

Felicia Carotenuto

ADDRESS Department of Clinical Sciences and Translational Medicine, Center for Regenerative Medicine, University of Rome "Tor Vergata".. Via Montpellier, 1. 00133 Roma, Italy

CURRENT POSITION

Coordinator for research support; research activity and teaching assistance. Dept. of Clinical Sciences and Translational Medicine and Center for Regenerative Medicine, University of Rome Tor Vergata.
: Scientific coordinator of the ENEA Agreement Dept. FSN-TECFIS-DIM / Dept. SCMT University Tor Vergata
Visiting Researcher at ENEA Frascati Research Center

EDUCATION

Ph.D in Experimental Pathophysiology, Dept. Internal Medicine
University of Rome "Tor Vergata". .

Master's Degree in "Biological Sciences", with honors, University of
Naples "Federico II" .

Master's Degree in "Natural Science", with honors, University of
Naples "Federico II"

Certification to practice the profession of biologist, University
"Federico II", Naples and registration at the "National Order of
Biologists"

Several training courses and workshops in the field of biology and
medicine

PROFESSIONAL EXPERIENCE

- 2019-present Coordinator for research support. Dept. of Clinical Sciences and Translational Medicine, University of Rome Tor Vergata
- 2017-present Scientific coordinator of the ENEA Collaboration Agreement Dept. FSN-TECFIS-DIM / Dept. SCMT University Tor Vergata, signed on October 26, 2017. Field of research: Development of highly innovative technologies in the field of tissue engineering and regenerative medicine
- 2015-present Research activity and teaching assistance at the "Center for Regenerative Medicine" (CIMER) and Dept. SCMT University of Rome "Tor Vergata. Studies in the field of regenerative medicine and drug delivery for therapeutic applications.
- 2012-present Visiting Researcher at ENEA Frascati Research Center. Research project : the effect of bioactive compounds and nutritional factors on experimental models of aging and degenerative diseases.
- 2009 Technician scientific area and data processing. Dept. Internal Medicine. University of Roma Tor Vergata

- 2004-2009 Researcher for the “Consorzio Interuniversitario Istituto Nazionale per le Ricerche Cardiovascolari” (INRC), Imola , Bologna. Research project : Isolation and characterization of resident cardiac stem cells. Creation of cardiac proto-tissues in vitro for therapeutic applications in the infarcted myocardium using scaffolds created by the electrospinning technique
- 2003-2004 Post-Doc Fellow for the “Consorzio Interuniversitario Istituto Nazionale per le Ricerche Cardiovascolari” (INRC), Imola, Bologna. Research project : Isolation and characterization of bone marrow and resident cardiac stem cells
- 2002-2003 Post-Doc Fellow for the Centro Cardiologico Fondazione “I. Monzino. Research project: Valuation of the effects of selected drugs on rats with cardiac hypertrophy ”, The research activity was carried out in collaboration with the pharmaceutical company Sigma Tau.
- 1998-2002 PhD in “ Experimental Pathophysiology, Dept. Internal Medicine University of Rome "Tor Vergata". Thesis: Modulation of hepatic lipid metabolism in simulated sedentary conditions
- 1997-1998 Post-Graduate Fellow at “ Laboratory of Cardiology Molecular and Cellular”. University of Rome "Tor Vergata ”. Research project of the MIUR by the consorzio CAR.DI (Consorzio Cardiomiopatia Dilatativi Primitiva) "National drug research and training program": Research field: The molecular mechanisms of hereditary cardiomyopathy and therapeutic potential of selected drugs and nutritional factors.

TEACHING ACTIVITY

2018- present:

Adjunct professor for the discipline: Technical sciences of biomedical-immunology laboratory, MED/46. Bachelor's Degree in Diagnostic Techniques of Biomedical Laboratory. University of Rome "Tor Vergata"

2010-2017

Teacher for the discipline: Technical sciences of biomedical-immunology laboratory, MED/46. Bachelor's Degree in Diagnostic Techniques of Biomedical Laboratory. University of Rome "Tor Vergata"

2007-2010:

Teaching Assistant for the discipline: Clinical Pathology. Master's Degree in Biology and Human Evolution, Macroarea of Mathematical, Physical and Natural Sciences, University of Rome Tor Vergata.

2003-2010:

Teaching Assistant for the discipline: Medical genetics and clinical pathology. Bachelor's Degree in Diagnostic Techniques of Biomedical Laboratory at the University of Rome "Tor Vergata"

2018-2019:

Adjunct professor (external tutor) for the program "Alternanza Scuola Lavoro (ASL)" and the project "Biotechnology and 3D Printing". High school: ITIS GIOVANNI XXIII Roma

2016-2018:

Educational seminars on the topic: “Cell Culture Applications in biomedical research and tissue engineering for the program "Alternanza Scuola Lavoro (ASL)". High school: ITIS GIOVANNI XXIII Roma.

2015:

Responsible for study, analysis and dissemination Promotion of innovation culture and technology transfer. Contratto c/terzi Syntech Reserch. Dipartimento di Scienze Cliniche e Medicina Traslazionale, Università Tor Vergata. ID Work assignment: D\2015\526.

1992-1994

Adjunct professor for the discipline: "Food science". Degree in Nursing ". (ASL NA 5), Napoli

SELECTED RESEARCH GRANTS

- 2018** Responsible for the UniversityTor Vergata Dip. SCMT, of the research project: "Regione Lazio, Lazio Innova : Progetti di gruppi di ricerca, Conoscenza e cooperazione per un nuovo modello di sviluppo (LR 13/2008 – art. 4). Research Groups: Enea Frascati (coordinator: Prof. Laura Teodori), University of Rome La Sapienza, University of Rome Tor Vergata, Company "Nanofiber "SRL Rome. Research project title: "Smart scaffold ingegnerizzati per la rigenerazione dell'apparato muscolo scheletrico" (SMARTIES). Grant Number: 85-2017-15004. Project duration: 26 months.
- 2018** MISSION: SUSTAINABILITY 2017: (Nature-Inspired Composite H2s-Releasing Scaffolds for Tissue Repair)
- 2012-2015** MERIT (Innovative models for the repair and regeneration of tissues in orthopedic trauma). ENEA Frascati Research Center and ICCRS San Raffaele Pisana
- 2009-2012** Italy-Japan Joint Lab on Tissue Engineering Technologies (JITEL)-PROGETTI DI RICERCA DI GRANDE RILEVANZA: Development of new technologies for the manufacture of human tissues to be re-implanted in patients suffering from degenerative diseases
- 2008-2009** Regeneration of the infarcted myocardium by stimulation of stem cells induced by biomimetic microspheres. INRC (Istituto Nazionale per la Ricerca Cardiovascolare) - Compagnia San Paolo di Torino
- 2006-2008** Biopolymers engineered with autologous stem cells: a new frontier for regeneration of infarcted myocardium. INRC (Istituto Nazionale per la Ricerca Cardiovascolare) - Compagnia San Paolo di Torino
- 2001-2006** FIRB: Cell transplantation as an alternative to organ transplantation: study of the growth and differentiation processes of stem cells committed towards a cardiovascular phenotypes

PERSONAL SKILLS

First Language	Italian
Other Languages	English Reading- Writing- Oral expression capacity: Good

Research Interest: Regenerative medicine and tissue engineering. Molecular and cellular mechanisms in the physiology and pathophysiology of cardiac and skeletal muscle. Modulation of molecular pathways from bioactive compounds and nutritional factors on experimental models of the degenerative diseases. Interaction of innovative biomaterials and cells for the development of new therapies.

TECHNICAL SKILLS Preparation and maintenance of cell cultures. Study of cell cultures on innovative biomaterials (Tissue Engineering). Nano and micro technologies for the drug delivery. Microscopy techniques: inclusion, cutting and staining of histological preparations. Immunohistochemical and immunofluorescence techniques on cells and tissues. Flow cytometry. Cell vitality, proliferation and migration assays. Molecular biology techniques.

Excellent knowledge of Office programs (Excel, Word, PowerPoint, etc.).
Excellent knowledge of the S/W for the image processing and analysis (PhotoShop, Image J), S/W and web tools for the data "in silico" analysis

SCIENTIFIC PUBLICATIONS

i10-index: 18 -- Hirsch Index:14 -- Citation Number: 999 (from Web of Science, Scopus and Google Scholar)
Speaker at numerous scientific conferences with associated publications
Reviewer for international scientific journals such as American Journal of Cardiology, Frontiers in Physiology, Oncotarget, Biomed Res International, Cell Proliferation.

SELECTED PUBLICATIONS:

Carotenuto F*, Teodori L*, Maccari A, Orlando G, and Di Nardo P. Turning Regenerative Technologies into Treatment to Repair Myocardial Injuries. J Cell Mol Med. 2019. Review. In Press. doi: 10.1111/jcmm.14630.
*First Autor equal contribution

Carotenuto F, Albertini MC, Coletti D, Vilmercati A, Campanella L, Darzynkiewicz Z, Teodori L. How Diet Intervention via Modulation of DNA Damage Response through MicroRNAs May Have an Effect on Cancer Prevention and Aging, an in Silico Study. Int J Mol Sci. 2016 May 19;17(5). pii: E752. doi: 10.3390/ijms17050752. ISSN: 1422-0067

Ciucci M*, Mochi F*, **Carotenuto F***, Di Giovanni E, Proposito P, Francini R, De Matteis F, Reshetov I, Casalboni M, Melino S, Di Nardo P. Scaffold-in-Scaffold Potential to Induce Growth and Differentiation of Cardiac Progenitor Cells. Stem Cells Dev. 2017 Jul 15. doi: 10.1089/scd.2017.0051. ***First Autor equal contribution**

Carotenuto, F, Coletti D, Di Nardo P and Teodori L . 2016. α -linolenic acid reduces TNF-induced apoptosis in

C2C12 myoblasts by regulating expression of apoptotic proteins. *Eur J Transl Myol* 26 (4): 317-322. doi: 10.4081/ejtm.2016.6033. ISSN: 2037-7460

Carotenuto, F, Costa A., Albertini M C, Rocchi M B L., Rudov A, Coletti D, Minieri M, Di Nardo P and Teodori L. Dietary Flaxseed Mitigates Impaired Skeletal Muscle Regeneration: in Vivo, in Vitro and in Silico Studies. *Int J Med Sci*, 2016;13(3):206-219. ISSN: 1449-1907

Carotenuto F, Minieri M, Monego G, Fiaccavento R, Bertoni A, Sinigaglia F, Vecchini A, Carosella L, Di Nardo. A diet supplemented with ALA-rich flaxseed prevents cardiomyocyte apoptosis by regulating caveolin-3 expression. *Cardiovasc Res*, 2013;100:422-431. ISSN: 0008-6363.

F. Carotenuto, M. Minieri, P. Di Nardo. Long and short-term effects of plant derived nutrients on Dystrophic Cardiomyopathy. XII IIM Meeting. *Eur J Transl Myol*. 2016 Feb 23; 26(1): 5830; doi: 10.4081/ejtm.2016.5830 ; PMID: PMC4821221. ISSN: 2037-7460

Ciucci M, Iorio E, **Carotenuto F**, Khashoggi HA, Nanni F, Melino S. H₂S-releasing nanoemulsions: a new formulation to inhibit tumor cells proliferation and improve tissue repair. *Oncotarget*. 2016. 7(51):84338-84358. ISSN: 1949-2553.

Carotenuto F; Minieri M; Melino S and Di Nardo P. Alpha linolenic acid-rich flaxseed regulates survival in cardiomyocytes. *Cardiology*, 2014;Vol. 128,Supplement: 1 p. 381-381. ISSN: 0008-6312

Carotenuto F, Costa , Albertini M C, Rocchi M B L, Rudov A, Coletti D, Minieri M, Di Nardo P, Teodori L. The Alpha-Linolenic Acid Preserves TNF-induced Inhibition of Differentiation in Myoblasts. *Cardiac Growth & Regeneration, Visualizing the future*. Viterbo 22-25 June 2014

F. Carotenuto, M. C. Albertini, M. Rocchi, D. Coletti, A. Costa, P. Di Nardo and L. Teodori. Linolenic Acid Counteracts TNF Negative Effects on Skeletal Muscle Cells. *CYTO 2013 Conference, San Diego, CA - May 19-22, 2013*.

Chiurchiù V, Izzi V, D'Aquilio F, Vismara D, **Carotenuto F**, Catanzaro G, Maccarrone M. Endomorphin-1 prevents lipid accumulation via CD36 down-regulation and modulates cytokines release from human lipid-laden macrophages. *Peptides*, 2011; 32: 80-85. ISSN: 0196-9781

Fiaccavento R, **Carotenuto F**, Vecchini A, Binaglia L, Forte G, Capucci E, Maccari AM, Minieri M, Di Nardo P. An Omega-3 Fatty Acid-Enriched Diet Prevents Skeletal Muscle Lesions in a Hamster Model of Dystrophy. *Am J Pathol*, 2010;177: 2176-2184. ISSN: 0002-9440

Mandoli C, Mecheri B, Forte G, Pagliari F, Pagliari S, **Carotenuto F**, Fiaccavento R, Rinaldi A, Di Nardo P, Licoccia S, Traversa E. Thick Soft Tissue Reconstruction on Highly Perfusive Biodegradable Scaffolds. *Macromol Biosci*, 2010;10: 127-138. ISSN: 1616-51877

Carotenuto F, Forte G, Pagliari S, Pagliari F, Fiaccavento R, M. Minieri M, Zava S, Rizzo A, and Di Nardo P. Stem cell fate guidance by physical factors. In: *Microsfere polimeriche e cellule staminali autologhe : nuovi studi sulle possibilita di rigenerazione del miocardio infartuato : V Workshop delle unita operative INRC*. 2008; p. 48-50, BOLOGNA:CLUEB / Cooperativa Libreria Universitaria Editrice Bologna. ISBN: 978-88-491-3156-7

Fiaccavento R*, **Carotenuto F***, Minieri M, Masuelli L, Vecchini A, Bei R, Modesti A, Binaglia L, Fusco A, Berloli A, Forte G, Carosella L, Di Nardo P. alpha-Linolenic acid-enriched diet prevents myocardial damage and expands longevity in cardiomyopathic hamsters. *American Journal Of Pathology*, 2006; 169: 1913-1924. ISSN: 0002-9440. ***First Autor equal contribution**

Forte G, **Carotenuto F**, Pagliari F, Pagliari S, Cossa P, Fiaccavento R, Ahluwalia A, Vozzi G, Vinci B, Serafino A, Rinaldi A, Traversa E, Carosella L, Minieri M, Di Nardo P. Criticality of the biological and physical stimuli array inducing resident cardiac stem cell determination. *Stem Cells*, 2008;26:2093-2103. ISSN: 1066-5099

Chiurchiu V, Izzi V, D'Aquilio F, **Carotenuto F**, Di Nardo P, Baldini PM. Brain Natriuretic Peptide (BNP) regulates the production of inflammatory mediators in human THP-1 macrophages. *Regulatory Peptides*, 2008;148: 26-32. ISSN: 0167-0115

Fiaccavento R*, **Carotenuto F***, Minieri M, Masuelli L, Vecchini A, Bei R, Modesti A, Binaglia L, Fusco A, Bertoli A, Forte G, Carosella L, Di Nardo P. Alpha-linolenic acid-enriched diet prevents myocardial damage and expands longevity in cardiomyopathic hamsters. *Am J Pathol*. 2006 Dec;169(6):1913-24. ISSN: 0022-2828. ***First Autor equal contribution**

Fiaccavento R*, **Carotenuto F***, Minieri M, Fantini C, Forte G, Carbone A, Carosella L, Bei R, Masuelli L, Palumbo C, Modesti A, Prat M, Di Nardo P. Stem cell activation sustains hereditary hypertrophy in hamster cardiomyopathy. *J Pathol*, 2005; 205(3):397-407. ISSN: 0022-3417. ***First Autor equal contribution**

D'Aquilio F, Procaccini M, Izzi V, Chiurchiu' V, Giambra V, **Carotenuto F**, Di Nardo P, Baldini PM. Activatory properties of lysophosphatidic acid on human THP-1 cells. *Inflammation*. 2007 ;30:167-77. ISSN: 0360-3997

Forte G, Minieri M, Cossa P, Antenucci D, Sala M, Gnocchi V, Fiaccavento R, **Carotenuto F**, De Vito P, Baldini PM, Prat M, Di Nardo P. Hepatocyte growth factor effects on mesenchymal stem cells: proliferation, migration, and differentiation. *Stem Cells*, 2006: 24(1):23-33. ISSN: 1066-5099

Carotenuto F, Forte G, Pagliari S, Pagliari F, Fiaccavento R, Romano R, Cossa P, Minieri M and Di Nardo P. Meccanismi Rigenerativi del Miocardio in condizioni di Ridotta Gravita'. In : *Biopolimeri ingegnerizzati con cellule staminali autologhe: una nuova frontiera per la rigenerazione del miocardio infartuato : quarto workshop delle unità operative: (I.N.R.C.-C.I.)*. 2007. p. 76-79, BOLOGNA:CLUEB / Cooperativa Libreria Universitaria Editrice Bologna, ISBN: 978-88-491-2875-8

Masuelli L, Bei R, Sacchetti P, Scappaticci I, Francalanci P, Albonici L, Coletti A, Palumbo C, Minieri M, Fiaccavento R, **Carotenuto F**, Fantini C, Carosella L, Modesti A, Di Nardo P. Beta-catenin accumulates in intercalated disks of hypertrophic cardiomyopathic hearts. *Cardiovasc Res*. 2003 Nov 1;60(2):376-87. PMID: 14613867

Scientific Societies Member of the Scientific Committee of the "Istituto Nazionale di Ricerche Cardiovascolari (INRC)"; Imola, Bologna.
Member of the "Società Italiana di Ricerche cardiovascolari (SIRC)"

I authorize the use of my personal data (Decreto Legislativo 30 giugno 2003, n. 196 "Codice in materia di protezione dei dati personali").

Rome, 13/09/2019

Felicia Carotenuto