and Peptide Chemical Group	Mr. Antonio Albericio	PCB-UB	Barcelona
6	Nanobiosensors & Bioanalytical App.	Ms. Laura Lechuga	CIN2-CSIC	Barcelona
7	Nanomedicine Group	Mr. Josep Samitier	NANOMED-IBEC	Barcelona
8	Applied Molecular Chemistry Group	Mr. J. Vicente Ros Lis	IQMA-UPV	Valencia
9	Glyconanotec. Laboratory	Mr. Marco Marradi	LNB-CICBIO	San Sebastian
10	Drug delivery & Targeting Group	Mr. Simó Schwartz	GDLF-HUVH	Barcelona
11	Oncogenesis & Antitumor Group	Mr. Ramon Mangues	GOA-HSCSP	Barcelona
12	Physical-Chemistry Group	Mr. Bernardo Celda	FQ-UV	Valencia
13	Research Group in Biomedical App. NMR	Ms. Margarida Julià	GABRMN-UAB	Barcelona
14	Bioengineering & Telemedicine Group	Mr. Francisco del Pozo	GBT-UPM	Madrid
15	Nanomembrane Group	Mr. Fausto Sanz	NANOMEMB-UB	Barcelona

Practical aspects:

1) Flash Presentations:

- a. We kindly request to comply to 5 minutes presentations.
- b. No time for questions will exist between the different presentations.

2) Partnering Meetings Request:

- a. Both, companies and research groups should indicate to the responsible person (Fernando Santos) with who they want to have a meeting.

3) Partnering:

- a. Before starting the partnering section each participant will be informed about their bilateral meetings. Participant name, place and time.
- b. Partnering meetings will have duration of 15 minutes. Punctuality and adjustment to the meeting will be requested.
- c. The time should be sufficient to identify important mutual interests and to organize future meetings. The partners are encouraged to set-up another date for more deep discussions, if necessary.

RESEARCH GROUPS INFORMATION:

Applied Molecular Receptor Group. AMRg-IQAC. Barcelona



Research in this group is addressed to the development of new diagnostic strategies based on novel micro and nano(bio)technological approaches with the aim to improve the efficiency and/or to refine and extend the limits of detection of the actual diagnostic tools. The combination of nanotechnological and biotechnological advances may give rise to a new generation of bioanalytical devices, based on functional (bio)hybrid materials, in which optical or electrical signals can be recorded as a consequence of specific biorecognition events. Bioreceptors conceived to specifically interact with appropriate biomarkers of a particular disease can be produced and integrated with appropriately designed transducers based on micro/nanostructures showing interesting and novel physical properties. In this respect, the AMR group is interested on investigating the influence that biorecognition phenomena may produce on the optical and/or electrical properties of these systems and on exploiting this knowledge to develop new diagnostic strategies for defined clinical problems. Moreover, the group has a recognized experience on producing bioreceptors with tailored properties. The

investigation in this field is essential since these biomolecules are indeed responsible of the specific signal generated by these new (bio)hybrid systems in the presence of the target biomarkers. The AMR group is responsible of the CABs (Custom Antibody Service) that located at the IQAC-CSIC, is one of the units of the Production of Biomolecules Platform of the CIBER-BBN.

Nucleic Ac. Chemistry Group. GQNA-IQAC. Barcelona



The groups is specialized in the development of modified oligonucleotides for different uses such as inhibition of gene expression (siRNAs, triplex-forming oligonucleotides, aptamers, and antisense DNAs), isolation and detection of genes of interest and DNA-mediated assembly nanomaterials in surfaces. The group has large experience in projects dealing with the synthesis of oligonucleotide derivatives carrying reactive groups such as thiols, amino and carboxylates, synthesis of oligonucleotide conjugates with lipids, carbohydrates, peptides or intercalating agents and synthesis of G-quadruplexes and DNA-binding drugs.

Colloid and Interfacial Chemistry Group. QCI/CSIC. Barcelona



The group has expertise on basic aspects of surfactant self-assemblies and on the use of colloidal surfactant systems, namely, microemulsions, and emulsions (namely, highly concentrated and nanosized) for the preparation of new nanostructured materials. Novel organic, inorganic and hybrid materials with controlled size and morphology are prepared by simple and scalable methods.

Applied Microbiology Research 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 E. coli, and eukaryotic systems (more expensive but also highly efficient and moreover post-translational modifications can be carried out) such as those based on insect cells-Baculovirus and mammalian cell lines. It's the responsible group of the PPP (Protein Production Platform) of CIBER-BBN.

Nanoparticle and Peptide Chemical Group. PCB-UB. Barcelona



The group is capable to introduce synthetic modifications that are necessary to bound peptides to different type of surfaces (sensors, nanoparticles, dendrimers....). This unit offers complementary services on Medical chemistry, heterocyclic and condensation chemistry, synthesis of dendrimers natural products and chemical biology tools. They are able 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. They are the responsible group of the Peptide Synthesis Platform of CIBER-BBN.

Nanobiosensors & Bioanalytical Applications. CIN2-CSIC. Barcelona



Their research focuses on the technological development of nanobiosensors based on plasmonics, magnetoplasmonics, integrated photonics and nanomechanics principles, surface biofunctionalization and microfluidics lab-on-a-chip integration and the application in the environmental control of pollutants, early diagnosis of cancer and diseases and genomics and proteomics.

Nanomedicine Group. NANOMED-IBEC. Barcelona



This group is specialized in engineering of Micronanosystems which is a new interdisciplinary applied research field that combines materials, technologies, structures, devices and algorithms to obtain new smart subsystems. The assembly of these subsystems allows the high-density functionality needed to obtain smaller machines and/or instruments such as chip laboratories, microrobots or biochips. Miniaturization of biomedical sensors, actuators and systems is increasingly required in a number of emerging applications. Biomedical systems that combine accurate and stable sensors, efficient actuators, low-power and wireless integrated circuits and hermetic and biocompatible packages are now needed in applications ranging from implantable bio-systems for diagnostics and prostheses to external portable systems for blood and DNA analysis.

Applied Molecular Chemistry Group. IQMA-UPV. Valencia

Intelligent nanogated materials are an innovative technology for diagnostic purposes. We develop new coatings based on nanometric devices for controlled release of guest molecules on command. In this sense the analyte acts as a selective activator and the content of the materials (i.e. dyes, fluorescent probes or contrast agents) is released into the medium. The signal is amplified due to the high amount of signaling units released by a single molecule of analyte. The coatings can be modulated to show activity towards several physical, chemical or biological analytes. We can also support companies and research centres in the preparation and modification of other kind of porous and metallic nanoparticles.

Glyconanotec. Laboratory. LNB-CICBIO. San Sebastian

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 siRNA) in defined stoichiometric ratios. The technology allows also the preparation of multifunctional magnetic nanoparticles as probes for in vivo labeling, tracking and imaging stem cells by MRI. Semiconductor glyconanoparticles have been also prepared and used as fluorescent probes in cellular systems.

Drug delivery & Targeting Group. GDLF-HUVH. Barcelona

At CIBBIM-Nanomedicine they currently test the efficacy and toxicity of diverse delivery systems, such as polymers, dendrimer, 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 are complemented with non-invasive optical imaging technologies, which help to accelerate the preclinical development of novel therapeutic and/or diagnostic agents.

Oncogenesis & Antitumor Group. GOA-HSCSP. Barcelona



The group has a broad expertise in the development of new antitumor compounds in collaboration with the pharmaceutical industry. They 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.

Physical-Chemistry Group. FQ-UV. Valencia



Monitoring in tissue samples and cellular systems by microimaging and NMR spectroscopy. They develop new micro-chambers (lab-on-a-chip) for long term monitoring of tissue samples and organotypic cellular systems by NMR microscopy and optical techniques of molecular imaging.

Research Group in Biomedical App. NMR. GABRMN-UAB. Barcelona



The basic line of the group for the last 6 years has been the improvement of the diagnosis and prognosis of anomalous brain masses in humans in a non-invasive manner by means of nuclear magnetic resonance (NMR). Although this has been the main line, we can also consider some subsections as well as subjects associated to said main subject within the group's interests, taking into account, however, either the methodology (NMR) or the pathology studied (brain pathology, cancer) as a connective link. These subsections and associated subjects are: i) Characterization of the type and degree of human brain tumors by imaging (MRI) and nuclear magnetic resonance spectroscopy (MRS) in vivo, ii) Development of classifiers (recognition of patterns, RP) and their implementation in a graphic interface for facilitating the diagnosis based on evidence in computer systems aiding in diagnosis (SAD), iii) Search for tumor progression molecular markers that can be potentially used in vivo by means of ex vivo and in vitro studies of cell models, animal models and their biopsies, and iv) Molecular phenotyping of tumor progression in vivo.

Bioengineering & Telemedicine Group. GBT-UPM. Madrid

The group is active in the following lines of research: A) Telemedicine: i) Methodologies of formal modeling of processes and systems for providing new telemedicine services, ii) Development of technology platforms in standardization and interoperability of systems of telemedicine and electronic clinical records, according to European standard EN13606 and iii) Development, implementation and evaluation of care services based on telemedicine. B) Biomedical imaging: i) Medical images in technologies for simulating and planning minimally invasive surgery (MIS), ii) cDNA microarray image analysis and iii) Interoperability of Information Technologies in the area.

Nanomembrane Group. NANOMEMB-UB. Barcelona

The group 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 (ex: a protein). Besides, conjugation to fluorescent dyes allows further following of their cellular internalization in vitro.

Location:

Adress: Jordi Girona 18-26, Barcelona

If you need advise use this map:

http://maps.google.es/maps?f=q&source=s_q&hl=es&geocode=&q=jordi+girona+18-26,+barcelona&ll=41.403659,2.17074&sspn=0.052018,0.1684&ie=UTF8&hq=&hnear=Carrer+de+Jordi+Girona,+18,+08034+Barcelona,+Catalu%C3%B1a&ll=41.387402,2.114096&spn=0.013008,0.0421&z=15

Access:

Bus:

- 7** (Diagonal Mar - Zona Universitària)
- 33** (Zona Universitària - Verneda)
- 54** ([Estació del Nord - Campus Nord](#))
- 60** ([Pl.Glòries - Zona Universitària](#))
- 67** (Pl. Catalunya - Cornellà)
- 68** ([Pl.Catalunya - Cornellà](#))
- 74** ([Zona Universitària - Fabra i Puig](#))
- 75** ([Les Corts - Av. Tibidabo](#))
- 113** ([Joan XXIII - Barri La Merçè](#))

Underground:

Línia 3 Estació Palau Reial ([sortida Av. Diagonal](#))

Línia 3 Estació Zona Universitària ([sortida Av. Diagonal](#))

Tramway:

Trambaix T1,T2,T3 Estació Zona Universitària