



**COST TD1004 Action**

**Theranostics Imaging and Therapy: An Action to Develop Novel Nanosized Systems  
for Imaging-Guided Drug Delivery**

**Annual Meeting**

**September 1<sup>st</sup>- September 3<sup>rd</sup>, 2013**

**Meeting Venue:**

**Hotel Stratos Vassilikos, Athens, Greece**

## **Meeting Programme**

### **Sunday, September 1<sup>st</sup>, 2013**

**14:00 – 15:00 Registration**

**15:00 – 15:15 Overall Lecture WG3, Robert Muller (University of Mons, Belgium):  
Preparation and selection of targeting vectors**

**15:15 – 16:00 Lectures WG3**

15:15 – 15:30 Development of High-Relaxivity and Luminescent Silica Nanoparticles As Multimodal Agents for Medical Imaging, E. Lipani, S. Laurent, M. Surin, L. Vander Elst, P. Leclère, R.N. Muller

15:30 – 15:45 Theranostic nanoparticles for lung tumors, F. Lux, A. Bianchi, S. Dufort, N. Tassali, J.-L. Coll, Y. Crémillieux, O. Tillement

15:45 – 16:00 Coordination polymer nanoparticles in medicine, F. Nador, F. Novio, J. Lorenzo, D. Ruiz-Molina

**16:00 – 16:30 Coffee Break**

**16:30 – 17:30 Lectures WG3 (continued)**

16:30 – 16:45 Apoferritin loaded with Gd-HPDO3A and curcumin as a theranostic agent, S. Geninatti

16:45 – 17:00 Initial *in vitro* and *in vivo* assessment of Au@DTDTPA-RGD nanoparticles labeled with Ga-68, C. Tsoukalas, G. Laurent, T. Tsoதாக, R. Bazzi, M. Paravatou-Petsotas, S. Xanthopoulos, S. Roux and P. Bouziotis



17:00 – 17:15 In vivo evaluation of functionalized polymeric NPs on memory deficit of Alzheimer's disease mice model, D. Carrodari, B. Le Droumaguet, J. Nicolas, D. Brambilla, E. Nespoli, E. Salvati, L. De Kimpe, C. Zona, C. Airoidi, C. Balducci, M. Zotti, M. Canovi, M. Gobbi, O. Flores, F. Nicotra, W. Scheper, F. Re, M. Masserini, G. Forloni, M. Salmona, P. Couvreur, K. Andrieux

17:15 – 17:30 GN8 Fluorescent Analogues with Concomitant Therapeutic and Diagnostic Activities in Prion Diseases, M. Staderini, S. Aulic, V. González-Ruiz, G. Bianchini, L. Morelli, A. D'Onofrio, H. Ngoc Ai Tran, N. Cabezas, M.A. Martín, G. Legname, J.C. Menéndez, M.L. Bolognesi

**18:00**        **Museum Visit**

**20:30**        **Dinner**

## **Monday, September 2nd, 2013**

**09:00 – 09:45 Invited Lecture: Professor Mike Averkiou, University of Cyprus**

**09:45 – 10:00 Overall Lecture WG4, Gerben Koning (Erasmus MC, Rotterdam, The Netherlands): Theranostic agents responsive to endogenous and external stimuli**

**Chairs: Chantal Pichon and Gerben Koning**

**10:00 – 11:10 Lectures WG4**

**10:00 – 10:25** Light-directed drug delivery by photochemical internalization, Anders Hogset

**10:25 – 10:50** Enzymatic degradation induced drug release and imaging of sphingomyelin liposomes, Oula Penate Medina

**10:50 – 11:10** Microbubble-mediated drug delivery, Twan Lammers

**11:10 – 11:30 Coffee Break/ Poster Viewing**

**11:30 – 12:50 Lectures WG4 (continued)**

**11:30 – 11:45** New cationic liposomes bubbles for nucleic acids transfer, Anthony Delalande

**11:45 – 12:00** Ultrasound-sensitive microbubbles for stroke therapy - toward understanding of the mechanisms of blood clot destruction with microbubbles, ultrasound and rtPA, Eric Allémann

**12:00 – 12:20** Overcoming limitations in Nanoparticle Drug Delivery. Thermodox: An Update, David Needham

**12:20 – 12:35** Characterization of supported lipid membranes – toward the development of nano-sized drug carriers for hyperthermia applications, Sofia Svedhem

**12:35 – 12:50** Title to be announced, Selman Yavuz

**12:50 – 13:40** Lunch

**13:40 – 15:30** Management Committee Meeting

**15:30 – 15:45** Overall Lecture WG2, Ruth Schmid (SINTEF, Trondheim, Norway):  
Nanocarriers for theranostic agents

**15:45 – 16:30** Lectures WG2

15:45 – 16:00 Comparison of targeted nanocarrier systems for the treatment of inflammatory disease, Gert Storm

16:00 – 16:15 Folic acid conjugated polymeric nanocapsules for passive and active targeting of cancer, Khuloud Al-Jamal

16:15 – 16:30 Microbial versus human cells – implications for targeting, Nuno Azevedo

**16:30 – 17:00** Coffee Break

**17:00 – 18:00** Lectures WG2 (continued)

17:00 – 17:15 Edelfosine nanosystems overcome drug resistance in leukemic cell lines, Maria Blanco-Prieto

17:15 – 17:30 Biomimetic apatite nanocrystals: a new platform for nanomedicine, Michele Iafisco

17:30 – 17:45 Selectively modified porous silicon nanoparticles with the functionalities of imaging, targeting and triggered drug release, Wujun Xu

17:45 – 18:00 *In vivo* antitumor efficacy and biodistribution of polyaminoacid nanocapsules, Noemi Csaba

**18:00 – 19:30** Cheese and Wine Reception with Poster Viewing

**Tuesday, September 3<sup>rd</sup>, 2013**

**09:00 – 09:45 Invited Lecture: Professor Cathy Cutler, University of Missouri**

**09:45 – 10:00 Overall Lecture WG1, Renata Mikolajczak (National Centre for Nuclear Research Radioisotope Centre POLATOM): Imaging reporters for theranostic agents**

**10:00 – 11:15 Lectures WG1**

10:00 – 10:15 The need for imaging in combination therapy, a Theranostic approach, Helmut R. Mäcke

10:15 – 10:30 Bombesin antagonists as new PET tracers for imaging of prostate cancer, Eleni Gourni

10:30 – 10:45 Multimodal imaging of tumor-targeting peptides, Marion de Jong

10:45 – 11:00 Multimodal imaging probes for the detection of amyloid plaques, F. Martins, J.-F. Morfin, C. Geraldès, E. Toth

11:00 – 11:15 Systematic study for optimizing the Radiolabelling of AGuIX® Multimodal Nanoparticles, E. Ntsiba, C. Truillet, F. Lux, C. Alliot, F. Boschetti, S. Huclier, O. Tillement

**11:15 – 11:45 Coffee Break/ Poster Viewing**

**11:45 – 13:45 Lectures WG1 (continued)**

11:45 – 12:00 Nanozeolite-LTL with Gd<sup>3+</sup> deposited in the large and Eu<sup>3+</sup> in the small cavities as a bimodal MRI-Optical probe, Kristina Djanashvili, Florian Mayer, Wuyuan Zhang, Thomas Brichart, Olivier Tillement, Célia Bonnet, Éva Tóth, and Joop A. Peters

12:00 – 12:15 Substance P - nanozeolite labeled with <sup>224</sup>Ra and <sup>225</sup>Ra - new potential radiobioconjugate for internal alpha therapy, Aleksander Bilewicz

12:15 – 12:30 <sup>64</sup>Cu radiolabeled nanomaterials as bimodal contrast agent for optical imaging and Positron Emission Tomography (PET), Aline Nonat, Akram Yahia-Ammar, Amandine Roux and Loïc Charbonnière

12:30 – 12:45 Efficient radiometal-labelling of drug delivery systems utilizing water/ethanol mixtures, F. Rösch, M. Malo-Cruz

12:45 – 13:00 Near-infrared Imaging in Living Cells with Lanthanides: Yb<sup>3+</sup> nanoMOF, Alexandra Collet, Stephane Petoud

13:00 - 13:15 New insights on the role of tissue microenvironment parameters that affect the release of Gd<sup>3+</sup> ions from MRI contrast agents, Z. Baranyai, E. Brücher, I. Tóth, F. Uggeri, A. Maiocchi and S. Aime

13:15 – 13:30 Development of Ca<sup>2+</sup> Responsive Contrast Agents for fMRI, Sandip Vibhute

13:30–13:45 Nanobody-based Targeted Radiotherapy for Cancer Treatment, Matthias D'Huyvetter, Cécile Vincke, Catarina Xavier, Nick Devoogdt, An Aerts, Nathalie Impens, Sarah Baatout, Serge Muyldermans, Vicky Caveliers, Tony Lahoutte

### **13:45 – 14:30 Lunch**

### **14:30 – 15:00 Lectures WG1 (continued)**

14:30 – 14:45 High MRI performance mesoporous silica nanoparticles functionalized with Gd-chelates as potential theranostic systems, Lorenzo Tei, Mauro Botta, Fabio Carniato

### **14:45 – 15:00 Overall Lecture WG 5, George Loudos (Technological Educational Institute of Athens): Set-up of preclinical theranostic protocols**

### **15:00 – 16:00 Lectures WG5**

15:00 – 15:15 Superparamagnetic iron oxide nanoparticles for local thermotherapy: potential and limitations, Olivier Jordan

15:15 – 15:30 Bimodal Imaging of Sentinel Lymph Node with <sup>99m</sup>Tc(CO)<sub>3</sub>-labeled Mannosylated Nanoparticles bearing a NIR-fluorophore, Maurício Morais, Catarina Xavier, Sophie Hernot, Tony Lahoutte, Vicky Caveliers, João D. G. Correia, Isabel Santos

15:30 – 15:45 Quantitative MRI approaches for tracking nano-sized systems, Klaas Nicolay, Rik P.M. Moonen, Gustav J. Strijkers

15:45 – 16:00 Non invasive temperature measurements during hyperthermia sessions with a near infrared camera, Spiridon Spirou, Lazaros Palamaris, Eirini Fragogeorgi, George Loudos

### **16:00 – 17:00 Coffee break and closing of meeting**