

CRS Italy Chapter
Workshop 2011



NANOSTRUCTURED DEVICES FOR
DRUG DELIVERY: FROM SMALL
MOLECULES TO BIOTECH DRUGS
Rome, 17-19 November 2011



NANOSTRUCTURED DEVICES FOR DRUG DELIVERY: FROM SMALL MOLECULES TO BIOTECH DRUGS

Invited speakers

Prof. Moen Moghimi, Copenhagen University.
Prof. Achim Göpferich, University of Regensburg
Prof. Michele Caraglia, Seconda Università degli Studi di Napoli
Dr. Paolo Gasco, Nanovector
Prof. Gabriele Grassi, Università degli Studi di Trieste
Dr. Giovanni Valbusa, Bracco
Prof. Manfred Ogris, Ludwig Maximilian University, Munchen
Dr. Bastien Castagner, ETH, Zurich
Prof. Massimo Conese, Università di Foggia
Dr. Mario Maio, Serono
Dr. Giulio Caracciolo, Sapienza Università di Roma

Organizing Committee

Franco Alhaique
Paolo Caliceti
Giuseppe De Rosa
Pietro Matricardi
Tommasina Coviello
Chiara Di Meo
Claudia Cencetti
Carlotta Marianecchi
Maria Carafa

Program

Thursday November 17th, 2011
15.00-19.00
Friday November 18th, 2011
9.00 -13.00, 15.00-19.00
Saturday November 19th, 2011
9.00-13.00

**Oral contributions
selected among the
submitted abstracts**

Technical sessions

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Nanotechnologies for drug delivery: from small drugs to gene delivery

Thursday 17

Workshop Opening

14.30 – 15.00 Franco Alhaique, *Sapienza Università di Roma, Rome, Italy*
Paolo Caliceti

Opening lecture

Introduction: Bice Conti

15.00 - 15.50 Nanomedicine Today
Moein Moghimi, Copenhagen University, Copenhagen, Denmark

Nanotechnologies and cancer: therapeutic and diagnostic opportunities

Chairmen: Gennara Cavallaro - Paolo Blasi

- 15.50 - 16.35 Nanotechnologies and clinical implications in cancer therapy
Michele Caraglia, Seconda Università di Napoli, Naples, Italy
- 16.35 - 16.45 New self-assembling nanoparticles for bisphosphonate delivery in cancer
Giuseppe De Rosa, Università degli Studi di Napoli Federico II, Naples, Italy.
- 16.45 - 16.55 Novel pH sensitive polymeric micelles for controlled release of anticancer drugs
Stefano Salmaso, Università degli Studi di Padova, Padua, Italy
- 16.55 - 17.15 Drug delivery and targeting using human serum albumin
Mark Perkins, Novozymes Biopharma, UK
- 17.15 - 17.40 Coffee break

Chairmen: Achim Göpferich - Sara Nicoli

17.40 - 18.10 Different approaches in SLN formulation for cancer therapy
Paolo Gasco, Nanovector, Turin, Italy

- 18.10 - 18.40 Dynamic Contrast Enhanced MRI method for characterization of macromolecular and nano-sized drugs delivery in pathological tissues
Giovanni Valbusa, Bracco, Turin, Italy
- 18.40 – 19.00 AvidinOX® for tissue targeted delivery of biotinylated therapeutics
Rita De Santis, Sigma Tau, Pomezia, Italy
- 19.00 - 19.10 Lecithin/chitosan nanoparticles for tamoxifen oral delivery: permeation studies
Stefano Barbieri, Università degli Studi di Parma, Parma, Italy
- 19.10 – 19.20 Superparamagnetic polymeric nanoparticles for anticancer drug delivery: preparation, characterization and cytotoxicity studies.
Cinzia Scialabba, Università degli Studi di Palermo, Palermo, Italy

Drug delivery: history and translation

21.30 – 22.30 *Chairmen: Stefano Salmaso - Paolo Blasi*

Lecture and round table

Friday 18

Nanotechnologies and nucleic acid delivery

Chairmen: Bastien Castagner-Pietro Matricardi

- 9.00 - 9.40 Nucleic acid based drugs as potential novel therapeutic tools: the state of the art
Gabriele Grassi, Università degli Studi di Trieste, Trieste, Italy
- 9.40 - 10.20 Combinatorial cancer gene therapy with targeted synthetic gene vectors
Manfred Ogris, University of Munich, Germany
- 10.20 - 10.30 Cationic nanostructured lipid carrier (NLC) and monoolein aqueous dispersions (MAD) as potential carriers for nucleic acids
Rita Cortesi, Università degli Studi di Ferrara, Ferrara, Italy
- 10.30 - 11.00 Coffee break

Charimen: Moen Moghimi – Giuseppe De Rosa

- 11.00 - 11.40 Nucleic acid nanocarriers based on alkylmethacrylic acid copolymers
Bastien Castagner, ETH, Zurich, Switzerland
- 11.40 - 12.20 Nanocomplexes and polyplexes for gene delivery in respiratory diseases
Massimo Conese, Università degli Studi di Bari, Italy
- 12.20-12.30 In vitro behaviour of multicomposite cationic SLN as new platform for
pDNA delivery
Eleonora Vighi, Università di Modena e Reggio Emilia, Modena, Italy
- 12.30-13.15 At the forefront of gene delivery: the importance of understanding the
molecular mechanisms of nanocarrier-cell interaction
Giulio Caracciolo, Sapienza Università di Roma, Rome, Italy
- 13.15-13.30 Light scattering techniques for the characterization of nanostructured
devices for drug delivery: measurement principle and applications
Alice Brun, ALFATEST, Italy

Nanodevices and their interaction with cells

Charimen: Massimo Masserini–Roberta Cavalli

- 15.00 - 15.50 The art of controlling nanoparticle interactions with cells
Achim Göpferich, University of Regensburg, Regensburg, Germany
- 15.50 - 16.00 Leptin-conjugated nanoparticles as drug delivery system to the brain,
Luca Badiali, Università di Modena e Reggio Emilia, Modena, Italy
- 16.00 – 16.10 Gellan-prednisolone Nanogels. A New Tool for Drug Delivery Applications
Pietro Matricardi, Sapienza Università di Roma, Rome, Italy
- 16.10 – 16.20 Respirable nano-embedded microparticles for prolonged delivery of
antibiotics: potential in pseudomonas aeruginosa opportunistic lung
infections
*Francesca Ungaro, Università degli Studi di Napoli Federico II, Naples,
Italy*

- 16.20 -16.30 Non-ionic surfactant vesicles for ammonium glycyrrhizinate delivery: in vitro characterization and in vivo evaluation on mice oedema
Carlotta Marianecchi, Sapienza Università di Roma, Rome, Italy
- 16.30 – 16.40 In vitro and in vivo characterization of lipid nanoparticles for brain drug targeting
Paolo Blasi, Università degli Studi di Perugia, Perugia, Italy
- 16.40 – 16.55 Microincapsulation of API in polymeric matrixes, technological innovations
BUCHI
- 16.55-17.30 Coffee break

Nanotechnologies in drug delivery: new challenges

Charimen: Cristina Ciocca – Rita De Santis

- 17.30 - 17.55 Nanoparticles for therapy and diagnosis of Alzheimer Disease (NAD): progress report
Massimo Masserini, Università degli Studi di Milano Bicocca, Milan, Italy
- 17.55 - 18.20 Towards oral drug delivery of cyclosporine-A using mesoporous silica particles
Chris van der Walle, University of Strathclyde, Glasgow, UK
- 18.20 – 18.40 Nanotechnologies: new tools for early drug development
Cristina Ciocca, Accelera S.r.l. , Nerviano, Italy
- 18.40 - 18.50 A Hyaluronic Acid–Salmon Calcitonin Conjugate for the Treatment of Osteoarthritis
Gianfranco Pasut, Università degli Studi di Padova, Padua, Italy
- 18.50-19.00 Elastin-g-PLGA nanoparticles loaded with dexamethasone dipropionate as potential candidates to treat restenosis: characterization and biological evaluation
Fabio Palumbo, Università degli Studi di Palermo, Palermo, Italy
- 20.30 Dinner

Saturday 19

Characterization of nanodevices: what's new!

Chairmen: Manfred Ogris- Stefano Salmaso

- 9.00 - 9.40 Nano from inside: new inorganic carriers for poorly soluble drugs
Mario Maio, Serono
- 9.40 - 10.00 NMR methods in the characterization of cyclodextrin-capped gold nanoparticles
Gloria Uccello-Barretta, Università degli Studi di Pisa, Pisa, Italy
- 10.00 - 10.15 Analysis of binding organic compounds to nanoparticles with Isothermal Titration Calorimetry
Marco Coletti, TA Instruments
- 10.15-10.25 Binding of poorly water soluble drugs, doxorubicin and artemisinin, to a β -cyclodextrin polymer: a study with optical spectroscopic methods
Ilse Manet, ISOF-CNR, Bologna, Italy
- 10.25 - 10.40 Quantitative analysis of submicron particles
Riccardo Cossi, QI Technologies
- 10.40 - 11.10 Coffee break

Chairmen: Federica Balzano - Gianfranco Pasut

- 11.10-11.20 New cyclodextrin-based lipid nanocapsules for the delivery of Amphotericin B
Roberta Cavalli, Università degli Studi di Torino, Turin, Italy
- 11.20 - 11.30 Effect of iontophoresis on the release of BSA from agarose hydrogels for ophthalmic application
Sara Nicoli, Università degli Studi di Parma, Parma, Italy
- 11.30 - 11.40 Novel three dimensional biodegradable scaffold based on functionalised poly lactic acid for tissue engineering
Rossella Dorati, Università degli Studi di Pavia, Pavia, Italy



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- 11.40 - 11.50 Tacrine HCl nasal delivery to central nervous system using antioxidant liposomes
Giuseppe Corace, Università degli Studi di Bologna, Bologna, Italy
- 11.50 - 12.00 Title to be confirmed
Heinrich Haas, University of Mainz, Mainz, Germany
- 12.00 – 12.10 Selected Contribution
- 12.10 – 12.20 Selected Contribution
- 12.20 – 12.30 Selected Contribution
- 12.30-13.00 Concluding remarks: Paola Mura - Chris van der Walle