

Viviana Cafiso

Viviana Cafiso, Research Fellow in Microbiology of the Department of Biomedical and Biotechnological Sciences – University of Catania (CT) -Italy- via Androne, 81 Catania -95124- **Work Phone:** +39 0952504718 **Work Email:** v.cafiso@unct.it



OVERVIEW

She works as Researcher Fellow on Microbiology and Genetics of Microorganisms at the Department of Biomedical and Biotechnological Sciences -sect. Microbiology- at the University of Catania. She is, mainly, involved on Gram-positive (*Staphylococcus aureus* and *Staphylococcus* spp.), Gram negative (*Pseudomonas aeruginosa* and *A.baumannii*) and Mycobacterium tuberculosis Complex (MTC) human pathogens studying genetics of antibiotic-resistance, molecular mechanisms of biofilm formation and assays of molecules with anti-biofilm activity, virulence, and new real time qPCR and High Resolution Melting Analysis (HRMA) platform for molecular diagnostics using bioinformatics and different “Omic” approaches, i.e. Genome and Transcriptome studies by Next Generation Sequencing and RNA-seq Analysis, Proteomics by Mass Spectrometry, SYBER GREEN or Taqman probe real-time qPCR for DNA and RNA relative/absolute quantification studies, and High Resolution Melting Analysis (HRMA) for antibiotic-resistance related point mutation investigations and bacterial species identification.

EDUCATION

- 1997 **Degree in Biological Sciences** (110/110 cum laude). *Degree Thesis:* "Lysotheicoic acid regulates the autolytic system of enterococci".
- 1999 **Biologist profession qualification** (150/150).
- 2001 **Specialisation in Microbiology** and Virology (70/70 cum laude) *Dissertation:* "Fluorquinolones-resistance in Staphylococci and its correlation with methicillin-resistance".
- 2005 **PhD in “Microbiological Science”** at the University of Catania *Dissertation:* "Basi molecolari della produzione di biofilm in *Staphylococcus* spp."
- 2005-2007 Researcher in Microbiology Biological Sciences, Faculty of Sciences Mat., Fis., Nat. of University of Catania.

- 2007-2010 – **Contract Researcher** on the Program “Fondo per gli investimenti della ricerca di base (FIRB 2006)”. Research Title: “Valorizzazione dei prodotti tipici dell’agroalimentare e sicurezza alimentare attraverso nuovi sistemi di caratterizzazione e garanzia di qualità” Scientific Coordinator: Prof. P.S. Cocconcelli.
- 2011 - **Contract Researcher** with PFIZER ITALIA S.R.L. Research Title:” Tigecycline alone and in combination with other drugs against Gram-negative with well defined mechanism of resistance”.
- 2012-2014 **Research Fellow of B-type** in Microbiology, scientific sector BIO/19, on National Operative Project (PON 2007-2013) entitled “Lab-on-Chip development for the molecular diagnosis of infectious diseases”- MICROMAP.
- 2014-2015 Research Fellow of A-type in Microbiology, scientific sector MED/07, on *Staphylococcus aureus* small RNA and mRNA regulators as a target of antibacterial and anti-virulence new molecules.

ACADEMIC APPOINTMENTS

- 2010-2015 - **Adjunct Professor** for the discipline “General Microbiology” (BIO/19) in Biological Sciences degree course.
- 2010-2011 **Adjunct Professor** for “Microbial Biotechnology” (AGR/16) in of Agricultural Biotechnology degree course - Faculty of Agriculture.
- She is **Tutor** for the course of “Applied Molecular Microbiology” (BIO/19) of the Prof. Stefania Stefani.

PUBLICATIONS

Recent and/or Significant Studies:

- i) Phenotypic and genotypic characterization of daptomycin-resistant methicillin-resistant *Staphylococcus aureus* strains: relative roles of *mprF* and *dlt* operons. PLoS One. 2014 Sep 16;9(9):e107426. doi: 10.1371/journal.pone.0107426. eCollection 2014.
- ii) “*dltA* over-expression: a strain-independent keystone of Daptomycin Resistance in Methicillin Resistant *Staphylococcus aureus*”, Int J Antimicrob Agents (2013);
- iii) “A novel δ -hemolysis screening method for detecting heteroresistant vancomycin-intermediate *Staphylococcus aureus* and vancomycin-intermediate *S.aureus*.” J Clin Microbiol. 2012 May;50(5):1742-4;
- iv) “Modulating activity of Vancomycin and Daptomycin on the expression of autolysis cell-wall turnover and membrane charge genes in hVISA and VISA strains” PLoS One 2012;7(1):e29573.