

Primiano Pio Di Mauro,

Biomedical Engineer, PhD in Bioengineering

pri.dimauro@gmail.com

Mobile: 0034 689326511

Carrer de la Diputació 478 1^o2^a, 08013, Barcelona, Spain

<https://www.linkedin.com/in/pridimauro/>

Experience

Nov 2016 – Present

Postdoc Research Scientist

Institut de ciència de materials de Barcelona (ICMAB - CSIC), Barcelona, Spain

Design and physical-chemical and biological characterization of nanostructured systems and nanovehicles (polymeric and vesicular) for the encapsulation of active pharmaceutical ingredient. Development of nanomedicines or nanoconjugates with better properties of internalization, bioavailability, therapeutic efficacy and pulmonary, ocular, dermal and other pathways administration.

Jul 2011 – Dec 2014

Research Scientist

Sagetis Biotech, Barcelona, Spain

Designing of versatile and polymeric-based platforms for drug delivery through difficult-to-cross barriers (e.g blood-brain barrier, intestinal mucus gel layer). Developing a nano-system to take drugs (including small molecules, peptides and proteins) across the blood brain barrier via surface-modified biodegradable nanoparticles.

Key achievements:

- Developed an engineered and versatile targeted nano-platform for the delivery of chemotherapeutic agent across the blood brain barrier (BBB) with the aim of treating brain tumors.
- Experienced working in multitasking and multidisciplinary teams.
- Contributed as inventor, to the proof-of-concept and patented technology of the startup company.
- Contributed to the technological transfer and appropriately protection via Intellectual Property provisions.

Sep 2010 – Jan 2015

Ph.D. Researcher

Bioengineering Department, IQS, Universitat Ramon Llull, Barcelona, Spain

"Development of Novel and Multifunctional Polymeric Nanoparticles for Brain Targeted Drug Delivery"

Special mention Doctorate Cum Laude

Advisor: Prof. Salvadòr Borros

Laboratory of Biomaterials and Materials Engineering group (GEMAT-IQS)

Key achievements:

- Developing a modified nanoprecipitation method in order to obtain customized NPs with increased drug loading and customizing release profile.
- Obtaining functionalized NPs for the potential use as drug delivery vectors for efficiently transport and release of PTX into the brain and evaluate the in vitro efficiency.
- Evaluation of the in vivo characteristics of the NPs and assess their biological profile in terms of physicochemical properties, pharmacokinetics and bio-distribution by means of novel radiolabeling strategies.

Nov 2011 – Mar 2012

Visiting Fellow

CIC biomaGUNE, Department of Radiochemistry and Nuclear Imaging
Donostia / San Sebastián, Basque Country, Spain
Visiting Researcher at the Jordi Llop's radiochemistry research group.

Key achievements:

- Radioactive labeling of polymers and peptides.
- Synthesis of 18-F and 125-I radiolabeled and peptide-functionalized Nanoparticles with applications in drug delivery.
- Toxicity study, pharmacokinetics, in vivo and ex vivo biodistribution studies using a combination of molecular imaging techniques (PET-CT, SPECT-CT/ Autoradiography).

May 2010 – Jun 2011

Research Assistant

Bioengineering Department, IQS, Universitat Ramon Llull, Barcelona, Spain

Key achievements:

- Synthesize novel biodegradable polymers to be employed for developing polymeric drug delivery system.
- Fabricate nanoparticles and optimize a modified nanoprecipitation method to achieve a clear correlation between NPs characteristics and formulation parameters.

Jan 2009 – Apr 2010

Research Assistant

Bioengineering Department, Biomaterial and Tissue Engineering Laboratory, Politecnico di Milano, Italy

Key achievements:

- Fabrication and characterization of electrospun scaffolds and micro-structured surfaces for the study of the interaction between muscle cells and biomaterials according to the theory of Contact Guidance.

Journal Publications

Novel 18F labeling strategy for polyester-based NPs for in vivo PET-CT imaging.

Bioconjugate Chemistry 02/2015; 26(3). DOI:10.1021/acs.bioconjchem.5b00040

Authors: Primiano Pio Di Mauro, Vanessa Gómez-Vallejo, Zurine Baz, Jordi Llop, Salvador Borrós

Development of High Drug Loaded and Customizing Novel Nanoparticles for Modulated and Controlled Release of Paclitaxel.

Pharmaceutical Research 06/2014; 31(12). DOI:10.1007/s11095-014-1434-z

Authors: Primiano Pio Di Mauro, Salvador Borrós

Peptide-functionalized and high drug loaded novel nanoparticles as dual-targeting drug delivery system for modulated and controlled release of paclitaxel to brain glioma.

(Pending) *Journal of Controlled Release*

Authors: Primiano Pio Di Mauro, A. Cascante, P. Brugada-Vila, J.Llop, S. Borrós

Patents

POLYMERIC NANOPARTICLES FOR DRUG DELIVERY

Patent US20140213641A1 31th July 2014 Also published as:

EP2706989A1, WO2012153286A1 Inventors: Primiano Pio Di Mauro, Salvador Borrós

Conference Proceedings

- July 2014* **Design of Targeted Polyester Nanoparticles for Drug Delivery to the Brain**
41st Annual CRS Meeting, Controlled Release Society, Chicago, USA
- June 2014* **Neurotoxicity and brain permeability of targeted polymeric nanoparticles**
Neurogune 2014 - 2nd Basque Neuroscience meeting 2014
- June 2013* **Permeability and toxicological profiles of targeted nanoparticles in Blood-Brain Barrier in vitro models for Brain Drug Delivery**
European Society of Toxicology In Vitro, International Conference
- May 2013* **Design of Targeted Polyester Nanoparticles for Drug Delivery to the Brain**
CLINAM, European Summit for Clinical Nanomedicine, Basel, Switzerland
- Nov.2012* **Development of biodegradable polyester nanoparticles for drug delivery to mucosal tissue**
European Project "Alexander" Frankfurt, Germany

Certifications

- June.2011* **Fundamental Radiation Concept, Source and effect of radiation; radioprotection and laboratory techniques; Radioisotope laboratory techniques**
CIC biomaGUNE, San Sebastian, Spain

Awards

- Jan.2015* **Special mention Doctorate Cum Laude**

Projects

- Oct.2012* **European Project "Alexander" Mucus Permeating Nanoparticulate drug delivery System**
"Development of biodegradable polyester nanoparticles for drug delivery to mucosal tissues"

Courses

- TEM transmission Electron Microscopy applied to Material Science and Biology Course
- Cytotoxicity Workshop
- ACQUITY UPLC H-Class Training
- Empower 3 Chromatography Data Software Training
- Quality practiced in basic Biomedical research: Logbooks
- 2nd Summer School on Medicines "From ideas to drug, new trends in pharmaceutical innovation"

Education

- May 2010 – Dec 2014* **IQS, Institut Químic de Sarrià**
Doctor of Philosophy, Bioengineering, Special mention Doctorate Cum Laude
Barcelona, Catalonia, Spain
- May 2007 – Apr 2009* **Politecnico di Milano**
Master of Science, Biomedical Engineering
Milano, Lombardy, Italy
- Sep 2003 – Apr 2007* **Politecnico di Milano**
Bachelor of Science, Biomedical Engineering
Milano, Lombardia, Italy

Skills & Activities

Skills Nanoparticles Synthesis and Characterization, Dynamic Light Scattering (DLS), Nanoparticles Tracking Analysis (NTA), Biomaterials, Nanoscience, Polymerization, Zeta Potential, Nanomaterials, Material Characterization, Nanomaterials Synthesis, Polymers, Polymeric Materials, Cancer Nanotechnology, Nanomedicine, HPLC, UPLC, GPC, Drug Delivery, Targeted Drug Delivery, DSC, NMR, PET, SPECT.

Languages English, Italian, Spanish, Catalan

Hobbies New technologies, Analogical Photography, Yoga, Acroyoga, Travel

References

Prof. Salvador Borrós i Gomez
Departamento de Biongeniería
Grupo de Ingeniería de Materiales
(GEMAT)
IQS, Universidad Ramon Llull
Via Augusta 390, E-08017
Barcelona, Spain
Tel. +34 932 672 000
salvador.borros@iqs.url.edu

Jordi Llop Roig, PhD
Principal investigador
Head of Radiochemistry
CIC biomaGUNE
Pº Miramón 182,
Guipúzcoa, Spain 20009
Tel. +34 943 00 53 33
jllop@cicbiomagune.es

Dr. Victor Ramos Pèrez
Departamento de Bioingeniería
Grupo de Ingeniería de Materiales
(GEMAT)
IQS, Universitat Ramon Llull
Via Augusta 390, E-08017
Barcelona, Spain
Tel. +34 93 267 20 00
victor.ramos@iqs.url.edu

Dra. Vanessa Gómez Vallejo
Platform Manager
Radiochemistry
CIC biomaGUNE
Pº Miramón 182,
Guipúzcoa, Spain 20009
Tel. +34 943 00 53 30
vgomez@cicbiomagune.es

