



Prof. Giovanni Di Bonaventura - Curriculum vitae (short version)

Personal

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Education

- 2008: Specialist in Clinical Microbiology and Virology, "Tor Vergata" University of Rome
- 2001: Visiting Researcher, Division of Monoclonal Antibodies, Center for Biologics Evaluation and Research, US Food and Drug Administration (FDA), Bethesda, Washington, USA
- 1999: PhD in Clinical Microbiology, University of Chieti-Pescara
- 1997: Specialist in Biomedical Advanced Technologies & Clinical Applications, University of Chieti-Pescara
- 1991: Degree in Biological Sciences, University of Bologna

Current Position

Full Professor, Microbiology

Head of Clinical Microbiology Unit, Department of Medical, Oral, and Biotechnological Sciences, and Center for Advanced Studies and Technology (CAST), "G. d'Annunzio" University of Chieti-Pescara - 66100 Chieti (CH), Italy.
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Teaching

- 2008-present: Microbiology in Laboratory Medicine, Faculty of Medicine and Surgery, Magisterial Degree Courses in Medicine and Surgery, University of Chieti-Pescara.
- 2005-present: Clinical Microbiology, Faculty of Medicine and Surgery, Magisterial Degree Courses in Medicine and Surgery, University of Chieti-Pescara.
- 2004-present: Microbiological Medicine, Faculty of Medicine and Surgery, First Level Degree Course in Circulatory Physiopathology and Cardiovascular Perfusion, University of Chieti-Pescara.
- 2002-present: Virology, Faculty of Medicine and Surgery, First Level Degree Course in Medical Technology, University of Chieti-Pescara.
- 1999-present: Microbiology Laboratory Organization, Faculty of Medicine and Surgery, First Level Degree Course in Medical Technology, University of Chieti-Pescara.
- 2005-2006: Microbiology, Faculty of Medicine and Surgery, First Level Degree Course in Physiotherapy, University of Chieti-Pescara.
- 2001-2003: Evaluation of in vitro antibiotic activities, Faculty of Medicine and Surgery, First Level Degree Course in Medical Technology, University of Chieti-Pescara.
- 2001-2003: Automation in the Clinical Microbiology Laboratory, Faculty of Medicine and Surgery, First Level Degree Course in Medical Technology, University of Chieti-Pescara.

Research Experience

- Research interests have mainly been directed to the study of bacterial and fungal biofilms, with particular attention to those causing lung infections in cystic fibrosis (CF) patients: a) in vitro and in vivo evaluation of innovative therapeutic strategies for biofilm-related infections (antimicrobial synthetic and natural compounds; drug repurposing; QS-inhibitors; phage therapy); b) in vitro evaluation of the effects of abiotic and biotic factors on bacterial biofilm; c) standardization of in vivo and in vitro models to study biofilm formation and its susceptibility to antibiotics; d) evaluation of the role played by *Stenotrophomonas maltophilia* and *Pseudomonas aeruginosa* in CF lung infections.
- ORCID: <https://orcid.org/0000-0001-5850-2810>. Co-author of over 270 scientific publications: 123 full-paper in international reviewed journals (h-index: 34, citations number: 5600; Scopus), 131 participations to National and International Workshops, Congresses, and Symposia.
- Ad-hoc Reviewer for numerous international journals (e.g., Critical Reviews in Microbiology, Clinical Microbiology Reviews, Scientific Reports, PLoSOne, Virulence, Frontiers in Microbiology, Future Microbiology, Journal of Antimicrobial Chemotherapy, Journal of Applied Microbiology, Journal of Chemotherapy, Journal of Medical Microbiology, Pathogens and Disease, BMC Microbiology, European Journal of Clinical Microbiology & Infectious Diseases, Food Control, Peptides, International Journal of Bacteriology, Biofouling), and for national and international grant applications.
- Editorial Board or "guest Editor" for several scientific journals (e.g., Frontiers in Microbiology, World Journal of Respiratory, Austin Clinical Microbiology, Antibiotics, Microorganisms, International Journal of Molecular Sciences).
- Recipient or co-recipient of several Research Projects, among which:

- 2021-2022: Research Project: "Probiotics: an emerging strategy to fight bacterial pulmonary infections in CF" (funded by the Italian Cystic Fibrosis Research Foundation).
- 2012-2016: Participation to the COST (European Cooperation in the field of Scientific and Technical Research) action: "A European Network For Mitigating Bacterial Colonisation and Persistence On Foods and Food Processing Environments." (Proposer: Dr. Hülya Ölmez, TÜBİTAK MAM, Turkey).
- 2012-2013: Research Project: "Naturally occurring antimicrobials to counteract lung infections in cystic fibrosis patients: Cecropin A-Melittin (CA-M) hybrid peptides and polymyxins" (funded by the Italian Cystic Fibrosis Research Foundation).
- 2012-2013: Research Project: "Development of optimized anti-infective peptides and exploration of a novel drug delivery system for the respiratory infection therapy in an animal model" (funded by the Italian Cystic Fibrosis Research Foundation).
- 2009-2010: Research Project: "Novel strategies for respiratory infection therapy in CF. Use of natural and designed antibacterial peptides" (funded by the Italian Cystic Fibrosis Research Foundation).
- 2007-2008: Research Project: "*Stenotrophomonas maltophilia*, a multidrug resistant emergent pathogen associated to cystic fibrosis: a post-genomic approach to identify new immunological and therapeutic targets" (funded by the Italian Cystic Fibrosis Research Foundation).
- 2007-2008: Research Project: "Microbiology of cooperative interactions between microorganisms: implications for control of respiratory and gastric infections pathogenesis, for characterization of microbial biofilms and for identification of new pharmacological anti-biofilm strategies" (funded by MIUR, PRIN 2007).
- 2005-2006: Research Project: "*Stenotrophomonas maltophilia*, an emergent pathogen associated to cystic fibrosis: identification and molecular characterization of virulence determinants as potential targets for new therapeutic strategies" (funded by the Italian Cystic Fibrosis Research Foundation).
- 2005-2006: Research Project: "Microbial biofilms as a dynamic system replying to environmental stress: Innovative approaches in prevention and formulation of new integrated therapeutic strategies". (funded by MIUR, PRIN 2005)
- 2003: Research Project "Biological control, genic expression and role of immune response in the biofilm formed by *Pseudomonas aeruginosa*, *Burkholderia cepacia* and *Stenotrophomonas maltophilia* from patients with cystic fibrosis". (funded by 1% Sanità 2003)

Selected bibliography

Most relevant publications.

1. Carullo G, Di Bonaventura G, Rossi S, Lupetti V, Tudino V, Brogi S, Butini S, Campiani G, Gemma S, Pompilio A. Development of quinazolinone derivatives as modulators of virulence factors of *Pseudomonas aeruginosa* cystic fibrosis strains. *Molecules*. 2023 Sep 9;28(18):6535. doi: 10.3390/molecules28186535.
2. Batoni G, Catelli E, Kaya E, Pompilio A, Bianchi M, Ghelardi E, Di Bonaventura G, Esin S, Maisetta G. Antibacterial and Antibiofilm Effects of Lactobacilli Strains against Clinical Isolates of *Pseudomonas aeruginosa* under Conditions Relevant to Cystic Fibrosis. *Antibiotics (Basel)*. 2023 Jul 7;12(7):1158. doi: 10.3390/antibiotics12071158.
3. Maifreni M, Di Bonaventura G, Marino M, Guarnieri S, Frigo F, Pompilio A. Biofilm formation under food-relevant conditions and sanitizers' tolerance of a *Pseudomonas fluorescens* group strain. *J Appl Microbiol*. 2023 Jun 1;134(6):lxad117. doi: 10.1093/jambio/lxad117.
4. Di Bonaventura G, Lupetti V, Di Giulio A, Muzzi M, Piccirilli A, Cariani L, Pompilio A. Repurposing high-throughput screening identifies unconventional drugs with antibacterial and antibiofilm activities against *Pseudomonas aeruginosa* under experimental conditions relevant to cystic fibrosis. *Microbiol Spectr*. 2023 Jun 12:e0035223. doi: 10.1128/spectrum.00352-23.
5. Di Bonaventura G, Picciani C, Lupetti V, Pompilio A. Comparative proteomic analysis of protein patterns of *Stenotrophomonas maltophilia* in biofilm and planktonic lifestyles. *Microorganisms*. 2023 Feb 9;11(2):442. doi: 10.3390/microorganisms11020442.
6. Pompilio A, Scocchi M, Mangoni ML, Shirooie S, Serio A, da Costa YFG, Alves MS, Karatoprak GS, Süntar I, Khan H, Di Bonaventura G. Bioactive compounds: A Goldmine for Defining New Strategies Against Pathogenic Bacterial Biofilms? *Critical Reviews in Microbiology*. 2022, in press. doi:10.1080/1040841X.2022.2038082
7. Di Bonaventura G, Lupetti V, Verginelli F, Giancristofaro S, Barbieri R, Gherardi G, Pompilio A. Repurposing the Veterinary Antibiotic Apramycin for Antibacterial and Antibiofilm Activity Against *Pseudomonas aeruginosa* From Cystic Fibrosis Patients. *Frontiers in Microbiology*. 2022 12, in press. doi:10.3389/fmicb.2021.801152.
8. Pompilio A, Scribano D, Sarshar M, Di Bonaventura G, Palamara AT, Ambrosi C. Gram-Negative Bacteria Holding Together in a Biofilm: The *Acinetobacter baumannii* Way. *Microorganisms*. 2021 Jun 22;9(7):1353.

- 9: Di Bonaventura G, Pompilio A. In Vitro Antimicrobial Susceptibility Testing of Biofilm-Growing Bacteria: Current and Emerging Methods. *Adv Exp Med Biol*. 2021 May 8.
- 10: Fiscarelli EV, Rossitto M, Rosati P, Essa N, Crocetta V, Di Giulio A, Lupetti V, Di Bonaventura G, Pompilio A. In Vitro Newly Isolated Environmental Phage Activity against Biofilms Preformed by *Pseudomonas aeruginosa* from Patients with Cystic Fibrosis. *Microorganisms*. 2021 Feb 25;9(3):478.
- 11: Pompilio A, Ranalli M, Piccirilli A, Perilli M, Vukovic D, Savic B, Krutova M, Drevinek P, Jonas D, Fiscarelli EV, Tuccio Guarna Assanti V, Tavio MM, Artiles F, Di Bonaventura G. Biofilm Formation among *Stenotrophomonas maltophilia* Isolates Has Clinical Relevance: The ANSELM Prospective Multicenter Study. *Microorganisms*. 2020 Dec 27;9(1):49.
- 12: Pompilio A, Di Bonaventura G. Ambient air pollution and respiratory bacterial infections, a troubling association: epidemiology, underlying mechanisms, and future challenges. *Crit Rev Microbiol*. 2020 Sep;46(5):600-630.
- 13: Grassi L, Pompilio A, Kaya E, Rinaldi AC, Sanjust E, Maisetta G, Crabbé A, Di Bonaventura G, Batoni G, Esin S. The Anti-Microbial Peptide (Lin-SB056-1)2-K Reduces Pro-Inflammatory Cytokine Release through Interaction with *Pseudomonas aeruginosa* Lipopolysaccharide. *Antibiotics (Basel)*. 2020 Sep 8;9(9):585.
- 14: Pompilio A, Savini V, Fiscarelli E, Gherardi G, Di Bonaventura G. Clonal Diversity, Biofilm Formation, and Antimicrobial Resistance among *Stenotrophomonas maltophilia* Strains from Cystic Fibrosis and Non-Cystic Fibrosis Patients. *Antibiotics (Basel)*. 2020 Jan 2;9(1):15.
- 15: Ambrosi C, Sarshar M, Aprea MR, Pompilio A, Di Bonaventura G, Strati F, Pronio A, Nicoletti M, Zagaglia C, Palamara AT, Scribano D. Colonic adenoma-associated *Escherichia coli* express specific phenotypes. *Microbes Infect*. 2019 Aug-Sep;21(7):305-312.
- 16: Pompilio A, Geminiani C, Mantini P, Siriwardena TN, Di Bonaventura I, Reymond JL, Di Bonaventura G. Peptide dendrimers as "lead compounds" for the treatment of chronic lung infections by *Pseudomonas aeruginosa* in cystic fibrosis patients: in vitro and in vivo studies. *Infect Drug Resist*. 2018 Oct 11;11:1767-1782.
- 17: Pompilio A, Crocetta V, Di Bonaventura G. *Stenotrophomonas maltophilia* mutant lacking flagella remains virulent in DBA/2N mice but is less efficient in stimulating TNF- α expression. *FEMS Microbiol Lett*. 2018 Oct 1;365(19).
- 18: Pompilio A, Geminiani C, Bosco D, Rana R, Aceto A, Bucciarelli T, Scotti L, Di Bonaventura G. Electrochemically Synthesized Silver Nanoparticles Are Active Against Planktonic and Biofilm Cells of *Pseudomonas aeruginosa* and Other Cystic Fibrosis-Associated Bacterial Pathogens. *Front Microbiol*. 2018 Jul 5;9:1349.
- 19: Di Bonaventura I, Baeriswyl S, Capecchi A, Gan BH, Jin X, Siriwardena TN, He R, Köhler T, Pompilio A, Di Bonaventura G, van Delden C, Javor S, Reymond JL. An antimicrobial bicyclic peptide from chemical space against multidrug resistant Gram-negative bacteria. *Chem Commun (Camb)*. 2018 May 15;54(40):5130-5133.
- 20: Brooke JS, Di Bonaventura G, Berg G, Martinez JL. Editorial: A Multidisciplinary Look at *Stenotrophomonas maltophilia*: An Emerging Multi-Drug-Resistant Global Opportunistic Pathogen. *Front Microbiol*. 2017 Aug 31;8:1511.
- 21: Esposito A, Pompilio A, Bettua C, Crocetta V, Giacobazzi E, Fiscarelli E, Jousson O, Di Bonaventura G. Evolution of *Stenotrophomonas maltophilia* in Cystic Fibrosis Lung over Chronic Infection: A Genomic and Phenotypic Population Study. *Front Microbiol*. 2017 Aug 28;8:1590.
- 22: Mardirossian M, Pompilio A, Degaspero M, Runti G, Pacor S, Di Bonaventura G, Scocchi M. D-BMAP18 Antimicrobial Peptide Is Active In vitro, Resists to Pulmonary Proteases but Loses Its Activity in a Murine Model of *Pseudomonas aeruginosa* Lung Infection. *Front Chem*. 2017 Jun 19;5:40.
- 23: Azeredo J, Azevedo NF, Briandet R, Cerca N, Coenye T, Costa AR, Desvaux M, Di Bonaventura G, Hébraud M, Jaglic Z, Kačaniová M, Knöchel S, Lourenço A, Mergulhão F, Meyer RL, Nychas G, Simões M, Tresse O, Sternberg C. Critical review on biofilm methods. *Crit Rev Microbiol*. 2017 May;43(3):313-351.

Scopus profile at:

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