



## **PERSONAL DETAILS**

Family name, First name: **Mandatori, Domitilla**

Researcher unique identifier(s): **ORCID: 0000-0001-9815-5200**

Date of Birth: **29<sup>th</sup> December 1987**

Nationality: **Italian**

- **Education and key qualifications**

04/2020- to date ***Postgraduate Specialisation in Biochemistry and Clinical Pathology***

“G. d’Annunzio” University of Chieti-Pescara, Italy

09/03/2018 ***PhD in Biomolecular and Pharmaceutical Sciences***

“G. d’Annunzio” University of Chieti-Pescara, Department of Medical, Oral and Biotechnological Sciences (DSMOB), Center for Advanced Studies and Technology (CAST), Italy. Tutor: Prof. Assunta Pandolfi

25/07/2013 ***Master’s degree in Medical Biotechnology***

University of L’Aquila, Italy, Department of Applied clinical and biotechnological sciences  
Tutor: Prof. Anna Maria Teti

12/10/2010 ***Bachelor’s degree in Biotechnology***

University of L’Aquila, Italy Department of Applied clinical and biotechnological sciences  
Tutor: Prof. Anna Maria Teti

- **Current position(s)**

2021 - ongoing ***Researcher (RTD-A, junior level)***

“G. d’Annunzio” University of Chieti-Pescara,

Department of Medical, Oral and Biotechnological Sciences (DSMOB)

Center for Advanced Studies and Technology (CAST), Italy

PON R&I “Ricerca e Innovazione” 2014–2020, Action IV.4 “Doctorates and research contracts on innovation issues”, DM 1061/2021, funded by the Ministry of University and Research (MUR), Italy, FSE REACT-EU.

- **Previous position(s)**

2020 - 2021 ***Post-doctoral Fellowship***

“G. d’Annunzio” University of Chieti-Pescara,

Department of Medical, Oral and Biotechnological Sciences (DSMOB)

Center for Advanced Studies and Technology (CAST), Italy

Project: Identification of new compounds for the pharmacological treatment of high-need eye diseases

2019 - 2020 ***Technical Consultant***

Dompè Farmaceutici SpA, Italy.

Project: Pre-clinical study to evaluate the effects of the release of rhNGF-PLGA microparticles from biocompatible scaffolds on corneal nerve regeneration

2018 - 2019 ***Research Fellow***

“G. d’Annunzio” University of Chieti-Pescara,

Department of Medicine and Aging Science (DMSI)

Center for Advanced Studies and Technology (CAST), Italy

Project: Biomolecular characterisation of corneal lenticules and mesenchymal stem cells with potential application in ophthalmology

**RESEARCH ACHIEVEMENTS AND PEER RECOGNITION**

- **Patents**

- European Patent n° 20179055.7-1109, 09/06/2020, “New Drug Delivery System for Ophthalmic Use”. **Authors:** Acerra Giuseppina, Detta Nicola, Pandolfi Assunta, Mastropasqua Leonardo, Nubile Mario, **Mandatori Domitilla**, Allegretti Marcello, Mantelli Flavio. **Role:** Patent inventor. Experimental development and writing
- Italian Patent n° 102023000007497, 18/04/2023 Titolo: “Isolatore per Colture Cellulari Derivate da un Tessuto Perinatale e Metodo di Isolamento di Almeno una Tipologia di Cellule da un Tessuto Perinatale” **Authors:** Pandolfi Assunta, Santalucia Manuela, Di Tomo Pamela, **Mandatori Domitilla**, Pipino Caterina, Di Pietro Natalia, Di Pietrantonio Nadia, Volta Riccardo, Brunetti Alessandro, Galassi Filippo. **Role:** Patent inventor. Experimental development and writing

- **Peer-Reviewed Publication**

- (1) Pelusi L., Hurst J., Detta N., Pipino C., Mastropasqua R., Allegretti M., Di Pietrantonio N., El Zarif M., Nubile M., Bollini S., Pandolfi A., Schnichels S., **Mandatori D** (2024). *Ex vivo model of diabetic retinopathy and evaluation of the effects of mesenchymal stem cells and rhNGF delivered by bioengineered human corneal lenticule*. Under revision to Frontiers in Endocrinology
- (2) Nadia Di Pietrantonio, Julia Sánchez-Ceinos, Mariana Shumliakivska, Alexander Rakow, Domitilla Mandatori, Pamela Di Tomo, Gloria Formoso, Tiziana Bonfini, Maria Pompea Antonia Baldassarre, Maria Sennström, Wael Almahmeed, Assunta Pandolfi, Francesco Cosentino (2024) *The inflammatory and oxidative phenotype of gestational diabetes is transmitted to the offspring via methyltransferase MLL1 induced H3K4me3*. Under revision to EURHEARTJ.
- (3) Molly Tzu-Yu Lin1, Yu-Chi Liu, Isabelle Xin Yu Lee, **Domitilla Mandatori**, Nicola Detta, Jing Ying Evelina Han, Franca Cattani, Letizia Pelusi, Leonardo Mastropasqua, Mario Nubile, Giuseppina Acerra, Marcello Allegretti, Harminder S Dua, Jodhbir S. Mehta (2024). *Evaluation of In Vitro and In Vivo Release of Recombinant Human Nerve Growth Factor from Bioengineered Human Stromal Lenticule*. Under revision.
- (4) **Mandatori D\***, Penolazzi L\*, Furlani M, Romasco T, Riberti N, D’Amico E, Pierfelice TV, Gatto ML, Notarangelo MP, Lambertini E, Mangano C, Di Pietro N, Pandolfi A, Piva R, G Iezzi, Giuliani A (2024). *3D in vitro model of biphasic calcium phosphate (BCP) scaffold combined with human osteoblasts, osteoclasts, and endothelial cells as a platform to mimic the oral microenvironment for tissue regeneration*. Under revision to Journal of Dentistry. \*co-first authors
- (5) Di Pietrantonio N, Cappellacci I, **Mandatori D**, Baldassarre MPA, Pandolfi A, Pipino C. *Role of Epigenetics and Metabolomics in Predicting Endothelial Dysfunction in Type 2 Diabetes*. Adv Biol (Weinh). 2023 Sep;7(9):e2300172. doi: 10.1002/adbi.202300172.
- (6) Schiavone V, Romasco T, Di Pietrantonio N, Garzoli S, Palmerini C, Di Tomo P, Pipino C, **Mandatori D**, Fioravanti R, Butturini E, Sabatino M, Baldassarre MPA, Ragno R, Pandolfi A, Di Pietro N. *Essential Oils from Mediterranean Plants Inhibit In Vitro Monocyte Adhesion to Endothelial Cells from Umbilical Cords of Females with Gestational Diabetes Mellitus*. Int J Mol Sci. 2023 Apr 13;24(8):7225. doi: 10.3390/ijms24087225.
- (7) Tea Romasco, Pier Michele Mandrillo, Erica Morsut, Margherita Tumedei, **Domitilla Mandatori**, Morena Petrini, Maria Cristina Curia, Francesco De Angelis, Camillo D’Arcangelo, Adriano Piattelli, Natalia Di Pietro. *Morpho-Functional Effect of a New Collagen-Based Medical Device on Human Gingival Fibroblasts: An In Vitro Study*. Biomedicines 2023, 11(3), 786; <https://doi.org/10.3390/biomedicines11030786>
- (8) Pelusi L\*, **Mandatori D\***, Mastropasqua L, Agnifili L, Allegretti M, Nubile M, Pandolfi A. *Innovation in the Development of Synthetic and Natural Ocular Drug Delivery Systems for Eye Diseases Treatment: Focusing on Drug-Loaded Ocular Inserts, Contacts, and Intraocular Lenses*.

- Pharmaceutics.** 2023 Feb 13;15(2):625. doi: 10.3390/pharmaceutics15020625. PMID: 36839947; PMCID: PMC9961328. \*co-first authors
- (9) Di Pietrantonio N, Di Tomo P, **Mandatori D**, Formoso G, Pandolfi A. *Diabetes and Its Cardiovascular Complications: Potential Role of the Acetyltransferase p300*. Cells. 2023 Jan 28;12(3):431. doi: 10.3390/cells12030431. PMID: 36766773; PMCID: PMC9914144.
  - (10) Bonelli M, Rosato E, Locatelli M, Tartaglia A, Falco P, Petrarca C, Potenza F, Damiani V, **Mandatori D**, De Laurenzi V, Stuppia L, D'Ovidio C. *Long persistence of severe acute respiratory syndrome coronavirus 2 swab positivity in a drowned corpse: a case report*. J Med Case Rep. 2022 Feb 9;16(1):72. doi: 10.1186/s13256-022-03297-8.
  - (11) Pelusi L\*, **Mandatori D\***, Di Pietrantonio N, Del Pizzo F, Di Tomo P, Di Pietro N, Buda R, Genovese S, Epifano F, Pandolfi A, Fiorito S, Pipino C. *Estrogen Receptor 1 (ESR1) and the Wnt/ $\beta$ -Catenin Pathway Mediate the Effect of the Coumarin Derivative Umbelliferon on Bone Mineralization*. \*First two authors equally contributed to the work. Nutrients. 2022 Aug 5;14(15):3209. doi: 10.3390/nu14153209. \*co-first authors
  - (12) Mastropasqua L, Nubile M, Acerra G, Detta N, Pelusi L, Lanzini M, Mattioli S, Santalucia M, Pietrangeli L, Allegritti M, Dua HS, Mehta JS, Pandolfi A, **Mandatori D**. *Bioengineered Human Stromal Lenticule for Recombinant Human Nerve Growth Factor Release: A Potential Biocompatible Ocular Drug Delivery System*. Front Bioeng Biotechnol. 2022 Jun 23; 10:887414. doi: 10.3389/fbioe.2022.887414.
  - (13) **Mandatori D**, Pandolfi A. *Dietary Bioactives: Their Role in the Prevention and Treatment of Cardiovascular and Metabolic Bone Diseases*. Nutrients. 2022 Jun 14;14(12):2459. doi: 10.3390/nu14122459.
  - (14) Damiani V, **Mandatori D**, De Fabritiis S, Bibbò S, Ferrante R, Di Giuseppe F, Ruggieri AG, Di Camillo C, Buccolini C, Pizzi D, Fazii P, Stuppia L, De Laurenzi V. *Severe acute respiratory coronavirus virus 2 (SARS-CoV-2) infection in asymptomatic vaccinated healthcare workers*. Infect Control Hosp Epidemiol. 2021 Nov;42(11):1390-1391. doi: 10.1017/ice.2021.224. Epub 2021 May 10. PMID: 33966665; PMCID: PMC8220020.
  - (15) Anaclerio F, Ferrante R, **Mandatori D\***, Antonucci I, Capanna M, Damiani V, Tomo PD, Ferrante R, Ranaudo M, De Laurenzi V, Stuppia L, De Fabritiis S. *Different Strategies for the Identification of SARS-CoV-2 Variants in the Laboratory Practice*. **Genes (Basel)**. 2021 Sep 16;12(9):1428. doi: 10.3390/genes12091428. \*Corresponding author
  - (16) Francesco De Angelis†, **Domitilla Mandatori†**, Valeria Schiavone, Francesco Paolo Melito, Silvia Valentinuzzi, Mirco Vadini, Pamela Di Tomo, Lorenzo Vanini, Letizia Pelusi, Caterina Pipino, Piero Del Boccio, Camillo D'Arcangelo, and Assunta Pandolfi. *Cytotoxic and genotoxic effects of composite resins on cultured human gingival fibroblasts*. † First two authors equally contributed to the work. Materials (Basel). 2021 Sep 11; 14(18):5225. doi: 10.3390/ma14185225.
  - (17) Petrini M, Pierfelice TV, D'Amico E, Di Pietro N, Pandolfi A, D'Arcangelo C, De Angelis F, **Mandatori D**, Schiavone V, Piattelli A, Iezzi G. *Influence of Nano, Micro, and Macro Topography of Dental Implant Surfaces on Human Gingival Fibroblasts*. Int J Mol Sci. 2021 Sep 13;22(18):9871. doi: 10.3390/ijms22189871.
  - (18) **Domitilla Mandatori†**, Letizia Penolazzi†, Letizia Pelusi, Elisabetta Lambertini, Francesca Michelucci, Annamaria Porreca, Pietro Cerritelli, Caterina Pipino, Angelo Di Iorio, Danilo Bruni, Marta Di Nicola, Roberto Buda, Roberta Piva, and Assunta Pandolfi. *Three-dimensional co-culture system of human osteoblasts and osteoclast precursors from osteoporotic patients as an innovative model to study the role of nutrients: Focus on vitamin K2*. † First two authors equally contributed to the work. Nutrients. 2021 Aug 17; 13(8):2823. doi: 10.3390/nu13082823.
  - (19) **Mandatori D\***, Pelusi L, Schiavone V, Pipino C, Di Pietro N, Pandolfi A. *The dual role of vitamin K2 in "bone-vascular crosstalk": Opposite effects on bone loss and vascular calcification*. \* First and corresponding author. Nutrients. 2021 Apr 7;13(4):1222. doi: 10.3390/nu13041222.
  - (20) Lambertini E, Penolazzi L, Pandolfi A, **Mandatori D**, Sollazzo V, Piva R. *Human osteoclasts/osteoblasts 3D dynamic co-culture system to study the beneficial effects of glucosamine on bone microenvironment*. Int J Mol Med. 2021 Apr;47(4):57. doi: 10.3892/ijmm.2021.4890. Epub 2021 Feb 19.
  - (21) Palmerini C, Piscitani L, Bologna G, Riganti C, Lanuti P, **Mandatori D**, Di Liberato L, Di Fulvio G, Sirolli V, Renda G, Pipino C, Marchisio M, Bonomini M, Pandolfi A, Di Pietro N. *Predialysis and*

- Dialysis Therapies Differently Affect Nitric Oxide Synthetic Pathway in Red Blood Cells from Uremic Patients: Focus on Peritoneal Dialysis.* Int J Mol Sci. 2021 Mar 17;22(6):3049. doi: 10.3390/ijms22063049.
- (22) Di Carlo P, Falasca K, Ucciferri C, Sinjari B, Aruffo E, Antonucci I, Di Serafino A, Pompilio A, Damiani V, **Mandatori D**, De Fabritiis S, Dufrusine B, Capone E, Chiacchiarretta P, Brune WH, Di Bonaventura G, Vecchiet J. *Normal breathing releases SARS-CoV-2 into the air.* J Med Microbiol. **2021** Mar;70(3):001328. doi: 10.1099/jmm.0.001328. Epub 2021 Feb 25.
  - (23) **Mandatori D\***, Pipino C\*, Di Tomo P, Schiavone V, Ranieri A, Pantalone S, Di Silvestre S, Di Pietrantonio N, Ucci M, Palmerini C, Failli P, Di Pietro N, Pandolfi A. *Osteogenic transdifferentiation of vascular smooth muscle cells isolated from spontaneously hypertensive rats and potential menaquinone-4 inhibiting effect.* \* First two authors equally contributed to the work. J Cell Physiol. 2019 Nov; 234(11):19761-19773. doi: 10.1002/jcp.28576.
  - (24) Ucci M, Di Tomo P, Tritschler F, Cordone VGP, Lanuti P, Bologna G, Di Silvestre S, Di Pietro N, Pipino C, **Mandatori D**, Formoso G and Pandolfi A. *Anti-inflammatory role of carotenoids in endothelial cells derived from umbilical cord of women affected by gestational diabetes mellitus.* Oxid Med Cell Longev. 2019 Jan 30; 2019:8184656. doi: 10.1155/2019/8184656.
  - (25) Pipino C\*, **Mandatori D\***, Buccella F, Lanuti P, Preziuso A, Castellani F, Grotta L, Di Tomo P, Marchetti S, Di Pietro N, Cichelli A, Pandolfi A, Martino G. *Identification and Characterization of a Stem Cell-Like Population in Bovine Milk: A Potential New Source for Regenerative Medicine in Veterinary.* \* First two authors equally contributed to the work. Stem Cells Dev. 2018 Nov 15; 27(22):1587-1597. doi: 10.1089/scd.2018.0114.
  - (26) Alessio N\*, Pipino C\*, **Mandatori D**, Di Tomo P, Ferone A, Marchisio M, Melone MAB, Peluso G, Pandolfi A, Galderisi U. *Mesenchymal stromal cells from amniotic fluid are less prone to senescence compared to those obtained from bone marrow: An in vitro study.* J Cell Physiol. 2018 Nov; 233(11):8996-9006. doi: 10.1002/jcp.26845.
  - (27) Di Pietro N, Potenza MA, Di Silvestre S, Addabbo F, Di Pietrantonio N, Di Tomo P, Pipino C, **Mandatori D**, Palmerini C, Failli P, Bonomini M, Montagnani M, Pandolfi A. *Calcimimetic R-568 vasodilatory effect on mesenteric vascular beds from normotensive (WKY) and spontaneously hypertensive (SHR) rats. Potential involvement of vascular smooth muscle cells (vSMCs).* PLoS One. 2018 Aug 9;13(8): e0202354. doi: 10.1371/journal.pone.0202354.
  - (28) **Mandatori D**, Penolazzi L, Pipino C, Di Tomo P, Di Silvestre S, Di Pietro N, Trevisani S, Angelozzi M, Ucci M, Piva R, Pandolfi A. *Menaquinone-4 enhances osteogenic potential of human amniotic fluid mesenchymal stem cells cultured in 2D and 3D dynamic culture systems.* J Tissue Eng Regen Med. 2018 Feb; 12(2):447-459. doi: 10.1002/term.2471.
  - (29) Immacolata Castellano, Pamela Di Tomo, Natalia Di Pietro, **Domitilla Mandatori**, Caterina Pipino, Gloria Formoso, Alessandra Napolitano, Anna Palumbo, and Assunta Pandolfi *Anti-inflammatory activity of marine ovothiols in an in vitro model of endothelial dysfunction induced by hyperglycemia.* Oxid Med Cell Longev. 2018 Apr 19; 2018:2087373. doi: 10.1155/2018/2087373.
  - (30) Bonomini M, Di Silvestre S, Di Tomo P, Di Pietro N, **Mandatori D**, Di Liberato L, Sirolli V, Chiarelli F, Indiveri C, Pandolfi A, Arduini A. *Effect of peritoneal dialysis fluid containing osmo-metabolic agents on human endothelial cells.* Drug Des Devel Ther. 2016 Nov 28; 10:3925-3932.
  - (31) Marinelli L, Cacciatore I, Fornarari E, Gasbarri C, Angelini G, Marrazzo A, Pandolfi A, **Mandatori D**, Yang S, Cornelius van N, Wim E H, Di Stefano A. *Preparation and characterization of polymeric micelles loaded with a potential anticancer prodrug.* Journal of Drug Delivery Science and Technology. Oct 2016. Volume 35.; doi: 10.1016/j.jddst.2016.06.006
  - (32) Pipino C, Di Tomo P, **Mandatori D**, Cianci E, Lanuti P, Cutrona MB, Penolazzi L, Pierdomenico L, Lambertini E, Antonucci I, Sirolli V, Bonomini M, Romano M, Piva R, Marchisio M, Pandolfi A. *Calcium sensing receptor activation by calcimimetic R-568 in human amniotic fluid mesenchymal stem cells: correlation with osteogenic differentiation.* Stem Cells Dev. 2014 Dec 15;23(24):2959-71. doi: 10.1089/scd.2013.0627.

- **Peer recognition**

**Awards:**

- Award of the National Scientific Qualification for the position of Associate Professor in the Competition Sector - Applied Biology
- “Travel Grant Award” from the “ARVO Association” for the oral communication to the ARVO World Congress (5-9 May 2024, Seattle, WA).
- Winner of the First Prize for Best Spin-Off at European level received from the European Institute of Innovation and Technology (EIT). Food JumpStarter Award 2021 received as founder of the Spin-Off FlowForLife Lab.
- Winner of the First Prize as Best Spin-Off at regional level received by the Start-Cup Abruzzo (Start-Cup Award 2021) in my capacity as founding partner of the Spin-Off FlowForLife Lab. Pescara, 17 November 2021
- Award as best oral communication. Spring Meeting Young Researchers (SIIA, SIMI, SIPREC, SISA). 'News and updates on the prevention and treatment of cardiovascular disease (28th February – 2 March 2019, Rimini, Italy). Title: *Potential role of menaquinone-4 in osteogenic trans-differentiation of vascular smooth muscle cells isolated from Spontaneously Hypertensive Rats*

**Fellowship:** Assistant Professor (RTD-A, Junior Position). Ministry of University and Research (MUR), Italy, FSE REACT-EU (code n. 53-I-14751-1; PON R&I 2014/2020, Action IV.4 “Doctorates and research contracts on innovation issues”, DM 1061/2021). Title: “*Engineering of corneal lenticules with mesenchymal cells and/or exosomes (miRNA) and/or nanoparticles (neurotrophic molecules) for the release of regenerative factors useful for the treatment of complex high medical need ophthalmic diseases*”. The project has led to the publication of 4 articles in indexed journals which had a relevant role for the advancement in ophthalmic research field.

**Invited talks:** I have been **invited** to give talks on the three national congress:

- Italian Society of Ophthalmic Sciences Congress 2024 (SISO 3<sup>rd</sup>, 18-20 April 2024, Rome, Italy) Title: *Cellular models of eye diseases for the evaluation of effects of bioengineered corneal lenticule with rhNGF and stem cells*
- Italian Ophthalmologists' Association Congress 2023 (AIMO 14<sup>th</sup>, 16-18 November 2023, Rome, Italy) Title: *New Drug Delivery Systems in Ophthalmology*
- Stem Cell Research Italy Congress (SCR Italy 7<sup>th</sup>, 21-23 May 2016, Bologna, Italy) Title: *Vitamin K2 and Bone: Focus on Osteogenesis*

**Oral communication:** I obtained 2 oral communications:

- 94<sup>th</sup> National Congress of the Italian Society of Experimental Biology (SIBS; 6-9 April 2022, Torino, Italy). Title: “*Human stromal lenticule engineered with microparticles loaded with recombinant human NGF as a potential biocompatible drug delivery system for ocular disease treatment*”.
- Spring Meeting Young Researchers (SIIA, SIMI, SIPREC, SISA). 'News and updates on the prevention and treatment of cardiovascular disease (28<sup>th</sup> February – 2 March 2019, Rimini, Italy). Title: *Potential role of menaquinone-4 in osteogenic trans-differentiation of vascular smooth muscle cells isolated from Spontaneously Hypertensive Rats*. **Award as best oral communication.**

**Poster presentation:** From 2014 to the present, I have participated in numerous national and international conferences.

## **ADDITIONAL INFORMATION**

**Technical Skills:** Research Experience and deep knowledge in:

**(1) Molecular Biology:**

- DNA/RNA/protein extraction methods from cell culture and tissue.
- Polymerase chain reaction (PCR), Reverse transcriptase-polymerase chain reaction (RT-PCR) and Real time RT-PCR

- Sequencing techniques (Sanger and NGS)
- transfection and gene silencing methods
- Electrophoresis techniques

**(2) Cell biology:**

- Collection of human and animal biological samples (murine and porcine)
- Human and murine primary cell cultures: Corneal keratocytes, human umbelical vein endothelial cells, amniotic fluid mesenchymal stem cells, bone marrow mesenchymal stem cell, Wharton Jelly mesenchymal stem cell, osteoblast and osteoclast
- Cell cultures: 2D, 3D cell culture and co-culture systems using the RCCS - 4TM bioreactor and the High Aspect Ratio Vessel (HARV; both supplied by Synthecon™, Houston, TX, USA)
- Cell-based assays and colorimetric assays (viability, citotoxicity, imaging, immunofluorescence and flow cytometry).

**(3) Microscopy techniques:**

- optical microscope
- confocal fluorescence microscope
- scanning and transmission electron microscope

**(4) Histological techniques:**

- Paraffin and OCT embedding techniques
- Microtome and cryostat use
- Immunocytochemistry and immunohistochemistry analyses
- Histological staining

**(5) Animal models (mice and rats) manipulation**

**(6) Databases management** for recording human biological samples with related information such as date of tissue collection, anamnestic data of the donor patient, tissue macroscopic characteristics, date and storage method

**(7) Development and management** of a research biobank for cells and tissues of interest in regenerative medicine through the use of the 4Banking System aimed at accreditation according to UNI ISO 20387.

**Reviewer activities:**

- Editorial Board of Frontiers in Molecular Biosciences.
- Reviewer for 30 peer reviewed journals
- Guest Editor for the Special Issue “Recent Advances in Biomaterials for Bone Tissue Engineering Strategies” published by the journal Bioengineering (ISSN: 2306-5354, IF 5.046; Q1)
- Guest Editor for the Special Issue “Dietary Bioactives: Their Role in the Prevention and Treatment of Cardiovascular and Metabolic Bone Diseases” published by the journal Nutrients (ISSN: 2072-6643, Impact Factor 6.706; Q1)

**Teaching activities:** Teaching activity as an Assistant Professor (RTD-A Junior level) in Applied Biology for two bachelor (Obstetrics and Dental Care) course and for the PhD course in Biomolecular and Pharmaceutical Sciences at the University 'G. d'Annunzio' Chieti-Pescara.

**Students' supervision:** I have supervised 5 master students and 3 bachelor students. I have also supervised 7 students as part of the SISM (Italian Secretary of Students in Medicine) international exchange programme for research of the “G. d'Annunzio University Chieti Pescara. Students from University of Honduras, Universidad Autonoma de Nuevo Leon (Mexico), University of Caxias (Brazil), University of Medicine and Dentistry (Moscow) and University of San Francisco (USA)

**Academic activities:** From 2024, I have been the delegate for orientation for the University 'G. d'Annunzio' Chieti-Pescara

**Major scientific collaborations:** From 2018 to 2024 I have been collaborating with prominent national and international groups and a major pharmaceutical company involved in ophthalmic research. In detail, I collaborate with **Prof. Jodhbir S. Mehta** (Singapore Eye Research Institute), **Prof. Harminder S Dua** (University of Nottingham) and Dompè Pharmaceutic SpA. At my university, I have a collaboration with Prof.

Leonardo Mastropasqua, Professor Mario Nubile, Prof. Rodolfo Mastropasqua and Prof. Luca Agnifili from Ophthalmology Clinic. This strict collaboration has specifically focused on the development of innovative biotechnological procedures. These procedures aim to establish specific methods for the decellularization, characterization, and bioengineering a natural bioscaffold for the release of active compounds, such as recombinant growth factors (rhNGF), derived from the corneal samples and named corneal lenticule. The activities of this research group have resulted in four publications in international peer reviewed journals, with three of them featuring my prominent role as the last author and corresponding author. Additionally, we have filed a European patent as an outcome of this work. (e.g European Patent n° 20179055.7-1109, 09/06/2020 (232/EP), “*New Drug Delivery System for Ophthalmic Use*”. Ente di Rilascio: European Patent Office. Authors: Acerra Giuseppina, Detta Nicola, Pandolfi Assunta, Mastropasqua Leonardo, Nubile Mario, **Mandatori Domitilla**, Allegretti Marcello, Mantelli Flavio; Mastropasqua L...& **Mandatori D** (2022). Bioengineered Human Stromal Lenticule for Recombinant Human Nerve Growth Factor Release: A Potential Biocompatible Ocular Drug Delivery System. *Front Bioeng Biotechnol*)

I have just started collaborating with Prof. Sven Schnichels (University Eye Hospital, Centre for Ophthalmology, University of Tübingen, Germany) in the development of ocular disease model (Pelusi L...& Mandatori D (2024). Ex vivo model of diabetic retinopathy and evaluation of the effects of mesenchymal stem cells and rhNGF delivered by bioengineered human corneal lenticule. *Frontiers in Endocrinology*).

I have also established a network with Prof Liborio Stuppia and Vincenzo De Laurenzi (experts on genetic and SARS-CoV-2 infection), Prof Adriano Piattelli, Giovanna Iezzi, Roberta Piva and Alessandra Giuliani (experts on bone tissue engineering and regeneration), Prpf. Francesco Cosentino e Gloria Formoso (experts in diabetes).

## Other contributions to the research community

### Technology transfer:

- Co-founder of the university spin-off “FlowForLife Lab SRL”. **Role:** Responsible for R&D sector. **Relevance:** The company specializes in providing biological and biochemical analyses, as well as developing innovative services with high biotechnological value.

**Public awareness activities:** Since 2017, I have participated in numerous scientific outreach events such as the international event “Unistem Day” and the national event "Researchers' Night". Both these events aim to create opportunities to meet with students, schoolchildren and the entire local community to spread scientific culture and involve the new generations in their passion and curiosity for science, in an informal and stimulating context.

**Organization of Scientific event:** I have organized at my institution the first “One Day Meeting” event by the contribution of the Italian Society for the Study of Stem Cells (SCR-Italy; 19 May 2023, Chieti, Italy)