WWTF Project LS09-040

# Multiphasic comparative analysis of key nitrite-oxidizing bacteria in wastewater treatment plants


## Abstract

In biological wastewater treatment, excess nitrogen must be removed from sewage to protect natural waters from ecological damage. Nitrite-oxidizing bacteria of the genus Nitrospira, which also occur in most habitats in nature, play a key role for nitrogen removal in wastewater treatment plants. These important bacteria are barely studied, because they are difficult to grow under laboratory conditions. This project will use cutting-edge molecular biological methods to characterize different Nitrospira, which live in wastewater treatment plants, in an encompassing approach ranging from genomics to proteomics, metabolomics, and computer modelling. The results will potentially be relevant for improving models and processes of nitrogen removal in sewage treatment. The project will also tackle fundamental questions of microbial ecology relating to the niche adaptation and functioning of closely related environmental bacteria.



Keywords:

Nitrification, Nitrite oxidation, Nitrospira, Wastewater treatment, Environmental genomics,Systems biology



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| Principal Investigator: | Holger Daims |
| Institution: | University of Vienna |
| Further collaborators: | Wolfram Weckwerth (University of Vienna)<br>Eva Spieck (University Hamburg) |



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Further links about the involved persons and regarding the project you can find at

https://archiv.wwtf.at/programmes/life_sciences/LS09-040