RESEARCH

Experienced Microbiologist with over ten years of experience in Clinical Microbiology and Molecular Biology. Excellent skills for resolving problems and perform clinical diagnostic and research. At the moment I'm associate Professor in Clinical Microbiology at the University of Verona

PUBLICATIONS

156 impacted research articles (SCOPUS ID: 0000-0003-3791-8635)
H-index (Scopus): 41
Citations: 4581

Selected publications:

- **Gaibani P**, Campoli C, Lewis RE, Volpe SL, Scaltriti E, Giannella M, Pongolini S, Berlingeri A, Cristini F, Bartoletti M, Tedeschi S, Ambretti S. In vivo evolution of resistant subpopulations of KPC-producing Klebsiella pneumoniae during ceftazidime/avibactam treatment. J Antimicrob Chemother. 2018 Jun 1;73(6):1525-1529. doi: 10.1093/jac/dky082. PMID: 29566151.
- **Gaibani P,** Lombardo D, Lewis RE, Mercuri M, Bonora S, Landini MP, Ambretti S. In vitro activity and post-antibiotic effects of colistin in combination with other antimicrobials against colistin-resistant KPC-producing Klebsiella pneumoniae bloodstream isolates. J Antimicrob Chemother. 2014 Jul;69(7):1856-65. doi: 10.1093/jac/dku065. Epub 2014 Mar 19. PMID: 24648503.
- **Gaibani P,** Ambretti S, Berlingeri A, Cordovana M, Farruggia P, Panico M, Landini MP, Sambri V. Outbreak of NDM-1-producing Enterobacteriaceae in northern Italy, July to August 2011. Euro Surveill. 2011 Nov 24;16(47):20027. PMID: 22152705.
- **Gaibani P,** Re MC, Campoli C, Viale PL, Ambretti S. Bloodstream infection caused by KPC-producing Klebsiella pneumoniae resistant to ceftazidime/avibactam: epidemiology and genomic characterization. Clin Microbiol Infect. 2020 Apr;26(4):516.e1-516.e4. doi: 10.1016/j.cmi.2019.11.011. Epub 2019 Nov 16. PMID: 31740422.
- **Gaibani P,** Lewis RE, Volpe SL, Giannella M, Campoli C, Landini MP, Viale P, Re MC, Ambretti S. In vitro interaction of ceftazidime-avibactam in combination with different antimicrobials against KPC-

producing Klebsiella pneumoniae clinical isolates. Int J Infect Dis. 2017 Dec;65:1-3. Doi: 10.1016/j.ijid.2017.09.017. Epub 2017 Sep 22. PMID: 28951106.

- **Gaibani P,** Cavrini F, Gould EA, Rossini G, Pierro A, Landini MP, Sambri V. Comparative genomic and phylogenetic analysis of the first Usutu virus isolate from a human patient presenting with neurological symptoms. PLoS One. 2013 May 31;8(5):e64761. Doi: 10.1371/journal.pone.0064761. PMID: 23741387; PMCID: PMC3669420.
- **Gaibani P,** Viciani E, Bartoletti M, Lewis RE, Tonetti T, Lombardo D, Castagnetti A, Bovo F, Horna CS, Ranieri M, Viale P, Re MC, Ambretti S. The lower respiratory tract microbiome of critically ill patients with COVID-19. Sci Rep. 2021 May 12;11(1):10103. doi: 10.1038/s41598-021-89516-6. PMID: 33980943; PMCID: PMC8115177.
- **Gaibani P,** Caroli F, Nucci C, Sambri V. Major surface protein complex of Treponema denticola induces the production of tumor necrosis factor alpha, interleukin-1 beta, interleukin-6 and matrix metalloproteinase 9 by primary human peripheral blood monocytes. J Periodontal Res. 2010 Jun;45(3):361-6. Doi: 10.1111/j.1600-0765.2009.01246.x. Epub 2010 Mar 9. PMID: 20337896.
- **Gaibani P,** D'Amico F, Bartoletti M, Lombardo D, Rampelli S, Fornaro G, Coladonato S, Siniscalchi A, Re MC, Viale P, Brigidi P, Turroni S, Giannella M. The Gut Microbiota of Critically Ill Patients With COVID-19. Front Cell Infect Microbiol. 2021 Jun 29;11:670424. doi: 10.3389/fcimb.2021.670424. PMID: 34268136; PMCID: PMC8276076.
- Lombardo D, Ambretti S, Lazzarotto T, **Gaibani P.** In vitro activity of imipenem-relebactam against KPC-producing Klebsiella pneumoniae resistant to ceftazidime-avibactam and/or meropenem-vaborbactam. Clin Microbiol Infect. 2022 May;28(5):749-751. doi: 10.1016/j.cmi.2022.01.025. Epub 2022 Feb 3. PMID: 35124257.

OTHER ACTIVITIES

Journal Editor

- Associated Editor for the New Microbiologica Journal,
- Associated Editor for Frontier in Cellular and Infection Microbiology,
- Guest Editor for Antibiotics and Microrganisms,
- Review Editor for Frontiers in Clinical Microbiology

Reviewer for the following scientific journals:

Antimicrobial Agents and Chemotherapy, Journal Antimicrobial Chemotherapy, Clinical Microbiology and Infection, BMC microbiology, International Journal of Infection Diseases Journal of Infection, PLOS One, Microbial Drug Resistance, Journal Medical Microbiology, Diagnostic Microbiology and Infectious Disease, Frontiers in Microbiology, Frontiers in Pharmacology, Future Microbiology, Journal of Global Antimicrobial Resistance, Journal of Infection, Diagnostic Microbiology and Infectious Diseases, New Microbiologica, Journal of Dental Research

PROJECTS FINANCED

- **PRINCIPAL INVESTIGATOR OF THE PROJECT** "Novel Diagnostic Approaches for Improving Antibiotic Treatment of Multidrug Resistant Bacteria infections in critically ill patients: integrating old and new diagnostic methodologies, molecular tools and clinical data for establishment of the optimal antimicrobial therapy." RICERCA FINALIZZATA 2018, Ministry of Health. GRANT NUMBER GR-2018-12367572. Total amount financed: € 370.000
- **Co-PRINCIPAL INVESTIGATOR OF THE PROJECT** "Efficacy of optimized antimicrobial combination therapy for treatment of Enterococcus faecalis bacteremia and identification of intestinal microbiota signature" RICERCA FINALIZZATA 2019, Ministry of Health. GRANT NUMBER GR-2019-12371428. Total amount financed: € 450.000
- **Operative Unit coordinator of the PROJECT** "Caratterizzazione di enterobatteri produttori di β-lattamasi a spettro esteso (ESBL), β lattamasi AmpC e carbapenemasi isolati da animali da compagnia e uomo nella prospettiva One-Health". Total amount financed: 92.869
- CCM-2012 – Ministry of Health **Partecipation to the PROJECT**: "*Prevenzione della diffusione di infezioni sostenute da microrganismo mutlitresistenti (MDR) in ambito trapiantologico e analisi del rischio (SInt)*

EDUCATION

Degree in Biological Sciences, University of Bologna, Italy. (2001-2006)
Faculty of Biology, University of Bologna, Bologna, Italy.
Thesis: Interaction between *Treponema denticola* and murine macrophage cells

PhD in Experimental Pathology, University of Bologna, Italy. (2007-2010)
University of Bologna, Bologna, Italy
Thesis "*Role of Treponema denticola in the pathogenesis and progression of periodontal disease"*

Specialization in Clinical Microbiology and Virology, University of Torino, (2007-2010)
University of Torino, Torino, Italy
Thesis *"novel diagnostic approaches for optimization of the antimicrobial therapy for the treatment of infections due to multidrug resistant pathogens"*

CURRICULUM VITAE

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Scopus Author ID: 0000-0003-3791-8635 **ORCID:** 0000-0003-3791-8635

BIOGRAPHY

Dr. Paolo Gaibani graduated from University of Bologna in 2006 and obtained his PhD in 2010. He spent his work on clinical microbiology by obtaining the specialization on clinical Microbiology and Virology from University of Turin. Microbiologist with more of ten years' experience in clinical microbiology, laboratory management and students tutoring. His research focuses on the molecular and phenotypic characterization of emerging and re-emerging pathogens and development and validation of new diagnostic assays in different area of Microbiology with special focus on public health emergence related to the emerging infections due to the globalization, social climate change and novel treats of antimicrobial resistance.

PROFESSIONAL EXPERIENCE

Biologist Trainee (Jul.2004 – Oct.2006)

Department of Experimental Clinical Medicine, section of Microbiology University of Bologna, Bologna, Italy.

- Conducted experiments with BALB/c mice
- Performed in vitro experiments with murine and bacteria cells
- ELISA tests

Postgraduate student (Nov.2006 – Dic.2007)

Department of Experimental Clinical Medicine, section of Microbiology, University of Bologna,Bologna, Italy.

- Prepared materials necessary for performing and executing tests.
- Performed molecular tests and in vitro experiments with murine and bacteria cells

- Maintained clean and organized laboratory environment.
- Qualified, prepared and tested microbiological media for sterility and growth promotion.
- Evaluated Antimcirobial suceptibility tests
- Collaborated with team members to achieve target results.
- Identified issues, analyzed information and provided solutions to problems.

Clinical Microbiologist (Dec.2007 – Dec.2023)

Regional Reference Centre for Microbiological Emergencies (CRREM), S.Orsola-Malpighi University Hospital of Bologna, Bologna, Italy

- Performed molecular analysis and statistical analysis
- Performed next generations sequencing and bioinformatic analysis
- Perfomed microbiological tests for clinical diagnosis of infections
- Conducted research, gathered information from multiple sources and presented results.
- Prepared variety of different written communications, reports and documents.
- Used critical thinking to break down problems, evaluate solutions and make decisions.

Visiting Researcher (Feb.2024 – March.2024)

New York University, Department of Pathobiology

- Performedgenomic analysis
- Performed next generations sequencing and bioinformatic analysis
- Perfomed prophage studies
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Associate Professor (Dec.2024 – present)

Department of Diagnostic and Public Health, Microbiology Section, Verona University, 37134 Verona, Italy.

SKILLS AND INTERESTS

- Identified the bacterial isolates using Matrix-Assisted Laser Desorption/Ionization Time-Of-Flight Mass and performed analysis of spectra
- Conducetd analysis of isolated protein
- Conducted Western Blot analysis
- Conducted in vivo experiments on mice
- Conducted Antimicrobial Susceptibility Test., and interpreted the results according to EUCAST standards.
- Sequence analysis via Blast, Multiple Sequence Alignment via ClustalW and NCBI.
- Conducted Polymerase Chain Reaction (PCR) for the detection of target genes.
- Conducted genomic extraction by different samples.
- Applied uniplex and multiplex PCR and use of conventional and gradient thermocyclers.
- Conducted gel electrophoresis.
- Conducted Real Time PCR and RT - PCR
- Conducted conventional microbiological testing and sinergy application
- Conducted next generation sequencing
- Conducted basic bioinformatic analysis
- Conducetd statistical analysis