




**PERSONAL INFORMATION** **Giovanna Pitarresi**

 Dipartimento di Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche (STEBICEF), University of Palermo, Via Archirafi 32, 90123, Palermo

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 Scopus Author's ID 7003513833

 | Nationality Italian

**Current Position:** Full Professor SSD CHIM/09

**Scientific Profile:****Since 1992 Main research fields**

Synthesis and chemical, physicochemical and biological characterization of biocompatible polymers – Hydrogels for drug delivery – Scaffolds for tissue engineering – Nanoparticles – Microparticles

**Main realized research projects**

ARS01\_00693 PON 2014-2020 dal titolo “BONE++ - Svil MicroNanotecn per Predit, Diagn, Terapia e Tratt Rigen delle Alteraz Patol Osso e Osteo- Articol”

POR FESR Sicilia 2014-2020 – Codice progetto 087219090463, dal titolo “Micro e nanosistemi innovativi per la cura efficace del Tumore al Fegato” (LiverSmartDrug) (azione 1.1.5)

PON01\_01434 PON 2007-2013 – (MARGINE), dal titolo “Piattaforma Scientifico-Tecnologica Mirata allo Sviluppo di Nuovi Approcci Terapeutici nel Trattamento delle Principali Patologie Degenerative della Retina” (REACT)

PON02\_00355\_2964193 - (MARGINE), dal titolo “Sviluppo di Micro e Nano-Tecnologie e Sistemi Avanzati per la Salute dell'uomo – HIPPOCRATES del Progetto "Sviluppo di Micro e Nano-Tecnologie e Sistemi Avanzati per la Salute dell'uomo HIPPOCRATES"

**Acquired skills**

Preparation and chemical, physicochemical and biological characterization of biocompatible polymers and related devices for precision medicine. Expert of injectable hydrogels and three dimensional devices for modified drug release and/or cell therapy

**3 most relevant publications or patents:**

G. Giammona, G. Pitarresi, F.S. Palumbo, C.L. Romanò, E. Meani, E. Cremascoli  
“Antibacterial hydrogel and use thereof in orthopedics”  
WO 2010/086421 A1

G. Pitarresi, M. Cervello, A. Azzolina, R. Puleio, G.R. Loria, S. Puleo, G. Giammona  
“Nanoparticles for the controlled release of Sorafenib and Sorafenib derivatives”  
WO 2018/150302 A1

C. Fiorica, F.S. Palumbo, G. Pitarresi, R. Puleio, L. Condorelli, G. Collura, G. Giammona.  
*Int. J. Pharm.*, **589**, 119879 (2020). A HYALURONIC ACID/CYCLODEXTRIN BASED

INJECTABLE HYDROGEL FOR LOCAL DOXORUBICIN DELIVERY TO SOLID TUMORS. DOI: 10.1016/j.ijpharm.2020.119879

## WORK EXPERIENCE

### **2020-Current**

Coordinator of Research Doctorate Course in Molecular and Biomolecular Sciences, Palermo University

### **2015-2021**

Responsible for "Pharmaceutical and Technological Chemistry" section of STEBICEF Department, Palermo University

### **2011- Current**

Full Professor, SSD CHIM/09, Department of Biological Chemical and Pharmaceutical Sciences and Technologies (STEBICEF), Palermo University

### **2010**

Substitute of the Director of the Department of "Chimica e Tecnologie Farmaceutiche" of Palermo University

### **2010 – Current**

Head of the Laboratory of Organic Chemical Processes. Synthesis and Purification of Polymeric Materials at the Department of Chemistry and Pharmaceutical Technologies (now STEBICEF) of the University of Palermo

### **2010 - 2016**

Professor associate to Istituto di Biomedicina ed Immunologia Molecolare "A. Monroy" (IBIM) - CNR Palermo

### **2001 - 2011**

Associate Professor SSD CHIM/09 Faculty of Pharmacy, Palermo University

### **2006 – 2009**

President of the Degree Course in "Scientific Information on Drug", Palermo University

### **1993 - 2001**

Researcher SSD CHIM/09 Faculty of Pharmacy, Palermo University

## EDUCATION AND TRAINING

### **1991-1993**

Frequency of Research Doctorate Course in Chemical Sciences, Cycle VI, t Palermo University

Physicochemical characterization of colloidal systems

### **1985-1990**

Honour Degree in Pharmacy at Palermo University

## PERSONAL SKILLS

## Organisational / managerial skills

- **Member of Scientific Technical Board of IFTS Course** (Istruzione e Formazione Tecnica Superiore) for “Tecnico preparatore di prodotti erboristici e cosmetici” (Progetto n° 1999.IT.16.1. PO. 011/3.0.7/9.2.14/0148) Palermo, Italy, from October 2002 until June 2004
- **Member of Scientific Board of** “VI Corso della Scuola Dottorale per la Formazione Avanzata in Discipline Tecnologico-Farmaceutiche: Polimeri Idrofili: Teoria ed Applicazioni (Calabria University, Arcavacata di Rende, Italy, 9-15 September 2006)
- **Member of Organizing Board of a Mini Symposium: "Hydrogels: from nanoparticulate drug carriers to scaffolds for tissue engineering"** in 36th Annual Meeting & Exposition of the Controlled Release Society, Innovation in Discovery, Diagnostics, and Delivery (Copenhagen, Denmark, 18-22 July 2009)
- **Additional International Scientific Committee member and reviewer for IBIC2012 3<sup>rd</sup> International Conference on Industrial Biotechnology** (Palermo, Italy, 24-27 June 2012)
- **Member of the Organizing Board of Workshop CRS Italian Chapter 2012 “Biomaterials: From Drug Delivery to Tissue Engineering”** (Palermo, Italy, 8-10 November 2012)
- **Member of Organizing Board of Workshop “Biomateriali e Ingegneria Tissutale: Nuove prospettive in medicina rigenerativa”** (Palermo, Italy, 25 September 2013)
- **Member of Organizing Board of “4<sup>th</sup> Conference on Innovation in Drug Delivery: Site Specific Drug Delivery”** (Antibes –Juan-les-Pins, France, 25-28 September 2016)
- **Member of Organizing Board of Workshop CRS Italian Chapter 2023 “Next Generation Biomaterials and Carriers: New Tools for Drug Delivery and Therapy”** (Palermo, Italy, 5-7 October 2023)

## ADDITIONAL INFORMATION

## Most relevant publications in the last 10 Years

Pitarresi, G., Palumbo, F.S., Fiorica, C., et al. *Macromol. Biosci.* **22**, 2100290 (2022). Composite Hydrogels of Alkyl Functionalized Gellan Gum Derivative and Hydroxyapatite/Tricalcium Phosphate Nanoparticles as Injectable Scaffolds for bone Regeneration. DOI: 10.1002/mabi.202100290

Fiorica, C., Palumbo, F.S., Pitarresi, et al. *Int. J. Pharm.* **610**, 121231 (2021). Ciprofloxacin releasing gellan gum/polydopamine based hydrogels with near infrared activated photothermal properties. DOI: 10.1016/j.ijpharm.2021.121231

Pitarresi, G., Martorana, A., Palumbo, F.S., Fiorica, C., Giammona, G. *Int. J. Biol. Macromol.* **162**, 1653 (2020). New gellan gum-graft-poly(D,L-lactide-co-glycolide) copolymers as promising bioinks: Synthesis and characterization. DOI: 10.1016/j.ijbiomac.2020.07.254

Fiorica, C., Tomasello, L., Palumbo, F.S., Coppola, A., Pitarresi, G., Pizzolanti, G., Giordano, C., Giammona, G. *ACS Appl. Mater. Interface* **11**, 22206 (2019). Production of a Double-Layer Scaffold for the "on-Demand" Release of Fibroblast-like Limbal Stem Cells DOI: 10.1021/acsami.9b06757

Bongiovì, F., Fiorica, C., Palumbo, F.S., Di Prima, G., Giammona, G., Pitarresi, G. *Mol. Pharm.* **15**, 5031 (2018). Imatinib-Loaded Micelles of Hyaluronic Acid Derivatives for Potential Treatment of Neovascular Ocular Diseases. DOI:10.1021/acs.molpharmaceutic.8b00620

Cervello, M., Pitarresi, G., Volpe, A.B., Porsio, B., Balasus, D., Emma, M.R., Azzolina, A., Puleio, R., Loria, G.R., Puleo, S., Giammona, G. *J. Control. Release*

266, 47 (2017). Nanoparticles of a polyaspartamide-based brush copolymer for modified release of sorafenib: In vitro and in vivo evaluation. DOI: 10.1016/j.jconrel.2017.09.014

Mauro, N., Scialabba, C., Pitarresi, G., Giammona, G. Int. J. Pharm. 526, 167 (2017). Enhanced adhesion and in situ photothermal ablation of cancer cells in surface-functionalized electrospun microfiber scaffold with graphene oxide. DOI: 10.1016/j.ijpharm.2017.04.045

Fiorica, C., Palumbo, F.S., Pitarresi, G., Bongiovi, F., Giammona, G. Carbohydr. Polym. 166, 281 (2017). Hyaluronic acid and beta cyclodextrins films for the release of corneal epithelial cells and dexamethasone. DOI: 10.1016/j.carbpol.2017.02.071

Palumbo, F.S., Puleio, R., Fiorica, C., Pitarresi, G., Loria, G.R., Cassata, G., Giammona, G. Acta Biomaterialia, 25, 205 (2015). Matrices of a hydrophobically functionalized hyaluronic acid derivative for the locoregional tumour treatment. DOI: 10.1016/j.actbio.2015.07.022

Palumbo, F.S., Volpe Bavuso, A., Cusimano, M.G., Pitarresi, G., Giammona, G., Schillaci, D. Int. J. Pharm. 478, 70 (2015) A polycarboxylic/amino functionalized hyaluronic acid derivative for the production of pH sensible hydrogels in the prevention of bacterial adhesion on biomedical surfaces DOI: 10.1016/j.ijpharm.2014.11.015

## Projects/Grants

### Scientific Responsible for following projects:

ARS01\_00693 PON 2014-2020 dal titolo "BONE++ - Svil MicroNanotecn per Predit, Diagn, Terapia e Tratt Rigen delle Alteraz Patol Osso e Osteo- Articol"  
500.000 EUROS

POR FESR Sicilia 2014-2020 – Codice progetto 087219090463, dal titolo "Micro e nanosistemi innovativi per la cura efficace del Tumore al Fegato" (LiverSmartDrug) (azione 1.1.5)  
600.000 EUROS

PON01\_01434 PON 2007-2013 – (MARGINE), dal titolo "Piattaforma Scientifico-Tecnologica Mirata allo Sviluppo di Nuovi Approcci Terapeutici nel Trattamento delle Principali Patologie Degenerative della Retina" (REACT)  
58.000 EUROS

PON02\_00355\_2964193 - (MARGINE), dal titolo "Sviluppo di Micro e Nano-Tecnologie e Sistemi Avanzati per la Salute dell'uomo – HIPPOCRATES del Progetto "Sviluppo di Micro e Nano-Tecnologie e Sistemi Avanzati per la Salute dell'uomo HIPPOCRATES  
146.000 EUROS

## Patents

- G. Giammona, G. Pitarresi, F.S. Palumbo. "Hydrogels of hyaluronic acid and alpha, beta-polyaspartylhydrazide and their biomedical and pharmaceutical uses" WO 2006/001046 A1
- M. Licciardi, G. Giammona, G. Cavallaro, G. Pitarresi, "Colloidal vectors with polyaminoacid structure for oral release of peptides and proteins and method for their production" PCT/IT 2008/000376
- G. Giammona, F.S. Palumbo, G. Pitarresi " Method to produce hyaluronic acid functionalized derivatives and formation of hydrogels thereof" WO 2010/061005 A1 (PCT/EP 2009/066060)
- G. Giammona, G. Pitarresi, F.S. Palumbo, C.L. Romanò, E. Meani, E. Cremascoli

“Antibacterial hydrogel and use thereof in orthopedics” WO 2010/086421 A1

- G. Giammona, G. Pitarresi, F. Palumbo, C.L. Romanò, E. Meani, E. Cremascoli, “Hyaluronic acid based hydrogel and use thereof in surgery” WO 2012/014180 A1
- Blanco, G. Cavallaro, G. Giammona, M. Licciardi, G. Pitarresi, D. Trombetta “Amphiphilic copolymers their preparation and use for the delivery of drugs” PCT/EP2014/071648
- G. Pitarresi, F. Palumbo, G. Giammona “Hydrogels of methacrylic hyaluronic acid derivatives for oral enzyme therapy in celiac disease” WO 2015/169849 A1
- A.R. Blanco, M.L. Bondi, G. Cavallaro, G.M.L. Consoli, E.F. Craparo, G. Giammona, M. Licciardi, G. Pitarresi, G. Granata, P. Saladino, C. La Marca, I. Deidda, S. Papasergi, P. Guarneri, S. Cuzzocrea, E. Esposito, S. Viola “Nanostructured formulations for the delivery of silibinin and other active ingredients for treating ocular diseases” WO 2016/055976 A1
- G. Pitarresi, M. Cervello, A. Azzolina, R. Puleio, G.R. Loria, S. Puleo, G. Giammona “Nanoparticles for the controlled release of Sorafenib and Sorafenib derivatives” WO 2018/150302 A1 + US 2020/0000783 A1

### Conferences **Invited Speaker**

**16-18 October, 2019** Meet in Italy for Life Sciences (Trieste, Italy), Workshop “Micro and Nanotechnologies for next generation device in Biosensors and Innovative Therapeutic Approaches”: “Nanoparticelle a base di poliamminoacidi per il rilascio modificato di Sorafenib per il trattamento del cancro”

**18-22 July, 2009** 36th Annual Meeting & Exposition of the Controlled Release Society”, Innovation in Discovery, Diagnostics, and Delivery, (Copenhagen, Denmark): “Hybrid systems for tissue engineering”

**2 March, 2002** A.TI.FAR – FEDERFARMA (Agrigento, Italy): “Nuove forme di dosaggio per la somministrazione di farmaci”

### Honours and awards **2008**

36e Salon International des Inventions des Techniques et Produits Nouveaux, Geneva Palexpo, (Geneve, Swiss): “**Prix de la delegation italienne du salon**” as a co-inventor of the patent : M. Licciardi, G. Giammona, G. Cavallaro, G. Pitarresi, “Colloidal vectors with polyaminoacid structure for oral release of peptides and proteins and method for their production”

### **2008**

36e Salon International des Inventions des Techniques et Produits Nouveaux, Geneva Palexpo, (Geneve, Swiss): “**Medaille d’or avec les felicitations du jury international du salon**” as a co-inventor of the patent : M. Licciardi, G. Giammona, G. Cavallaro, G. Pitarresi, “Colloidal vectors with polyaminoacid structure for oral release of peptides and proteins and method for their production”

### **1990**

Award “Salvatore Gueli Mosca” for the best Experimental Thesis in the academic year 1989/1990