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Press release
For immediate publication

New bacterium found in the Danube: Med Uni Graz researchers discover *Pseudomonas danubii*

Graz, 11 October 2023: The Danube now has its own bacterium—Austria's longest river has been honored with its own species of bacteria. *Pseudomonas danubii* is the name of the single-celled organism recently discovered during an analysis in which Med Uni Graz researchers participated. Clemens Kittinger and Gernot Zarfel, both of the Med Uni Graz Diagnostic and Research Institute of Hygiene, Microbiology and Environmental Medicine, were involved in this new discovery.

Worth the wait

Around ten years ago, over 600 species of *pseudomonas* bacteria were isolated from water samples collected during testing by the International Commission for the Protection of the Danube River (ICPDR). The goal of this testing was to recognize and catalogue antibiotic resistance in the bacteria that colonize the Danube. Genetic testing of the microscopic organisms revealed *pseudomonas* bacteria that could not be attributed to any other known species.

Together with research groups in Spain, Clemens Kittinger and Gernot Zarfel's working group were able to characterize and name one of these bacteria. "On the whole, it was surprising that our field study found so many *pseudomonas* bacteria that could not be attributed to any other species, above all because we had chosen conditions for isolation that were favorable for species particularly relevant to human medicine and thus better investigated," commented Gernot Zarfel on the surprising discovery.

Out of the Danube into the world

In acknowledgement of the first place it was found, the new *pseudomonas* bacterium was given the name *Pseudomonas danubii*. In the meantime, the single-celled organism has also been found outside the Danube basin. From a bacteriological perspective, *Pseudomonas danubii* is highly resistant to antibiotics and capable of growing at a temperature of 37° Celsius—an unusually high value for an environmental bacterium. The bacterium was found during testing in several freshwater bodies, soils and the rhizosphere, i.e., habitats in direct proximity to living root systems.

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Profile of Clemens Kittinger:
Clemens Kittinger is the head of a working group that focuses on the interaction between microorganisms and substances/surfaces at the Diagnostic and Research Center for Molecular BioMedicine. The FFG is currently funding several cooperations in this area. He is also concerned with epidemiological issues and testing of resistance mechanisms in *Bacillus cereus*.

Profile of Gernot Zarfel:
Gernot Zarfel is the head of the working group on antibiotic resistance at the Diagnostic and Research Center for Molecular BioMedicine. His current research focuses on the spread of antibiotic resistance in bacteria in the environment and its potential impact on human health. He also deals with the mechanistic basis for important resistance mechanisms.

To the publication:
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