Curriculum vitae Prof.ssa Letizia Angiolella

Place and date of Birth: Rome (Italy), August 12, 1957

Citizenship: Italian

Education

Graduated in Biological Science, University of Rome "Sapienza"
Postgraduate PH.D. in Experimental Medicine. Department of Pathology University of Rome "Sapienza".

Faculty appointment

Since 2006 Associate Professor of Microbiology, Faculty of Pharmacy and Medicine, Department of Health Public and Infectious Diseases, "Sapienza" University of Rome

Teachings
Microbiology for degree in Pharmacy.
Medical Microbiology for degree in Applied Pharmaceutical Sciences
Microbiology for degree in Medicine.
Post graduated School in Microbiology and Virology

Membership in Scientific Societies

Italian Society of Microbiology (SIM)
Italian Federation of Human and Animal Micopatology (FIMUA)
Italian Society of Research on Essential Oils (SIROE)
Founder and member of New Italian society of pharmaceutical Microbiology ETS

Areas of research

Role of the major cell wall proteins in Candida albicans
Several proteins are bound to the glucan, those which are released from the purified cell wall following digestion with endoglucanase are referred to as glucan associated proteins (GAP). The major GAPs in *Candida albicans* are represented by enolase, aldolase, phosphoglyceromutase, BGL2 and LDG7, some are strongly affected by the treatment with antimycotic independently from mechanism of action. Our data demonstrate that doses of drug do critically affect not only the protein composition but also whole cell wall structure of *Candida albicans*.

Study of the mechanisms of resistance in Candida albicans
It has been demonstrated that *C.albicans* possesses sequences with a high degree of homology with the human gene MDR-1 coding for P-glicoprotein (P-gp), belonging to the ATP-binding cassette transporter (ABC) superfamily and responsible for the multidrug resistance (MDR) in tumor cells. Data obtained in this field demonstrate existence of a P-gp-like drug efflux pump in *C.albicans* that may participate in the mechanisms of drug resistance of this fungus.

Study of the mechanisms of virulence in Candida albicans.
A basic event in Candida infection is adherence to host surfaces, which is required for initial colonization. Adherence contributes to persistence of the organism within the host, and it is thus considered essential for the spreading and the settling of the fungus. Working together, the transition to hyphal form and adherence cause damage to the host mucosa by the combined action of secreted aspartyl proteases and phospholipases thereby facilitating the invasion of the organism into the epithelium.

Study of main virulence factors of Malassezia spp.
Malassezia can act as opportunistic pathogens producing superficial and systemic infections in humans and other animals. It cause pytiriasis versicolor and can be related as an associated agent or a contributory factor in other dermatological entities such as seborrhoeic dermatitis, atopic dermatitis, seborrheic blepharitis, folliculitis, confluent and reticulated papillomatosis. Biofilms is a mixture offungal and/or bacterial species, which adheres to a bioticor abiotic surface, and is difficult to remove. This structure contributes to the innate physical and chemical resistance of the microorganisms and is responsible for cooperative degradation of complex nutrients and community-based regulation of gene expression. Indeed, biofilm formation plays an important role in resistance to antimicrobial agents, with sessile cells up to $\sim$ 2000 times more resistant than planktonic cells.

Study of antifungal activity of new natural or synthesized molecules.
Numerous molecules both natural and synthesized are been use as anticandida agents, a series of 1-[(aril)(4-aril-1H-pirrol-3-il)metil]-1H-imidazoli or essential oils are results powerful anticandida agents and they are showing “in vitro” a superior activity to that of some drugs used in practical clinical.

Study of intracellular redox state in presence of antimycotic in Candida albicans.
Glutathione is the most abundant low-molecular-mass intracellular thiol compound, it has various functions in the defence against oxidative stress and xenobiotic toxicity. Data obtained in this field demonstrate that low levels of GSH were found in sensitive strains of C.albicans in presence of antimycotic drugs, while in resistant strains high level were tested, which probably correspond an increase of enzymatic activity of GSH sintetase.

Study of virulence mechanisms of PSA.
Pseudomonas syringaepv. actinidiae is a pathogen of kiwifruit (Actinidiadeliciosa, A. chinensis and A. arguta).It was found tocause bacterial canker disease of kiwifruit in Korea and Italy. Bacterial canker disease causes serious damage to kiwifruitplants. Therefore, it is important to control this diseasein its early stages.

Articles

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Patent:
1) Angiolella L., Ragno R. MENTHA SUAVEOLENS ESSENTIAL OIL AND THERAPEUTIC ACTIVITIES THEREOF. WIPO Patent Application WO/2011/092655.

Book:
1) Co-author chapter 42**: Principali miceti di importanza clinica,** del testo di Microbiologia Farmaceutica, di Carlone, Pompei, EDISES edizione II/ 2012.
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