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Surname: Giorgio
Name: Marco
DoB: 30/3/1967
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MS Biology, 1991
PhD Biotechnology, 1999

RESEARCH ACTIVITIES

- 2018-Today Molecular mechanisms of aging - genomic adaptations in response to changes in metabolism, as Associate Professor at the Department of Biomedical Sciences of the University of Padua.
- 2006-2018 Common metabolism of cancer and aging, with particular regard to the pathophysiological mechanisms of adaptation to the environment that reshape the energy metabolism and the redox balance; as a researcher at the Department of Experimental Oncology of the European Institute of Oncology in Milan.
- 1999-2005 Bioenergetics and mitochondria-nucleus signaling pathways and control of cell death; as research assistant of Prof. Pier Giuseppe Pelicci at the European Institute of Oncology in Milan.
- 1997-1999 Function of signal transduction genes; as a postdoctoral fellow in the laboratory of Prof. Pier Giuseppe Pelicci at the European Institute of Oncology in Milan.
- 1995-1996 Pathophysiological role of regulatory genes of hematopoiesis and signal transduction; as a PhD student in the laboratory of Prof. PierPaolo Pandolfi at the Memorial Sloan-Kettering Cancer Center in New York.
- 1992-1994 Production and study of murine transgenic models for the definition of the function of genes involved in development; as an AIRC fellow in the laboratory of Prof. Laura Pozzi at the Regina Elena Institute in Rome.
- 1991-1992 Study of IL-6 mutants, as a trainee in the laboratory of Prof. Gennaro Ciliberto at the Research Institute of Molecular Biology in Pomezia.
- 1989-1991 Characterization of murine transgenic models expressing viral proteins as an internal student in the laboratory of Prof. Marco Tripodi at the Department of Human Biopathology of the "La Sapienza" University of Rome.

The results from these studies are reported in over 100 publications, including 86 original research articles in international peer reviewed journals in the fields of biochemistry, molecular biology, physiology, genetics and medicine, cited 9500 times according to "Scopus - Orcid - Web of Science" (<https://www.scopus.com/authid/detail.uri?authorId=6603620783>) for an h-index of 40. Google Scholar link: <https://scholar.google.com/citations?user=qDBFcb0AAAAJ&hl=en>.

ORIGINAL RESEARCH ARTICLE

1. The Time makes histone H3 modifications drift in mouse liver. Hillje R, Luzi L, Amatori S, Persico G, Casciaro F, Rusin M, Fanelli M, Pelicci P, Giorgio M. Aging. 2022 Jun 10.
2. Hydroxycitric Acid Inhibits Chronic Myelogenous Leukemia Growth through Activation of AMPK and mTOR Pathway. Verrelli D, Dallera L, Stendardo M, Monzani S, Pasqualato S, Giorgio M, Pallavi R. Nutrients. 2022. 14. 2669.
3. Priami C, Montariello D, De Michele G, Ruscitto F, Polazzi A, Ronzoni S, Bertalot G, Binelli G, Gambino V, Luzi L, Mapelli M, Giorgio M, Migliaccio E, Pelicci PG. Aberrant activation of p53/p66Shc-mInsc axis increases asymmetric divisions and attenuates proliferation of aged mammary stem cells. Cell Death Differ. 2022 Jun 23.
4. The early-life stress induced by oxytocin inhibition in p53 knockout mouse dams increases adulthood tumorigenesis in first and second generations. Stendardo M, Renzi C, Pallavi R, Roda N, Gambino V, Casciaro F, Persico G, Giorgio M. Cancer Reports. 2022;e1625.
5. Histone H3 lysine 4 and 27 trimethylation landscape of human alzheimer's disease. Persico G, Casciaro F, Amatori S, Rusin M, Cantatore F, Perna A, Alberi Auber L, Fanelli M, Giorgio M. Cells. 2022, 11;734.
6. Dietary intake of cyanidin-3-glucoside induces a long-lasting cardioprotection from ischemia/reperfusion injury by altering the microbiota. Trinei M, Carpi A, Menabo R, Storto M, Fornari M, Marinelli A, Minardi S, Riboni M, Casciaro F, DiLisa F, Petroni K, Tonelli C, Giorgio M. J Nutr Biochem. 2022. 101: 108921.

7. Hematopoietic progenitor cell liabilities and alarmins S100A8/A9-related inflammaging associate with frailty and predict poor cardiovascular outcomes in older adults. Bonora BM, Palano MT, Testa G, Fadini GP, Sangalli E, Madotto F, Persico G, Casciaro F, Vono R, Colpani O, Scavello F, Cappellari R, Abete P, Orlando P, Carnelli F, Berardi AG, De Servi S, Raucci A, Giorgio M, Madeddu P, Spinetti G. *Aging Cell*. 2022 Feb 15:e13545.
8. Hematopoietic and non-hematopoietic p66Shc differentially regulates stem cell traffic and vascular response to ischemia in diabetes. Albiero M, D'Anna M, Bonora BM, Zuccolotto G, Rosato A, Giorgio M, Iori E, Avogaro A, Fadini GP. *Antioxid Redox Signal*. 2022.
9. The Histone H3 K4me3, K27me3, and K27ac Genome-Wide Distributions Are Differently Influenced by Sex in Brain Cortexes and Gastrocnemius of the Alzheimer's Disease PSAPP Mouse Model. Casciaro F, Persico G, Rusin M, Amatori S, Montgomery C, Rutkowsky JR, Ramsey JJ, Cortopassi G, Fanelli M, Giorgio M. *Epigenomes*. 2021. 5:26.
10. Comparative analysis of histone H3K4me3 distribution in mouse liver in different diets reveals the epigenetic efficacy of cyanidin-3-O-glucoside dietary intake. *International Journal of Molecular Sciences*. Persico G, Casciaro F, Marinelli A, Tonelli C, Petroni K, Giorgio M. 2021. 22:6503.
11. The determining role of mitochondrial reactive oxygen species generation and monoamine oxidase activity in doxorubicin-induced cardiotoxicity. Antonucci S, Di Sante M, Tonolo F, Pontarollo L, Scalcon V, Alanova P, Menabò R, Carpi A, Bindoli A, Rigobello MP, Giorgio M, Kaludercic N, Di Lisa F. *Antioxid Redox Signal*. 2021. 34:531-550.
12. In *S. cerevisiae* hydroxycitric acid antagonizes chronological aging and apoptosis regardless of citrate lyase. Baroni MD, Colombo S, Libens O, Pallavi R, Giorgio M, Martegani E. *Apoptosis*. 2020. 25:686-696.
13. Diabetes-Associated Myelopoiesis Drives Stem Cell Mobilopathy Through an OSM-p66Shc Signaling Pathway. Albiero M, Ciciliot S, Tedesco S, Menegazzo L, D'Anna M, Scattolini V, Cappellari R, Zuccolotto G, Rosato A, Cignarella A, Giorgio M, Avogaro A, Fadini GP. *Diabetes*. 2019. 68:1303-1314.
14. Interplay among H3K9-editing enzymes SUV39H1, JMJD2C and SRC-1 drives p66Shc transcription and vascular oxidative stress in obesity. Costantino S, Paneni F, Virdis A, Hussain S, Mohammed SA, Capretti G, Akhmedov A, Dalgaard K, Chiandotto S, Pospisilik JA, Jenuwein T, Giorgio M, Volpe M, Taddei S, Lüscher TF, Cosentino F. *Eur Heart J*. 2019. 40:383-91.
15. Epigenomic profiling of archived FFPE tissues by enhanced PAT-ChIP (EPAT-ChIP) technology. Amatori S, Persico G, Paolicelli C, Hillje R, Sahnane N, Corini F, Furlan D, Luzi L, Minucci S, Giorgio M, Pelicci PG, Fanelli M. *Clin Epigenetics*. 2018. 10:143.
16. Therapeutic synergy between tigecycline and venetoclax in a preclinical model of MYC/BCL2 double-hit B cell lymphoma. Ravà M, Aleco D'Andrea A, Nicoli P, Gritti I, Donati G, Doni M, Giorgio M, Olivero D, Amati B. *Sci Transl Med*. 2018. 10:426.
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21. Novel Insights into the PKC β -dependent Regulation of the Oxidoreductase p66Shc. Haller M, Khalid S, Kremser L, Fresser F, Furlan T, Hermann M, Guenther J, Drasche A, Leitges M, Giorgio M, Baier G, Lindner H, Troppmair J. *J Biol Chem*. 2016. 291:23557-68.
22. The mitochondrial translation machinery as a therapeutic target in Myc-driven lymphomas. A D'Andrea, I Gritti, P Nicoli, M Giorgio, M Doni, A Conti, V Bianchi, LCasoli, A Sabò, A Mironov, GV Beznoussenko, B Amati. *Oncotarget*. 2016. 7:72415-30.

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103. Characterization of O₂ Metabolism in Isolated Mitochondria Revealed Massive Production of H₂O₂ Upon ATP Synthase Activation. Raluca M, Rapino S, Paolucci F, Giorgio M. *Electrochemical Hydrogen Peroxide: Detection, Applications and Health Implications.* 2012. Pag. 189-202. NovaPublishers. ISBN: 978-1-62257-415-5.
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TEACHING AND STUDENT SERVICE ACTIVITIES

Currently:

- Confirmed Associate Professor of Biochemistry (BIO / 10), Department of Biomedical Sciences, University of Padua (<https://en.didattica.unipd.it/off/docente/E8DA334E5D64275026A9DA770F992DE9>).

Previously:

- Adjunct Professor of Molecular Biology 2017-2018, CdL Biological Sciences, Department of Science and Technological Innovation, University of Eastern Piemonte.
- Adjunct professor teaching Physiology 2017-2019, CdL Techniques for prevention in the environment and in the workplace, Department of Biomedical Sciences, University of Milan.
- Supervisor of 10 three-year degree theses (Uni-Milano and Uni-Padova), 6 master's degree theses (Uni-Milano and Uni-Pavia) and 5 PhD theses (Uni-Milano, Uni-Torino, Uni- Bologna and SEMM-IEO).
- Project manager (host PI) of three-year FIRC, FUV and Telethon scholarships for postgraduate students.
- Lecturer of seminars and specialized courses at the Universities of Milan, Padua, Bologna, Trento.

ORGANIZATIONAL ACTIVITIES

- Supervisor of 10 post-docs of which 3 are currently independent researchers.
- Organization of the genomic analysis unit at the Department of Biomedical Sciences of the University of Padua.
- From 2006 to 2018, direction of a research group consisting of 6-10 researchers in the Department of Experimental Oncology of the IEO-Milan; supervision of the research activities of the nutrigenomics program at IEO-Milan; participation in the technical committees of the Department of Experimental Oncology of IEO-Milan; coordination of industrial research projects for the development of micro-tools for the analysis of the cellular redox balance, for the study of recombinant proteins produced in plant systems (ABR-Active Botanicals Research) and for the validation of the anti-obesity and hypoglycemic effects of plant bioactives (INDENA - Natural Derivatives Industry).
- Since 2004 planning and implementation of research projects at IEO-Milan and industrial collaborations for the development of diagnostics (STMicroelectronics) and new drugs (Genextra-Congenita).
- Co-founder in 2003 of the biotechnology research company Congenita later merged into Genextra SpA.
- Installation of laboratories and development of new experimental models of human pathologies ("Transgenic facilities": 1992-1994 IRE-Rome, 1997-2003 IEO-Milan).

PARTICIPATION TO THE FOLLOWING FUNDED RESEARCH PROJECTS (*last 10 years*):

1. Crossing the histone barcode of elderly and Alzheimer's disease to identify markers of disease risk and reveal novel epigenetic mechanism of aging (Ricerca Finalizzata Ministero Salute, 2020-2023) PI.

2. Disclosing the common epigenetic markers of aging and cognitive decline (BIRD 2021, UniPd) PI.
3. Optimizing ketogenic diet strategies to increase health span and longevity (national institute of Aging USA, 2019-2024) Unit co-PI.
4. Dissecting the crosstalk between mitochondria and nucleus in mammalian stem cells aging. (Starting Grant – DSB 2019-2022, UniPd) PI.
5. Bone marrow as a key organ contributing to frailty in the elderly (CARIPLO, 2017-2019) Unit PI.
6. Exploiting the p53-mitochondrial pathway: molecular mechanisms of the increasing risk of cancer associated with aging (AIRC, 2015-2018) PI.
7. Shc, mitochondria healthy aging and longevity (national institute of Aging USA, 2012-2015) Unit Co-PI.
8. Targeting mitochondrial p53 impacts on tumorigenesis (Fondazione Umberto Veronesi, 2012-2014) PI.
9. Epigenetic control of breast cancer progression: animal and clinical studies (Ricerca Finalizzata Ministero Salute, 2011-2014) Unit PI.
10. Validate the protective role of flavonoid enriched diet on muscle and cardiac drug toxicity (Fondazione Umberto Veronesi, 2011-2013) Unit PI.
11. Riconoscimento precoce della cardiotoxicità dei farmaci antitumorali ed effetti dell' intervento farmacologico con ACE-inibitore sulla sopravvivenza cardiaca (regione Lombardia, 2011-2013) Unit PI.
12. Anthocyanin and polyphenol bioactives for health enhancement through nutritional advancement (FP7 EU 2010-2014) Unit PI.
13. Development of cytochrome c assay marker of ischemia/reperfusion damage to the heart (Fondazione Umberto Veronesi, 2010-2012) Coordinator.
14. Animal models of neuroferritinopathies for the study of the role of iron in neurodegeneration (Telethon 2010-2012) Unit PI.
15. Identification of mitochondrial mechanisms and markers of cardiotoxicity to improve chemotherapy tolerance (AIRC, 2010-2012) Unit PI.

PATENTS:

- Phenyl substituted maleimides as medicaments for blocking degenerative tissue damages by inhibiting mpt. Pelicci PG, Giorgio M, Minucci S, Bernardi P, Pain G, Courtney S, Yarnold C, Kraemer J. 2011. WO Patent n 2008067863. US7915304 B2.
- Materials and methods relating to modulation of p66 expression. Pelicci PG, Giorgio M, Migliaccio E, Lanfrancone L. 2000. WO Patent n. 2000056886.

OTHER INFO

- Member of the scientific committee of the Umberto Veronesi Foundation.
- Member of the International Society of Cardioncology.
- Member of the consultants committee of Genextra spa.
- Member of the editorial board of the journal Epigenomes and Frontiers in physiology.
- Invited speaker at numerous international scientific and dissemination congresses including: Euro. Bioen. Conf. 2004, 2006; EUR. Soc. Card. 2005, 2008; ColdSpringHarbor Lab. - Banbury 2005, 2006; Gordon Res. Conf. 2010; Culture Foundation - Genoa (www.youtube.com/watch?v=9lb8Z2AhcQk).
- Qualified (ASN) for the functions of second-tier professor in the competitive sectors: 05/D1, 05/E1, 05/E2 and 05/F1.
- AIRC awarded 1992; FUV awarded 2010.
- Reviewer of about twenty manuscripts per year for various international scientific journals.
- Auditor of funding requests on behalf of national and international agencies.

The declarations made in this curriculum are to be considered issued pursuant to the law: Art. 46 e 47 of DPR n. 445/2000.

Signature MG

Date, June 28 2022