

CURRICULUM VITAE

Maria Cristina Vinci PharmD, PhD

Senior Scientist, Unit of Vascular Biology and Regenerative Medicine

Centro Cardiologico Monzino – IRCCS, Milano, ITALY

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EDUCATION

University of Florence, Florence, Italy **2007**

Specialization Degree in Pharmacology, Summa cum Laude

Dissertation: "Alpha-1 adrenergic receptors on vascular endothelium: an hypothetical pharmacological target"

University of Padua, Italy and University of Innsbruck, Austria **2004**

PhD, Molecular and Cellular Pharmacology, International Doctoral Program

Dissertation: "Protective effect of vascular endothelial growth factor on iatrogenic apoptosis in human umbilical vein endothelial cells"

University of Florence, Florence, Italy **1998**

Master Degree in Pharmacy, School of Pharmacy, Summa cum Laude

Dissertation: "Effect of an a.ODN to the K channel coding Kv1.1 gene in the mouse forced swimming test"

RESEARCH EXPERIENCE

Centro Cardiologico Monzino IRCCS, Milan, Italy **2011 – Present**

Senior Staff Scientist

Unit of Vascular Biology and Regenerative Medicine

Address molecular and (epi)genetic mechanisms underlying vascular cell and progenitor cell dysfunction in diabetes mellitus and other metabolic diseases.

- ◆ Undertake research individually and collectively and participate in national/international academic networks and conferences; managing other researchers and monitoring budgets
- ◆ Write grants, including identifying funding opportunities
- ◆ Transfer knowledge through teaching and supervision to undergraduate and graduate students working on their masters' and PhD theses
- ◆ Publish regularly in high quality journals including

Istituto Toscano Tumori (ITT), Florence, Italy **2009 – 2010**

Postdoctoral Fellow

Laboratory of Tumor Cell Biology

Identified and characterized genes/pathways involved in melanoma stem cell maintenance.

- ◆ Drafted proposals and supervised undergraduate and graduate students working on masters and PhD theses
- ◆ Published regularly in high quality journals including

University of Florence, Florence, Italy **2007 – 2009**
Postdoctoral Fellow
Department of Pharmacology, Laboratory of Autacoids
Researched carbonic anhydrases as a molecular target of kidney cancer and effects of sulfonamide-derivates inhibitors of carbonic anhydrase IX on tumor growth.
♦ Proposal writing for FIRB calls and supervision of undergraduate and graduate students working on masters' and PhD theses

University of Florence, Florence, Italy **2004 – 2007**
Postdoctoral Fellow
Department of Pharmacology, Laboratory of Vascular Biology
Researched autologous stem cells and engineered biopolymers as new frontier for infarcted myocardium. Conducted study of interaction between dendritic cells and vascular smooth muscle cells in atherosclerosis

Harvard Medical School, Boston MA **2003**
Visiting PhD Student
Department of Systems Biology, Beth Israel Deaconess Medical Center, Division of Signal Transduction
Researched role of PI3Kinase signaling in cardiac hypertrophy.
Mentor: Prof. Lewis C. Cantley

University of Padua, Padua, Italy **2001 – 2003**
PhD Student
Department of Pharmacology
Researched role of endothelium in vascular dysfunction: cellular-molecular mechanisms as pharmacological therapeutic targets.
Mentor: Prof. S. Luciani

University of Florence, Florence, Italy **1998 – 2000**
Predoctoral Fellow
Department of Pathophysiology, Andrology Unit
Supported study on NO and endothelin-1 in erectile dysfunction.
Mentor: Prof M. Maggi

INTERNATIONAL LAB EXPERIENCE

Harvard Medical School, Boston MA **2003**
Visiting PhD Student
Department of Systems Biology, Beth Israel Deaconess Medical Center, Division of Signal Transduction

TEACHING EXPERIENCE

University of Pavia, Pavia, Italy **2017-present**
Tutor for the students in PhD Medical Science
University of Milan, Milan, Italy **2014-present**

Thesis Advisor and Mentor for the School of Applied Biology in Biomedical Research
University of Florence, Florence, Italy **2005**
Dental Medical School, Undergraduate course in Pharmacology

HONORS AND AWARDS

Life Time Membership of Atherosclerosis & Vascular Biology (ESC) **2017**
Life Time Membership of Working Group on Aorta & Peripheral Vascular Disease (ESC) **2017**
Research Fellow from National Institute of Cardiovascular Research **2004**
Research Award of Italian Society of Pharmacology (SIF) **2003**

GRANTS

Project Type: Italian researcher abroad, Ricerca finalizzata **11/2014-07/2018**
Principal Investigator: Maria Cristina Vinci

Title and code: Epigenome wide profiling of dysfunctional endothelial progenitor cells in diabetic patients PE-2011-02348537.
Total direct cost: 387.109,00 euro

EDITORIAL POSITIONS

PloS ONE ♦ World Journal of Life Sciences and Medical Research ♦ World Journal of Young Researchers ♦ Trends Journal of Sciences Research ♦ Global Journal of Stem Cell Biology and Transplantation

REFEREE FOR SCIENTIFIC JOURNAL

PloS ONE ♦ Stem Cells ♦ Oncotarget ♦ Mechanisms of Aging and Development ♦ American Journal of Pharmacological Sciences ♦ Journal of Biomedical Materials Research: Part B ♦ World Journal of Life Sciences and Medical Research ♦ World Journal of Young Researchers ♦ Journal of Stem Cells Research, Development and Therapy

MEMBER OF LEARNED SOCIETY

European Association for the Study of Diabetes (EASD) ♦ American Heart Association (AHA) ♦ Italian Society for Atherosclerosis Study (SISA) ♦ Italian Society of Cardiovascular Research (SIRC) ♦ Italian Society of Pharmacology (SIF)

PUBLICATION LIST

Scopus: Citations 991; Document h-index : 18

Submitted Manuscripts

1. Vigorelli V., Pompilio G., **Vinci MC***. Sensitive and Quantitative Method to Evaluate the DNA Methylation Status of Positive Regulatory Domains and cAMP Response Element (PRDI, PRDII and CRE) on Endothelial Nitric Oxide Synthase Promoter. **Nitric Oxide** *Minor Revision*. *corresponding author

***In Extenso* ARTICLES**

1. Vigorelli V., Resta J., Bianchessi V., Lauri A., Bassetti B., Agrifoglio M., Pesce M., Polvani G., Bonalumi G., Cavallotti L., Alamanni F., Genovese S., Pompilio G., **Vinci MC** *. Abnormal DNA methylation induced by hyperglycemia reduces CXCR4 gene expression in CD34⁺ 2 stem cells. **J Am Heart Assoc.** 2019 May 7;8(9) *corresponding author
2. Bianchessi V, Lauri A, Vigorelli V, Toia M, **Vinci MC***. Evaluating the methylation status of CXCR4 promoter: A cost-effective and sensitive two-step PCR method. **Anal Biochem.** 2017 Feb 15;519:84-91.*corresponding author
3. Avitabile D, Magenta A, Lauri A, Gambini E, Spaltro G, **Vinci MC***. Metaboloepigenetics: the Emerging Network in Stem Cell Homeostasis Regulation. **Curr Stem Cell Res Ther.** 2016;11(4):352-69. *corresponding author
4. Bianchessi V, **Vinci MC**, Nigro P, Rizzi V, Farina F, Capogrossi MC, Pompilio G, Gualdi V, Lauri A. Methylation profiling by bisulfite sequencing analysis of the mtDNA Non-Coding Region in replicative and senescent Endothelial Cells. **Mitochondrion.** 2016 Mar;27:40-7.
5. Santoro R, Consolo F, Spiccia M, Piola M, Kassem S, Prandi F, **Vinci MC**, Forti E, Polvani G, Fiore GB, Soncini M, Pesce M. Feasibility of pig and human-derived aortic valve interstitial cells seeding on fixative free decellularized animal pericardium. **J Biomed Mater Res B Appl Biomater.** 2016 104 (2), pp. 345-356 doi: 10.1002/jbm.b.33404
6. **Vinci MC***, Piacentini L, Chiesa M, Saporiti F, Colombo GI, Pesce M. Inflammatory environment and oxidized LDL convert circulating human proangiogenic cells into functional antigen-presenting cells. **J Leukoc Biol.** 2015 98 (3), pp. 409-421. *corresponding author
7. Prandi F, Piola M, Soncini M, Colussi C, D'Alessandra Y, Penza E, Agrifoglio M, **Vinci MC**, Polvani G, Gaetano C, Fiore GB, Pesce M. Adventitial vessel growth and progenitor cells activation in an ex vivo culture system mimicking human saphenous vein wall strain after coronary artery bypass grafting. **PloS One** 2015 Feb 17;10(2):e0117409. doi: 10.1371/journal.pone.0117409.
8. Santini R, Pietrobono S, Pandolfi S, Montagnani V, D'Amico M, Penachioni JY, **Vinci MC**, Borgognoni L, Stecca B. SOX2 regulates self-renewal and tumorigenicity of human melanoma-initiating cells. **Oncogene.** 2014 Mar 31;0. doi: 10.1038/onc.2014.71.
9. Cipolleschi MG, Marzi I, Santini R, Fredducci D, **Vinci MC**, D'Amico M, Rovida E, Stivarou T, Torre E, Dello Sbarba P, Stecca B, Olivotto M. Hypoxia-resistant profile implies vulnerability of cancer stem cells to physiological agents, which suggests new therapeutic targets. **Cell Cycle.** 2014 Jan 15;13(2):268-78.
10. **Vinci MC**, Tessitore G, Castiglioni L, Prandi F, Soncini M, Santoro R, Consolo F, Colazzo F, Micheli B, Luigi Sironi, Polvani G and Pesce M. Mechanical Compliance and Immunological compatibility of Fixative-free decellularized/cryopreserved Human Pericardium. **Plos One** 2013 May 21;8(5):e64769.
11. Marzi I, Cipolleschi MG, D'Amico M, Stivarou T, Rovida E, **Vinci MC**, Pandolfi S, Dello Sbarba P, Stecca B. Olivotto Massimo. The Involvement of a Nanog, Klf4 and c-Myc Transcriptional Circuitry in the Intertwining between Neoplastic Progression and Reprogramming. **Cell Cycle.** 2013 Jan 15;12(2):353-64. doi: 10.4161/cc.23200.
12. **Vinci MC**. Sensing the Environment: Epigenetic Regulation of Gene Expression. **Journal of Physical Chemistry & Biophysics** Nov 2012.doi./10.4172/2161-0398.S3-001
13. Pandolfi S, Montagnani V., Penachioni JY, **Vinci MC**, Olivito B, Borgognoni L, Stecca B. WIP1 phosphatase modulates the Hedgehog signaling by increasing transcriptional activity, nuclear accumulation and stability of GLI1. **Oncogene** 2012 Nov 12. doi: 10.1038/onc.2012.502.

14. **Vinci MC***, Polvani G, Pesce M. Epigenetic Programming and Risk: The birthplace of cardiovascular disease? **Stem Cell Rev.** 2012 Jul 9 *corresponding author
15. Santini R, **Vinci MC**, Pandolfi S, Penachioni JY, Olivito B, Gattai R, Pimpinelli N, Gerlini G, Borgognoni L, Stecca B. HEDGEHOG-GLI signaling drives self-renewal and tumorigenicity of human melanoma-initiating cells. **Stem Cells.** 2012 Jun 21. doi: 10.1002/stem.1160.
16. Cianchi F, **Vinci MC**, Supuran CT, Peruzzi B, De Giuli P, Fasolis G, Perigli G, Pastorekova S, Papucci L, Pini A, Masini E, Puccetti L. Selective inhibition of carbonic anhydrase IX decreases cell proliferation and induces ceramide-mediated apoptosis in human cancer cells. **J Pharmacol Exp Ther.** 2010 Sep 1;334(3):710-9
17. Cianchi F, Cuzzocrea S, **Vinci MC**, Messerini L, Comin CE, Navarra G, Perigli G, Centorrino T, Marzocco S, Lenzi E, Battisti N, Trallori G, Masini E. Heterogeneous expression of cyclooxygenase-2 and inducible nitric oxide synthase within colorectal tumors: correlation with tumor angiogenesis. **Dig Liver Dis.** 2010 Jan;42(1):20-7.
18. Bryant L, Doyle T, Chen Z, Cuzzocrea S, Masini E, **Vinci MC**, Esposito E, Mazzon E, Petrusca DN, Petrache I, Salvemini D. Spinal ceramide and neuronal apoptosis in morphine antinociceptive tolerance. **Neurosci Lett.** 2009 Sep 29;463(1):49-53.
19. Pasquinelli G, **Vinci MC**, Gamberini C, Orrico C, Foroni L, Guarnieri C, Parenti A, Gargiulo M, Ledda F, Caldarera CM, Muscari C. Architectural organization and functional features of early endothelial progenitor cells cultured in a hyaluronan-based polymer scaffold. **Tissue Eng Part A.** 2009 Sep;15(9).
20. Masini E, Ragazzo E, **Vinci MC**, Nistri S, Cinci L, Mastroianni R, Thurmond RL, Salvemini D. A selective H4R antagonist prevents antigen-induced asthma-like reaction and airway inflammation in guinea pigs. **Inflamm Res.** 2009 Apr;58 Suppl 1:9-10.
21. Cianchi F, Papucci L, Schiavone N, Lulli M, Magnelli L, **Vinci MC**, Messerini L, Manera C, Ronconi E, Romagnani P, Donnini M, Perigli G, Trallori G, Tanganelli E, Capaccioli S, Masini E. Cannabinoid receptor activation induces apoptosis through tumor necrosis factor alpha-mediated ceramide de novo synthesis in colon cancer cells. **Clin Cancer Res.** 2008 Dec 1;14(23):7691-700.
22. Ndengele MN, Cuzzocrea S, Masini E, **Vinci MC**, Esposito E, Muscoli C, Petrusca DN, Mollace V, Mazzon E, Li D, Petrache I, Matuschak GM, Salvemini D. Spinal Ceramide Modulates the Development of Morphine Antinociceptive Tolerance via Peroxynitrite Mediated Nitroxidative Stress and Neuroimmune Activation. **J Pharmacol Exp Ther.** 2008 Nov 25.
23. Bellik L, Musilli C, **Vinci MC**, Ledda F, Parenti A. Human mature endothelial cells modulate peripheral blood mononuclear cell differentiation toward an endothelial phenotype. **Exp Cell Res.** 2008 Oct 1;314(16):2965-74.
24. Masini E, Vannacci A, Failli P, Mastroianni R, Giannini L, **Vinci MC**, Uliva C, Motterlini R, Mannaioni PF. A carbon monoxide-releasing molecule (CORM-3) abrogates polymorphonuclear granulocyte-induced activation of endothelial cells and mast cells. **FASEB J.** 2008 Sep;22(9):3380-8.
25. De Donatis A, Comito G, Buricchi F, **Vinci MC**, Parenti A, Caselli A, Camici G, Manao G, Ramponi G, Cirri P. Proliferation Versus Migration in Platelet-derived Growth Factor Signaling: The Key Role of Endocytosis. **J Biol Chem.** 2008;283:19948-19956.
26. Cianchi F, **Vinci MC**, Masini E. Histamine in cancer: the dual faces of the coin. **Cancer Biol Ther.** 2008 ;7:36-7.
27. **Vinci MC**, Bellik L, Filippi S, Ledda F, Parenti A. Trophic effects induced by alpha1D-adrenoceptors on endothelial cells are potentiated by hypoxia. **Am J Physiol Heart Circ Physiol.** 2007; 293: H2140-7.

28. Bellik L, **Vinci MC**, Filippi S, Ledda F, Parenti A. Intracellular pathways triggered by the selective FLT-1-agonist placental growth factor in vascular smooth muscle cells exposed to hypoxia. **Br J Pharmacol**. 2005 Oct;146(4):568-75.
29. **Vinci MC**, Visentin B, Cusinato F, Nardelli Gb, Trevisi L, Luciani S. Effect of vascular endothelial growth factor and epidermal growth factor on iatrogenic apoptosis in human endothelial cells. **Biochem Pharmacol**. 2004 Jan 15;67(2):277-84.
30. Granchi S, Vannelli Gb, Vignozzi L, Crescioli C, Ferruzzi P, Mancina R, **Vinci MC**, Forti G, Filippi S, Luconi M, Ledda F, Maggi M. Expression and regulation of endothelin-1 and its receptors in human penile smooth muscle cells. **Mol Hum Reprod**. 2002 Dec;8(12):1053-64.
31. Granchi S, Brocchi S, Bonaccorsi L, Baldi E, **Vinci MC**, Forti G, Serio M, Maggi M. Endothelin-1 production by prostate cancer cell lines is up-regulated by factors involved in cancer progression and downregulated by androgens. **Prostate**. 2001 Dec 1;49(4):267-77.
32. Galeotti N, Ghelardini C, **Vinci MC**. & Bartolini A. Role of potassium channels in the antinociception induced by agonists of alpha2-adrenoceptors. **Br J Pharmacol**. 1999 Mar;126(5):1214-20.

PUBLISHED ABSTRACTS

1. **Vinci MC**, Vigorelli, V, Genovese S, Pompilio G. Hyperglycemia Promotes Epigenetic Priming of RELA/p65 Gene in Cord Blood-Derived CD34⁺ Stem Cells and Their Differentiation into Proinflammatory CD16 Myeloid Cell Population. **Diabetes** 68 (Supplement 1), 486-P
2. Vigorelli V., Resta J., Genovese S., Pompilio G., **Vinci MC**. Hyperglycemia epigenetically primes pro-inflammatory RELA/p65 Gene in Cord Blood-Derived CD34+ Stem Cells. **Diabetologia**, 2018; 61 (Suppl 1):S1–S620
3. **Vinci MC**, Vigorelli V., Resta J., Genovese S., Pompilio G. High glucose exposure reduces DNA demethylation of cAMP response element (CRE) region in eNOS promoter during pro-angiogenic CD34+ stem cell differentiation. **Diabetologia**, 2018; 61 (Suppl 1):S1–S620
4. Vigorelli V, Resta J, Pompilio G, **Vinci MC**. High glucose exposure promotes epigenetic activation of pro-inflammatory RELA/p65 gene in cord blood-derived CD34+ stem cells. **Cardiovascular Research** 2018;114; S 1:S55.
5. Vigorelli V., Pompilio G., **Vinci MC**. High glucose exposure promotes activation of pro-inflammatory pathways in cord blood-derived CD34+ stem cells. **Vascular Pharmacology** 2017; Volume 103-105;69
6. Bianchessi V, Vigorelli V, Pompilio G, **Vinci MC**. Specific epigenetic changes associated with the dysfunctional profile in CD34+ cells exposed to high glucose concentration. **Circulation**, November 11, 2016, Volume 134, Issue Suppl 1
7. Bianchessi V, Piacentini L, Chiesa M, Saporiti F, Colombo G, Pesce M, **Vinci MC**. Microarray analysis reveals distinct RNA expression profiles in endothelial progenitor cells exposed to pro-inflammatory environment or oxidized LDL. **Vascular Pharmacology**, 2015 Dec. (75) 42.
8. Bianchessi V, Toia M, Pesce M. and **Vinci MC**. Dysfunctional endothelial progenitor cells in diabetes: establishing a link between epigenetics and metabolic memory. **Diabetologia**, 2015 Sept. (58) 130
9. Santoro R, Consolo F, Spiccia M, et al. Fabrication of bio-prosthetic cardiac valve leaflets using fixative-free cellularized porcine pericardium tissue. **Journal of Tissue Engineering and Regenerative Medicine**, 2014; vol 8, p. 126-127, ISSN: 1932-6254
10. Piola M, Prandi F, Soncini M, et al. A mechanobiology study of the pressure driven remodeling events in human saphenous veins bypass. **Journal of Tissue Engineering and Regenerative Medicine**, 2014; vol. p. 157-158, ISSN: 1932-6254

11. Allievi L, Polvani G, Pesce M, **Vinci MC**. Hyperglycemic 'Memory' Affects Commitment of CD34+ Cord Blood-Derived Stem Cells Into Functional Endothelial Progenitor Cells (EPCs). **Circulation**, 2014; 128: A11492 ISSN: 0009-7322.
12. **Vinci MC**, Piacentini L, Polvani G, Colombo G, I, Pesce M (2013). Pro-Inflammatory Environment and Oxidized LDL Convert "Early" Endothelial Progenitor Cells Into Antigen Presenting Cells With Distinct Gene Expression Profiles. **Circulation**, 2014; 128: A11474 ISSN: 0009-7322.
13. **Vinci MC**, Polvani Gianluca and Pesce Maurizio (2012). Exposure to Oxidized LDL Converts Early Endothelial Progenitors Into Dendritic/Antigen Presenting Cells. **Circulation**, 2012; 126: A9907 ISSN: 0009- 7322.
14. **Vinci MC**, Tessitore Giulio, Castiglioni Laura, Soncini Monica, Consolo Filippo, Micheli Barbara, Prandi Francesca, Santoro Rosaria, Sironi Luigi, Polvani Gianluca and Pesce Maurizio (2012). Fixative-free Decellularization of Human Pericardium Ensures Maintenance of Biomechanical Properties and Maximizes Graft Immunotolerance After Cryopreservation. **Circulation**, 2012; 126, ISSN: 0009-7322.
15. Pandolfi S, **Vinci MC**, Olivito B, et al. (2011). The oncogenic WIP1 phosphatase controls HEDGEHOG_GLI1 signaling pathway. **Febs Journal. Supplement**, 2011; vol. 278, ISSN: 1742-4666.
16. Cianchi F, Battisti N, Trallori G, **Vinci MC**, Perigli G, Cuzzocrea S, Masini E. Heterogeneous expression of cyclooxygenase-2 and inducible nitric oxide synthase within colorectal tumors: correlation with tumor angiogenesis. **European Journal of Cancer. Supplement**, 2009; vol. 7, ISSN: 1359-6349.
17. Parenti A, Bellik L, **Vinci MC**, Ledda F. Different intracellular pathways triggered by selective FLT-1 agonist PLGF in vascular smooth muscle cells exposed to hypoxia. **Journal of Vascular Research**. 2005; vol. 42, ISSN: 1018-1172
18. Bellik L, **Vinci MC**, Ledda F, Parenti A. Early differentiation of human endothelial progenitor cells. **Journal of Vascular Research**. 2005; vol. 42, p. 1, ISSN: 1018-1172.
19. Vinci **MC**, Bellik L, Ledda F, Parenti A (2005). Role of inflammation on dendritic cells and vascular smooth muscle cell interactions. **Journal of Vascular Research**. 2005; vol. 42, ISSN: 1018-1172
20. Parenti A, Bellik L, **Vinci MC**, et al. Monocyte chemoattractant protein-1 directly activates vascular smooth muscle cell proliferation via endogenous VEGF-A. **Fundamental & Clinical Pharmacology**. 2004; vol. 18 p. 94, ISSN: 0767-3981.
21. Bellik L, Parenti A, **Vinci, MC**, et al. Effects of mature vascular cells on human endothelial progenitor cell differentiation. **Fundamental & Clinical Pharmacology**. 2004; vol. 18 p. 88-88, ISSN: 0767-3981.
22. Granchi S, Filippi S, Ledda F, **Vinci MC**, Luconi M, Forti G, Maggi M. Androgen modulation of endothelin receptors in rabbit and human corpora cavernosa. **Journal of Endocrinological Investigation** 23 (8; SUPP/1), P20-P20

SCIENTIFIC BOOK CHAPTERS

Vinci MC, Prandi F, Micheli B, Tessitore G, Guarino A, Dainese L, Polvani G, Pesce M. Natural Membranes as Scaffold for Biocompatible Aortic Valve Leaflets: Perspectives from Pericardium. **Biomaterials and Stem Cells in Regenerative Medicine**. ISBN: 978-1-4398-7925-2.

Autorizzo il trattamento dei miei dati personali ai sensi del Dlgs 196 del 30 giugno 2003 e dell'art. 13 GDPR (Regolamento UE 2016/679) ai fini della ricerca e selezione del personale.