

Curriculum Vitae et Studiorum of Prof. Antonio Lavecchia

PERSONAL DATA

Date of Birth: February 12, 1968

Place of Birth: Salerno, Italy

Nationality: Italian

Professional Address: Department of Pharmacy

University of Naples Federico II

“Drug Discovery” Laboratory

Via D. Montesano 49, 80131 Napoli

E-mail: antonio.lavecchia@unina.it

EDUCATIONAL AND PROFESSIONAL CAREER

- 2012 to date - **Full Professor** of Medicinal Chemistry at the University of Napoli Federico II
- 2005-2012 - **Associate Professor** of Medicinal Chemistry at the University of Napoli Federico II
- 2001-2005 - **Assistant Professor** of Medicinal Chemistry at the University of Napoli Federico II
- 1996-1999 - **PhD** in “Pharmaceutical Sciences” at the University of Catania
- 1993-1995 - **Master in Business Administration (MBA)** at the Libera Università Internazionale degli Studi Sociali (L.U.I.S.S) Guido Carli of Roma
- 1987-1992 - **MSc** in Pharmacy 110/110 *magna cum laude* at the University of Pisa
- 2008 - **Visiting Researcher** at the *Rega Institute for Medical Research* - Katholieke Universiteit Leuven (Belgium)

- 2002 - **Visiting Researcher** at the *Institut für Organische Chemie und Biochemie* - Technische Universität, München (Germany)
- 2001 - **Visiting Researcher** at the *IMIM (Institut de Recerca Hospital del Mar)* - (Barcelona)
- 1998-1999 - **Visiting Researcher** at the *College of Pharmacy* - University of Minnesota (USA)

RESEARCH INTEREST AND SCIENTIFIC ACTIVITY

Prof. **Lavecchia**'s research interests are in the field of computational drug discovery and medicinal chemistry. Most of the work conducted in his group is aimed at developing and applying new computational approaches to accelerate the discovery of novel lead and drug candidates in several therapeutic areas, including cancer, diabetes, inflammation, infectious diseases, and other human conditions. Currently, he is harnessing diverse and large-scale public data (*big data*) with *machine learning* approaches for the early stage of drug development.

Prof. **Lavecchia** is the author of over 157 publications (25 articles as first-author and 63 as corresponding author) in international journals with a high impact factor (*J. Med. Chem., Nature Sci. Rep., J. Biol. Chem., J. Am. Chem. Soc., Biochemistry, Mol. Canc. Ther., Oncotarget, Front. Immunol., Drug Disc. Today, Future Med. Chem., Curr. Med. Chem., etc.*), 4 patents, 1 editorial, 1 book, 3 book chapters, and has participated in several Italian and International Conferences presenting his researches. More details about Prof. Lavecchia's scientific activity are available at <http://www.drugdiscoverylab.unina.it/>

- 2012 to date, Prof. Lavecchia is a regular contributor of scientific articles on the mechanisms of action of drugs and their adverse effects for the monthly medical-scientific magazine "Farmacia News" (Tecniche Nuove Ed. - Milan).

- 2018 to date, he is Scientific Responsible of the Molecular Modeling Excellence Laboratory (LMM) of the Department of Pharmacy of the University of Naples Federico II.

- 2018 to date, he is Scientific Consultant in Preclinical Drug Development (small molecules) of the Italian accelerator for the red-biotech BiovelocITA (Milan) in the field of oncological, neurodegenerative, rare genetic and inflammation diseases.

- In 2020, Prof. Lavecchia participated with the patent "Inhibitors of the interaction of uPAR/FPRs receptors." Pat. Ital. IT 102020000006931 for the establishment of the spin-off ORPHA-BIOTECH Srl, which carries out research and development in the field of bioscience and biotechnology using small molecules that act on rare diseases.

BIBLIOMETRIC PARAMETERS

- H-index: 41 (Scopus)
- Total number of publications: 140 (Scopus)
- Total sum of citations: 4651 (Scopus)
- Average citations per item: 33.2 (Scopus)

BOOKS AND CHAPTERS OF BOOKS

- Lavecchia, A. "Prostanoids." In "Chimica Farmaceutica", Gasco, A., Gualtieri, F., Melchiorre, C., Zanichelli, Second Edition, ISBN: 9788808420268, Milan 2020.
- Lavecchia, A. "Prostanoids." In "Chimica Farmaceutica", Gasco, A., Gualtieri, F., Melchiorre, C., Zanichelli, First Edition, ISBN: 9788808187123, Milan 2015.
- Lavecchia, A. "Vaccini e vaccinazioni." In "La Gestione Tecnico Professionale della Farmacia", Novellino, E., Iadevaia, V. Punto Effe Editore, ISBN: 97888882306892012, Milan 2012.
- Lavecchia, A. "Guida a vaccini e vaccinazioni", Tecniche Nuove, ISBN: 9788848124669, Milan 2009.

PATENTS

- De Paulis, A.; **Lavecchia, A.**; Montuori, N., Rossi, F.W. Inibitori dell'Interazione dei Recettori uPAR/FPRs. Pat. Ital. IT 102020000006931, 2020.
- Bolognese, A.; **Lavecchia, A.**; Montuori, N.; Selleri, C. Inibitori di proteine di prenilazione come agenti antitumorali: processo di preparazione ed impieghi in campo medico. Patent n. NA2009A000047, 2009.

- Silvestri, R.; Marfè, G.; Abruzzese, E.; Catalano, G.; Di Stefano, C.; Novellino, E.; Sinibaldi Salimei, P.; La Regina, G.; **Lavecchia, A.** Benzodiazepine Derivatives and Uses Thereof in Medical Field. *PCT Int. Appl.* 2007, 35pp. CODEN: PIXXD2 WO 2007015280 A1 20070208 AN 2007:147008 CAPLUS
- Crestani, M.; Pinelli, A.; Godio, C.; Mitro, N.; Tortorella, V.; Liodice, F.; Fracchiolla, G.; Laghezza, A.; **Lavecchia, A.**; Novellino, E.; Fruchart, J.-C.; Staels, B. Clofibrilic Acid Analogues and their Use as Ligands of Nuclear Peroxisome Proliferator Activated Receptors (PPARs) α and γ in the Treatment of Metabolic Disorders. Patent n. MI2004A 000405, 2004.

HONOURS AND AWARDS

- 2011: Prof. Lavecchia appears in the list of the 168 best scientists of the University of Naples Federico II reported in the ranking of the about 160 thousand best international scientists, drawn up by the journal *Plos Biology* (Stanford University).
- 2010: Prof. Lavecchia appears in the list of the 90 best scientists of the University of Naples Federico II reported in the ranking of the 100 thousand best international scientists, drawn up by the journal *Plos Biology* (Stanford University).
- 2020: he is the recipient of the Front Cover of *ACS Medicinal Chemistry Letters* (March 3, 2020) with the article "Sulfonimide and Amide Derivatives as Novel PPAR α Antagonists: Synthesis, Antiproliferative Activity and Docking Studies. *ACS Med. Chem. Lett.*, 11, 5, 624-632, ISSN: 1948-5875, doi: doi.org/10.1021/acsmchemlett.9b00666.
- 2018: Prof. Lavecchia's scientific profile appears in the "Meet the Editorial Board" section of the *Current Medicinal Chemistry* journal (Volume 25, Issue 12, 2018, doi: 10.2174/092986732512180419114514).
- 2010: START CUP CAMPANIA AWARD 2010 FOR THE BEST BUSINESS IDEA. Description: Start Cup Campania is an official award promoted by the Universities situated in the Campania Region, Italy. It is finalized at create a challenge among groups of people whom have entrepreneurial initiatives in the start-up stage. It is a real business plan competition aimed at sustain technological research and innovation to improve the level of economic and social development of the Region. Indeed, it stimulate the born of new firms high level of knowledge based. Participants are students, researchers and teacher of Campania Universities. The challenge is part of the National

Award for Innovation (PNI), a National challenge Italy based among all the Italian universities. Motivation: "ISHTAR - Production and Marketing of New Phytotherapeutic and Nutraceutical Substances in the Treatment of Dyslipidaemias, Diabetes and Metabolic Syndrome."

- 2009: START CUP CAMPANIA AWARD 2009 FOR THE BEST BUSINESS IDEA. Motivation: "AVICENNA - Anticancer Agents for Treatment of Acute and Chronic Myeloid Leukemia."

- 2006: FARMINDUSTRIA ITALIAN NATIONAL AWARD FOR RESEARCH EXCELLENCE IN MEDICINAL CHEMISTRY, dedicated to scientists younger than 40 years old. Description: The Farindustria Prize is awarded annually, within the framework of the Convention stipulated between Farindustria and Division of Medicinal Chemistry of the Italian Chemical Society, to researchers working in the Italian University and Industry and who have distinguished themselves by an outstanding contribution to the design, synthesis and/or optimization of bioactive substances, their metabolism or the analytical, computational, chemical, physico-chemical techniques related to the discovered bioactive substances. Motivation: Prof. Lavecchia has been awarded for the quality of research conducted in the pharmaceutical sciences and in particular for his studies on the design and drug discovery of new potential agents of therapeutic interest.

INTERNATIONAL SCIENTIFIC COLLABORATIONS

Prof. Dr. Jürgen Bajorath (Bonn Aachen International Center for Information Technology [B-IT] and University of Bonn's LIMES Institute, Germany); Prof. C S Ramaa (Department of Pharmaceutical Chemistry, Bharati Vidyapeeth's College of Pharmacy, Navi Mumbai, India); Prof. Vadim S. Pokrovsky (Laboratory of Combined Therapy, N.N. Blokhin Cancer Research Center, 115478 Moscow (Russia); Prof. Kenneth A. Jacobson (National Institute of Diabetes and Digestive and Kidney Diseases, NIH, Bethesda, Maryland, USA); Prof. Karl-Norbert Klotz (Institut für Pharmakologie und Toxikologie, Universität Würzburg, Würzburg, Germany); Prof. Øystein Bruserud (Department of Clinical Science, Faculty of Medicine and Dentistry, University of Bergen, Bergen, Norway); Prof. Dr. Tanja Schirmeister (Johannes-Gutenberg University of Mainz, Mainz, Germany); Prof. Venkatesan Jayaprakash (Department of Pharmaceutical Sciences & Technology, Birla Institute of Technology, Mesra, India) Prof. Dr. Horst Kessler (Institute for Advanced Study, Department Chemie TU München, Garching, Germany); Prof. Jan Balzarini (Rega Institute for Medical Research, Katholieke Universiteit Leuven, Leuven, Belgium); Prof. Ernest Hamel (National Cancer Institute at Frederick, National Institutes of Health, Frederick,

Maryland, USA); Prof. Yves Pommier (National Cancer Institute, Bethesda, Maryland, USA); Prof. Andrea Brancale (Welsh School of Pharmacy, Cardiff University, UK).

PEER REVIEWER FOR INTERNATIONAL JOURNALS

Journal of Medicinal Chemistry; Scientific Reports; ACS Medicinal Chemistry Letters; European Journal of Medicinal Chemistry; Bioorganic & Medicinal Chemistry; Bioorganic & Medicinal Chemistry Letters; Future Medicinal Chemistry; PLoS ONE; Journal of Computer Aided-Molecular Design; ChemMedChem, Proteins; ChemBioChem; Journal of Molecular Biology; Molecular Cancer Therapeutics, Biochimica and Biophysica Acta; Britannic Journal of Pharmacology; Oncotarget.

EXTERNAL REVIEWER FOR FOUNDATIONS AND RESEARCH ORGANIZATIONS

- Italian Ministry of Education University and Research (MIUR), Rome, Italy. *Research Programmes*: “PRIN 2003, 2009, 2013”, “Futuro in Ricerca (FIRB) 2013” and “Scientific Independence of young Researchers (SIR) 2014”.
- Italian National Agency for the Evaluation of the University and Research Systems (ANVUR), Rome, Italy. *Research Programmes*: VQR 2004-2010 and VQR 2011-2014.
- Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI), Bucarest, Romania. *Collaborative Research Project*: European Economic Area (EEA) & Norway Grants 2014-2021.
- ITMO Cancer of the French National Alliance for Life and Health Sciences (AVIESAN), French National Cancer Institute, and INSERM (Paris). *Research Programme*: PLAN CANCER 2014-2019.
- Mohammed Bin Rashid University (MBRU) of Medicine and Health Sciences, Dubai, United Arab Emirates. *Research Programme*: MBRU-ALMAHMEED Collaborative Research Award 2019.
- Swiss National Science Foundation (SNSF), Bern, Switzerland. *Research Programme*: Scientific co-operation between Eastern Europe and Switzerland (SCOPES) 2013-2016.
- Czech Science Foundation (GACR), Prague, Czech Republic. *Research Programme*: Standard Grant Projects.

- Czech Health Research Council (Ministry of Health of the Czech Republic), Prague, Czech Republic. Evaluation and administrative processing of project proposals in applied medical research and development.
- Swiss Cancer League, Bern, Switzerland. Evaluation of basic, clinical, epidemiological and psychosocial research projects with distinct cancer relevance.
- National Science Centre, Kraków, Poland. *Research Programmes*: “OPUS 8 and 13”, “SONATA BIS 6 and 7” and “PRELUDIUM 12”.
- Luxembourg National Research Fund (FNR), Luxembourg. Research Programme: PEARL grant 2020.

PARTICIPATION IN EDITORIAL BOARD OF SCIENTIFIC JOURNALS AND MEMBERSHIP

- Nature's Scientific Reports (<https://www.nature.com/srep/>).
- Bentham's *Current Medicinal Chemistry* (<http://benthamscience.com/journals/current-medicinal-chemistry/>).
- 2001 to date, Member of the Italian Chemistry Society (SCI), Division of Medicinal Chemistry
- 2013 to date, Member of the Academic Board of the PhD Program in Pharmaceutical Science of the Department of Pharmacy, University of Napoli Federico II, Italy.

EXTERNALLY FUNDED NATIONAL AND INTERNATIONAL PROJECTS

- POR Campania FESR 2014/2020, "Fighting tumor resistance: an integrated multidisciplinary platform for an innovative technological approach to oncotherapies - CAMPANIA ONCOTERAPIE", (Project number B61G18000470007). End date: 31-06-21. Role: Participant.
- RESEARCH & MOBILITY (R&M) PROJECT 2015 promoted and funded by the University of Messina, “Development of novel 20S immunoproteasome-specific inhibitors for the treatment of hematological malignancies, autoimmune and inflammatory diseases”, (Project number: 19302940). End date: 05-02-17. Role: Participant.
- PRIN 2010-2011, “Design, Synthesis and Biological Studies of Innovative Drugs Directed against Relevant Targets in Cancer Therapy”, (Project number: 2010W7YRLZ_003). End date: 01/02/2016. Role: Research Unit PI.

- CARIPLO FOUNDATION PROJECT 2009 (<http://www.fondazionecariplo.it>), “Peroxisome Proliferator-Activated Receptors (PPARs) in the Regulation of Glucose and Lipid Metabolism: a Multidisciplinary Approach for the Identification and Characterisation of New Ligands to Improve Therapeutic Interventions in Diabetes, Obesity and Metabolic syndrome”, (Project number: 2009.2727). End date: 15/02/2014. Role: Research Unit PI.
- PRIN 2008, “Drug Design, Synthesis and Biological Activity of New Molecules Targeting Cellular Mitosis in Antitumoral Therapy”, (Project number: 200879X9N9_002). End date: 22/09/2012. Role: Research Unit PI.
- PRIN 2006, “Molecular Modelling and Design of Integrase, Reverse Transcriptase, and Tat-TAR Complex Inhibitors as Anti-AIDS Agents”, (Project number: 2006030809_003). End date: 09/02/2009. Role: Research Unit PI.
- PRIN 2004, “Design and Synthesis of New Antitumoral DNA-Intercalating Drugs and Farnesyltransferase Inhibitors”, (Project number: 2004031241_004). End date: 30/11/2006. Role: Research Unit PI.
- PRIN 2003, “Design, Synthesis and Biological Evaluation of Active Peptidomimetics on the Human Urotensin Receptor and on PPARs”, (Project number: 2003033405_007). End date: 20/11/2005. Role: Research Unit Participant.