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VABILO

Vljudno vabljeni na predavanje

Environmental change, niche specialisation and microbial communities: what can we learn from ammonia oxidisers?

Predaval bo: Prof. J.I. Prosser

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Vabi: Katedra za mikrobiologijo (Prof. Ines Mandić Mulec), Biotehniška fakulteta in Slovensko
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Abstract:

Molecular techniques revolutionised both our ability to characterise natural communities of ammonia oxidisers and our views of their diversity and community structure. The first 16S rRNA gene-based studies demonstrated considerable diversity within soil ammonia oxidiser communities, phylogenetic groups with no cultivated representatives and environmental differences in community composition. Techniques that linked phylogeny and activity were then developed and the field was further revolutionised by the discovery of archaeal ammonia oxidisers. Ammonia oxidisers therefore provided excellent model organisms to address ecological questions, including the links between diversity, community composition and ecosystem function, the consequences of environmental change for microbial communities and the existence of niche specialisation and differentiation. These questions have been addressed using a combination of ecophysiological studies of cultivated organisms, genomics, correlation-based field studies and experimental microcosms. They have answered some long-standing questions in ammonia oxidiser ecology and have raised new ones, but have also highlighted many issues that plague studies of soil microbial diversity in general and ammonia oxidisers in particular. This presentation will therefore consider the influence of environmental change on ammonia oxidisers and niche specialisation in the context of broader studies of soil microbiology and the ways in which it is studied.