

Curriculum vitae of Marialuisa Perrotta*Name and Surname*

Marialuisa Perrotta

EDUCATION AND TRAINING

- June 2020 Research Fellow on ERC – Starting Grant – Pi Daniela Carnevale – SymPAthY “A neurosplenic pathway coupling Immunity and Hypertension” at the “Department of Angiocardioneurology and Translational Medicine” – IRCCS Neuromed (Pozzilli).
- January 2020 Borsa di studio “Maestri della SIIA” 2020 - A brain to spleen communication in stress-dependent hypertension” *Research activity* on mechanisms at the “Department of Angiocardioneurology and Translational Medicine” – IRCCS Neuromed (Pozzilli).
- 2019 Research Fellow at the “Department of Molecular Medicine” - Sapienza University of Rome. *Tutor:* Prof. Giuseppe Lembo
Research activity focused on the role of the activation of the autonomic nervous system, typically involved in a pathophysiological condition, in modulating the immune responses during the different phases of cardiac remodeling, related to the project PRIN-2015 of the Prof. Giuseppe Lembo, at the “Department of Angiocardioneurology and Translational Medicine” – IRCCS Neuromed (Pozzilli).
- 2018 Research Fellow at the “Department of Molecular Medicine” - Sapienza University of Rome (procedure code AI_SAP2017 – prot. 1969 dated 13.11.17)
Director of the Department: Prof. Angela Santoni
Tutor: Prof. Giuseppe Lembo
Research activity performed on the study of the role of the cholinergic-sympathetic pathway in murine models of cardiovascular diseases and conducted at the “Department of Angiocardioneurology and Translational Medicine” – IRCCS Neuromed (Pozzilli).
- 2017 PhD in Translational and Clinical Medicine – IRCCS Neuromed (Pozzilli) at the “Department of Angiocardioneurology and Translational Medicine”
Director of the Department: Prof. Giuseppe Lembo
Tutor: Prof. Daniela Carnevale
Research activity performed on the study of the brain-to-spleen connection, mediated by a cholinergic-sympathetic pathway in murine models of hypertension induced by AngII or DOCA-salt.
- 2014 Professional qualification in Biology, Sapienza University of Rome.
- 2013 Degree in Neurobiological Sciences, Sapienza University of Rome, final mark 110/110 cum laude.

- 2012 Internship in the Department of Physiology and Pharmacology “V. Erspamer” and “Institute Pasteur, Cenci Bolognetti Foundation”, Sapienza University of Rome.
Director of the Department: Prof. Cristina Limatola
Tutor: Dr. Laura Maggi
Research activity performed: electrophysiological studies on the effect of chronic administrations of Selective Serotonin Reuptake Inhibitors (SSRIs) in murine models of neuronal plasticity.
Results of this research activity have been presented in the degree thesis: “Ruolo della stimolazione ambientale sull’efficacia degli antidepressivi in modelli murini di plasticità neuronale”.
- 2003 High School Diploma in Classical Studies, Liceo Classico “G. Perrotta”, Termoli (CB), final mark 77/100.

PARTICIPATION TO NATIONAL AND INTERNATIONAL CONFERENCES

- 2020 – SIIA, Bologna, Italy (virtual edition)
- 2020 - Gordon Research Conference, Scientific Session -Angiotensin II- Barga (Lucca), Italy.
- 2019 - American Heart Association, Philadelphia, Pennsylvania.
- 2019 - SIIA, Roma, Italy.
- 2019 – Council on Hypertension, New Orleans, Louisiana.
- 2019 – ERANET – CVD Meeting, Pozzilli (Isernia), Italy.
- 2018 - American Heart Association, Chicago, Illinois.
- 2018 - Bioelectronic Medicine: Technology Targeting Molecular Mechanisms Symposium, Stockholm, Sweden.
- 2018 - SIIA, Roma, Italy.
- 2017 - American Heart Association, Anaheim, California.
- 2017 - SIIA, Spring Meeting, Roma, Italy.
- 2016 - American Heart Association, New Orleans, Louisiana.
- 2016 - American Society of Nephrology, Chicago, Illinois.
- 2016 - SIIA, Firenze, Italy.
- 2016 - Cardiovascular Conference, Capri (Napoli), Italy.
- 2016 - Gordon Research Conference, Scientific Session -Angiotensin II- Barga (Lucca), Italy.
- 2015 - SIIA, Bologna, Italy.

SCIENTIFIC DISSEMINATION

- 2016 - Giornata mondiale dell’ipertensione arteriosa. I fully participated at the organization of “Giornata mondiale dell’ipertensione arteriosa” at Cassino, FR, Lazio.

2015 - “Forum della Salute / IV Congresso della Corte di Giustizia Popolare per il Diritto alla Salute.” I participated at the screening of cardiovascular risk factors in the ageing population. Rimini, Emilia-Romagna.

2015 - Giornata mondiale dell’ipertensione arteriosa. I fully participated at the organization of “Giornata mondiale dell’ipertensione arteriosa” at Cassino, FR, Lazio.

PRESENTATIONS TO NATIONAL AND INTERNATIONAL CONFERENCES

2020 - Oral presentation – Congresso Nazionale della Società Italiana dell’Ipertensione Arteriosa (SIIA), Bologna, 30 September – 2 October.

Perrotta M, Pallante F, Carnevale L, Iodice D, Fardella V, Lembo G, Carnevale D. “Peripheral hypertensive stimuli activate SFO and PVN neurons by stimulating the priming of adaptive immunity in the spleen through increased activity of the splenic sympathetic nerve”.

2019 - Oral presentation – Scientific Sessions of the American Heart Association, Philadelphia, Pennsylvania, 16–18 November.

Perrotta M, Pallante F, Iodice D, Perrotta S, Iacobucci R, Lembo G, Carnevale D “VEGF-B cooperates with PlGF to modulate the splenic immune response involved in Angiotensin II induced hypertension and target organ damage”.

2019 - Oral presentation - Congresso Nazionale della Società Italiana dell’Ipertensione Arteriosa (SIIA), Roma, 26-28 September.

Perrotta M, Pallante F, Carnevale L, Iodice D, Fardella V, Lembo G, Carnevale D. “Stimoli ipertensivi periferici attivano i neuroni dell’organo subfornicale promuovendo il priming dell’immunità adattativa attraverso l’attivazione del nervo simpatico splenico”.

2018 - Poster presentation - Scientific Sessions of the American Heart Association, Chicago, Illinois, 10-12 November.

Carnevale D, **Perrotta M**, Iodice D, Vinciguerra I, Lembo G “Novel Mechanisms at Immune-Vascular Interfaces Regulate Myogenic Tone of Resistance Arteries and Induce Hypertension in Mice”.

2018 - Oral presentation - Congresso Nazionale della Società Italiana dell’Ipertensione Arteriosa (SIIA), Roma, 27-29 September.

Perrotta M, Carnevale L, Pallante F, Fardella S, Lembo G, Carnevale D “Il fattore di crescita placentare (PlGF) come nuovo modulatore del sistema neuroimmune attivato da stimoli ipertensivi differenti attraverso l’innervazione simpatica nella milza”.

2018 - Poster presentation - Bioelectronic Medicine: Technology Targeting Molecular Mechanisms Symposium, Stockholm, Sweden, 12 -14 June.

Perrotta M, Carnevale L, Pallante F, Fardella S, Lembo G, Carnevale D “Placental Growth Factor is a novel neuroimmune mediator activated by different hypertensive challenges”.

2017 - Poster presentation - Scientific Sessions of the American Heart Association, Anaheim 11–15 November.

Perrotta M, Cifelli G, Fardella S, Carnevale L, Mastroiacovo F, Pallante F, Lembo G, Carnevale D “DOCA-salt Hypertension Activates PIGF in the Spleen to Couple Sympathetic Drive and Immune System Activation”.

2017 - Poster presentation - Spring Meeting SISA (Società Italiana per lo Studio dell’Aterosclerosi) -SIIA (Società Italiana dell’Ipertensione Arteriosa) -SIMI (Società Italiana di Medicina Interna), Roma 7-8 April.

Perrotta M, Cifelli G, Fardella S, Iacobucci R, Mastroiacovo F, Pallante F, Fardella V, Carnevale L, Lembo G, Carnevale D “The placental growth factor (PIGF) has a crucial role in hypertension induced by desossicorticosterone acetate (DOCA)-salt, mediating the activation of immunity in the spleen”.

2016 - Oral presentation - Università degli studi del Molise - Giornata del Dottorato, Campobasso, 14 December.

Perrotta M, Pallante F, Fardella V, Iacobucci R, Fardella S, Carnevale L, Cifelli G, Lembo G, Carnevale D “A cholinergic-sympathetic pathway mediates the activation of immune system in hypertension”.

2016 - Oral presentation - Congresso Nazionale della Società Italiana dell’Ipertensione Arteriosa (SIIA), Firenze, 6-8 October.

Carnevale D, **Perrotta M**, Pallante F, Fardella V, Iacobucci R, Fardella S, Carnevale L, Cifelli G, Lembo G “The brain-to-spleen connection is mediated by a cholinergic sympathetic pathway that primes immunity in hypertension”.

MEMBER OF SCIENTIFIC SOCIETY

- AHA – American Heart Association (from 2017)
- SIIA – Società Italiana dell’Ipertensione Arteriosa (from 2016)

TECHNICAL SKILLS AND COMPETENCES

Laser capture microdissection - analysis on mouse tissues.

Immunohistochemical and immunofluorescence - analysis on mouse tissues. Confocal and light microscopy.

Electrophysiology - Electrophysiological competences in the sympathetic and parasympathetic nerve activity recording and vagus nerve stimulation in anesthetized mice treated chronically with angiotensin II, deoxycorticosterone acetate-salt (DOCA-salt) and high fat diet.

Electrophysiological measurements - Long Term Potentiation; Long Term Depression; Paired Pulse Ratio; Input-Output Curves on 350 µm transverse hippocampal slices of experimental murine models.

Animal Laboratory - handling and surgical procedures (to obtain hippocampal slices).

Software - Image J, LabChart Software, SigmaPlot, Adobe Photoshop, Office applications, Graphpad.

REVIEWER ACTIVITY

- Review Editor on the Editorial Board of Vascular Physiology (specialty section of Frontiers in Physiology).
- Reviewer for Brain Behavior and Immunity

H-index: 8 [Source=Scopus] – **Total Impact Factor** 98

SCIENTIFIC PUBLICATIONS [Impact Factor = **IF** 2019 JCR Science Edition]

1. Lembo G and **Perrotta M** “The neurology of hypertension: merging academic specialties to connect heart and brain pathophysiology”. Cardiov Res. 2021 April 5; 117, e70–e72. IF: 8.168
2. Carnevale L, Pallante F, **Perrotta M**, Iodice D, Perrotta S, Fardella S, Mastroiacovo F, Carnevale D, Lembo G. “Celiac Vagus Nerve Stimulation Recapitulates Angiotensin II-Induced Splenic Noradrenergic Activation, Driving Egress of CD8 Effector Cells” Cell Rep. 2020 Dec 15;33(11). IF: 8.109
3. Carnevale D, Facchinello N, Iodice D, Bizzotto D, **Perrotta M**, De Stefani D, Pallante F, Carnevale L, Ricciardi F, Cifelli G, Da Ros F, Casaburo M, Fardella S, Bonaldo P, Innocenzi G, Rizzuto R, Braghetta P, Lembo G, Bressan GM “Loss of EMILIN-1 Enhances Arteriolar Myogenic Tone Through TGF- β (Transforming Growth Factor- β)-Dependent Transactivation of EGFR (Epidermal Growth Factor Receptor) and Is Relevant for Hypertension in Mice and Humans” Arterioscler Thromb Vasc Biol. 2018 Oct; 38(10):2484-2497. IF: 6.604
4. **Perrotta M**, Lembo G, Carnevale D. The Interactions of the Immune System and the Brain in Hypertension. Curr Hypertens Rep. 2018 Feb 24;20 (1):7. IF: 3.856
5. Giugliano G, Salemme A, De Longis S, **Perrotta M**, D'Angelosante V, Landolfi A, Izzo R, Trimarco V. Effects of a new nutraceutical combination on cognitive function in hypertensive patients. Immunity and Ageing. 2018 Feb 7; 15:7. IF: 2.804
6. **Perrotta M**, Lori A, Carnevale L, Fardella S, Cifelli G, Iacobucci R, Mastroiacovo F, Iodice D, Pallante F, Storto M, Lembo G, Carnevale D. DOCA-salt hypertension activates PlGF in the spleen to couple sympathetic drive and immune system activation. Cardiov Res. 2018 Mar 1;114(3):456-467. IF: 8.168
7. Da Ros F, Carnevale R, Cifelli G, Bizzotto D, Casaburo M, **Perrotta M**, Carnevale L, Vinciguerra I, Fardella S, Iacobucci R, Bressan GM, Braghetta P, Lembo G, Carnevale D. Targeting Interleukin-1 β Protects from Aortic Aneurysms Induced by Disrupted Transforming Growth Factor β Signaling. Immunity. 2017 Nov 21;47(5):959-973.e9. IF: 22.553
8. Lori A, **Perrotta M**, Lembo G, Carnevale D. The Spleen: A Hub Connecting Nervous and Immune Systems in Cardiovascular and Metabolic Diseases. Int J Mol Sci. 2017 Jun 7;18(6). IF:4.556

9. Alboni S, van Dijk RM, Poggini S, Milior G, **Perrotta M**, Drenth T, Brunello N, Wolfer DP, Limatola C, Amrein I, Cirulli F, Maggi L, Branchi I. Fluoxetine effects on molecular, cellular and behavioral endophenotypes of depression are driven by the living environment. Mol Psychiatry. 2017; 22:552-561.
IF:12.384
10. **Perrotta M**, Lembo G, Carnevale D. The Multifaceted Roles of PI3K γ in Hypertension, Vascular Biology, and Inflammation. Int J Mol Sci. 2016 Nov 8;17(11).
IF:4.556
11. Carnevale D, **Perrotta M**, Pallante F, Fardella V, Iacobucci R, Fardella S, Carnevale L, Carnevale R, De Lucia M, Cifelli G, Lembo G. A cholinergic-sympathetic pathway primes immunity in hypertension and mediates brain-to-spleen communication. Nature Communications. 2016; 7:13035.
IF:12.121
12. **Perrotta M**, Lembo G, Carnevale D. Hypertension and Dementia: Epidemiological and Experimental Evidence Revealing a Detrimental Relationship. Int J Mol Sci. 2016 Mar 8;17(3):347.
IF:4.556
13. Carnevale D, **Perrotta M**, Lembo G, Trimarco B. Pathophysiological Links Among Hypertension and Alzheimer's Disease. High Blood Press Cardiovasc Prev. 2016 Mar;23(1):3-7.
IF: -
14. Carnevale L, **Perrotta M**, Lembo G. Microneurography of Peripheral Nerves in Mice: An Old Approach Applied to the Novel Concept of Neural Modulation of Immune Organs in Cardiovascular Diseases. Biomed J Sci & Tech Res. 2018 Feb 28.
IF: -

AWARDS and GRANTS

2020 – Premio migliore abstract SIIA 2020 - Perrotta M, Pallante F, Carnevale L, Iodice D, Fardella V, Lembo G, Carnevale D. “Peripheral hypertensive stimuli activate SFO and PVN neurons by stimulating the priming of adaptive immunity in the spleen through increased activity of the splenic sympathetic nerve”.

2020 – Borsa di studio “Maestri della SIIA” 2020 - A brain to spleen communication in stress-dependent hypertension”.

2019 – Paul Dudley White International Scholars – Council on Hypertension, New Orleans (Louisiana), 5-8 September. Carnevale D, Perrotta S, Carnevale R, Carnevale L, **Perrotta M**, Pallante F, Cifelli G, Lembo G. “PIGF/VEGF-B/Neuropilin1 a Neuroimmune Mechanism Necessary for the Initiation of the Adaptive Immune Response Recruited by Angiotensin II to Induce Hypertension and Target Organ Damage”.

2018 – Paul Dudley White International Scholars – Council on Hypertension, Chicago (Illinois), 6-9 September. Carnevale D, Iodice D, Vinciguerra I, **Perrotta M**, Lembo G. “Novel Mechanisms at Immune-vascular Interfaces Regulates Myogenic Tone of Resistance Arteries and Induce Hypertension in Mice”.

2018 – Progetto per Avvio alla Ricerca - Tipo 2 “The role of cholinergic-sympathetic pathway in the adaptive phase of cardiac remodeling induced by transverse aortic coarctation” Department of Molecular Medicine – Sapienza, University of Rome.

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FIRMATO

MARIALUISA PERROTTA