Characterisation of new nitrite-oxidising bacteria

Zusammenfassung

The goal of the project is to find out more about the diversity, physiology and genomic information of nitrite-oxidising bacteria which have been impossible to cultivate so far. These insights might constitute a prerequisite for the development of new strategies for wastewater treatment and fertilisation.

The recently discovered nitrite-oxidising bacteria which are related to the genus Nitrospira are key organisms for the function of nitrifying sewage plants and can lower the efficiency of fertilisation measures in the soil. However, up to now cultivation of these bacteria in the lab has been unsuccessful. Many nitrifying sewage plants suffer form drops in performance or lowered efficiency which, in urban und industrialised areas, can quickly lead to the pollution of natural waters. By means of molecular methods independent of cultivation, the diversity, frequency and physiology of the Nitrospira-like bacteria is to be determined in sewage plants and other habitats. In addition, insights into their genomes will be gained. Results should be evaluated together with sewage plant operators to achieve, in a next step, strategies for stabilising and optimising nitrification in sewage plants. The findings might also be relevant to optimising fertilisation methods in agriculture.

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Status: Abgeschlossen (01.03.2004 - 31.03.2008) 49 Monate

Fördersumme: EUR 460.000

Weiterführende Links zu den beteiligten Personen und zum Projekt finden Sie unter
https://archiv.wwtf.at/programmes/life_sciences/LS03-216