461. kolokvij Hrvatskog genetičkog društva i
kolokvij Znanstvenog centra izvrsnosti za bioprospekting
Jadranskog mora

Exploring actinomycetes biodiversity for the discovery of novel antibiotics: traditional and innovative approaches

– Dr. sc. Francesca Berini –
Group of Microbial Biotechnology
Department of Biotechnology and Life Sciences
University of Insubria

12. svibnja 2022. u 15:30, Dvorana III, Institut Ruđer Bošković

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Sažetak

After the 'Golden era' or antibiotic discovery that peaked around 1950-1960s, the number of antibiotics marketed each decade has dramatically declined. Conversely, the rapid spread of antibiotic resistance among pathogenic bacteria makes the development of novel drugs compulsory. In the presentation, the focus will be on the exploitation of classical biological activity-guided screening (so-called Waksman platform) together with more innovative genomic tools for discovering and developing old and novel glycopeptide antibiotics (GPAs), facing the spread of multi-drug resistant Gram-positives. Additionally, some examples of how pathway-specific regulators can be used for improving GPA productivity will be provided.

Životopis

Graduated in Industrial Biotechnology and Biocatalysis and with a PhD in Analysis, Protection and Management of the Biodiversity Resources, starting from 2015 Francesca Berini has been working in the group of Microbial Biotechnology at University of Insubria in Varese, Italy, first as post-doc and then, from March 2020, as assistant professor. Her main research interests include the discovery and characterization of specialized metabolites with antibiotic activity from filamentous actinomycetes and fungi, with a special focus on the optimization of fermentation conditions and on the rational genetic manipulation of producer strains. Moreover, she is also involved in research projects aimed at identifying and characterizing microbial enzymes of biotechnological interest, to be used as biopesticides or for the degradation and valorization of recalcitrant biomasses.