



Università
Ca' Foscari
Venezia

Dipartimento
di Scienze Molecolari
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IL DIPARTIMENTO DI SCIENZE MOLECOLARI E NANOSISTEMI

ORGANIZZA UNA CONFERENZA DAL TITOLO:

Metal ion Exposure to Microbes

Professor Raymond J. Turner,

University of Calgary, Calgary, Alberta, Canada

Via Torino 155
30172 Mestre (Venezia)

T +39 0412348535/8698
F +39 0412348517/8594

dsnm@unive.it

www.unive.it/dsmn

Cod. Fisc. 80007720271
P.IVA/VAT 00816350276

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ore 14:00 Aula A, Palazzina Zeta

Abstract

The use of metal compounds as antimicrobial agents has been around since antiquity, only to be replaced by the introduction of organic antibiotics and antiseptics in the mid 20th century. The interest in my group is the biochemical mechanisms of resistance towards metal-based antimicrobial agents. There is now a strong understanding of resistance mechanisms of bacteria growing as free-swimming stage (planktonic). However, considerably less is understood about the mechanisms of resistance of bacteria towards metals grown in their surface attached sessile state (Biofilms). Furthermore, there is remarkably little understood on how metals are toxic to bacteria. My group has used toxicity profiling to understand fundamental chemical properties contributing to resistance and toxicity. This approach it has allowed us to begin to explore the question of speciation. Biochemical assays have allowed us to ask questions about reactive oxygen species production and gene regulation and through omics approaches of proteomics metabolomics, and chemical genomics we have begun to obtained information of the system view for at least the metals of Cu and Ag. I will also describe briefly our work considering the difference of single species bacteria and environmental microbiome communities (from metal contaminated site). Through such studies, the overarching goal of my research in this area is to obtain insights into the biochemical mechanisms of metal resistance/tolerance/toxicity, particularly in the context of bacterial biofilms.

L' organizzatrice
prof.ssa Silvia Lampis, Università di Verona