

International Conference on
ANTIMICROBIAL AND ANTIBACTERIAL AGENTS
&
International Conference on
CLINICAL MICROBIOLOGY, VIROLOGY AND INFECTIOUS DISEASES

November 19-20, 2018 Bucharest, Romania



Cristian Coman

Institute of Biological Research Cluj, Romania

Back to basics: The role of natural environments in the discovery of new antimicrobial compounds

Even though the discovery of antimicrobials has been regarded as one of the most significant medical achievements of the past century, there was a constant decrease in the pharmaceutical industry's interest for the development of new antibiotics. However, due to the growing phenomenon of antibiotic resistance, the development of new drugs for treating infections should be a global priority despite the challenges faced. The downfall of antimicrobial drug discovery in the genomic era has revived the interest in screening natural products. Among the extreme environments, Antarctica has proven to be a rich source of novel microorganisms with increased potential for various applications, including the discovery of antimicrobial compounds. After the Romanian ROICE expeditions to Antarctica, a new variant of *Janthinobacterium lividum* was isolated, characterized and the antimicrobial effect of the violacein-containing bacterial extract was investigated against 200 multi-drug resistant bacteria of clinical and environmental origin, displaying various antibiotic resistance patterns. A clear bactericidal effect was observed on 79 strains (40%), a bacteriostatic effect on 25 strains (12%) and no effect in the case of 96 strains (48%). A very good inhibitory effect was noticed against numerous MRSA, MSSA, Enterococci, and Enterobacteriaceae isolates. For several strains, the bactericidal effect was encountered at a violacein concentration below of what was previously reported. Thus, natural and/or extreme environments are a prolific source of microorganisms with biotechnological potential, leading to new strategies to reduce the burden of antibiotic resistance in a One Health approach, aimed at improving both human and environmental health.

Biography

Cristian Coman is a Senior Researcher at the Institute of Biological Research in Cluj-Napoca, Romania. His research interests are in the fields of microbiology and biotechnology with focus on extreme environments as a source of new antimicrobial compounds and on environmental and human health. Some of his major achievements are the coordination of two Romanian research expeditions to Antarctica and the development of a methodological guide for monitoring environmental pollution with antibiotics and antibiotic resistance. He has published more than 40 scientific papers and serves as a Reviewer for various journals.

cristian.coman@icbcluj.ro

Notes: