Viviana Teresa Orlandi

UNIVERSITY OF INSUBRIA

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Contact data

Assistant Professor
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Biography

Education
1995: Degree in Biological Sciences, University of Milan discussing a thesis on "Expression of oppioid receptor in primary coltures of murine cortex neurons: trasduction signal pathway and interaction with glutamate receptors".
2002: Degree in Specialistic School of Microbiology and Virology, Medicine Faculty University of Insubria discussing a thesis on " In vitro action of HIV regolative protein TAT in mammary gland and amniotic cells".
Professional experience
1994-1995: Student at the laboratory of Neuropharmacology Centre, University of Milan (supervisor: G. Racagni)
1996-1997: training at Laboratory of Microbiology, University of Pavia, in Varese Hospital (supervisor: A. Toniolo).
1997-2002: Postgraduate at Specialistic School of Microbiology and Virology at Laboratory of Microbiology, University of Insubria, in Varese Hospital (supervisor: A. Toniolo).
2002-2004 and 2005-2006: Grants received at DBSF University of Insubria, in the Laboratory of Molecular Microbiology (supervisor P. Barbieri).
2006: Reasercher in Microbiology (BIO19 sector) at University of Insubria

Qualifications and awards

Member of the Italian Society for General Microbiology and Microbial Biotechnology (SIMGBM)

Research interests

In my professional life I was involved in microbiological topics both in clinical and environmental fields: antibacterial approaches (disinfectant and photodynamic antibacterial therapy); molecular characterization and phenetic identification of clinical and environmental bacterial strains; bacterial monooxygenases and HIV pathogenetic mechanisms.

In the antibacterial application field I analized the bactericidal effect of disinfectant against bacterial strains obtained from patients with persistent superficial infections; now I'm studying the antibacterial activity of porphyrin derivates. PDT (Photodynamic Terapy) is a approach which combines a photosensitizing agent with a specific type of light to kill cancer cells. When photosensitizers are exposed to a specific wavelength of light, they produce a form of oxygen that kills nearby cells. In collaboration with professor S. Banfi and professor P. Barbieri, I applied PDT to bacterial cells in order to kill pathogenic and not pathogenic microorganisms. At first we applied PACT (Photodynamic Antimicrobial Chemotherapy) against bacteria grown in planktonic form and now our attention is focused on bacteria grown in biofilm form, which is often resistant to chemioterapic treatment.

I'm also involved in studies aimed to obtain, through natural recombination or genetic engineering, strains more efficient in environmental decontamination. In particular

several approaches (construction of chimeras, in vitro molecular evolution and site-directed mutagenesis) are applied to modify a multienzimatic monooxygenase complex from Pseudomonas stutzeri to get new and better than original enzymes. Furthermore bacterial cells expressing the wild type Toluene-o-xylene monooxygenase (ToMO) can be used for biotransformation pourpose instead of chemical synthesis.

Teaching experience and appointments

Course: Life Science 2 for the course of Biology of Health
Course: General Microbiology and Laboratory of Microbiology for the course of Biology of Health

Representative publications

1. Biancone L, Martino AD, Orlandi V, Conaldi PG, Toniolo A, Camussi G. Development of inflammatory angiogenesis by local stimulation of Fas in vivo. J Exp Med. 1997 Jul 7;186: 147-52.
2. Conaldi P.G., Biancone L., Bottelli A., Wade-Evans A, Racusen LC, Boccellino M, Orlandi V., Serra c., Camussi G., Toniolo A.
   HIV-l kills human renal tubular epithelial cells by triggering an apoptosis patway involving caspase activation and FAS upregulation. J Clin Inv. Dec 1998; 102: 2041-9.
3. Rossi A., Orlandi V., Toniolo A.
   Legionelle: fattori di virulenza, diagnosi di laboratorio e ricerche ambientali. Microbiologia Medica. 2000; 15 (3): 261-268.
4. Luzzaro F., Mantengoli E., Perilli M., Lombardi G., Orlandi V., Orsatti A., Amicosante G., Rossolini GM, Toniolo A.
   Dynamics of a nosocomial outbreak ofmultidrug-resistant Pseudomonas aeruginosa producing PER-l extended-spectrum beta-lattamase. Journal of clinical microbiology. 2001; 39: 1865-1870.
5. Radice F, Orlandi V, Massa V, Cavalca L, Demarta A, Wood TK, Barbieri P. Genotypic characterization and phylogenetic relations of Pseudomonas sp. (Formerly P. stutzeri) OX1. Curr Microbiol. 2006 May;52(5):395-9.
6. Banfi S, Caruso E, Buccafurni L, Battini V, Zazzaron S, Barbieri P, Orlandi V. Antibacterial activity of tetraaryl-porphyrin photosensitizers: an in vitro study on Gram negative and Gram positive bacteria. J Photochem Photobiol B. 2006 Oct 2;85(1):28-38.
7. Radice F, Orlandi V, Massa V, Battini V, Bertoni G, Reineke W, Barbieri P. Cloning of the Arthrobacter sp. FG1 dehalogenase genes and construction of hybrid pathways in Pseudomonas putida strains. Appl Microbiol Biotechnol. 2007 Jul;75(5):1111-8.