

Publication List

Total number of citations according to ISI Web of Science (as of November 2016): 6,069

h-Index: 33

Publications in Peer-Reviewed Journals

(* indicates corresponding authorship)

1. **Daims H***, Lücker S, Wagner M (2016). A new perspective on microbes formerly known as nitrite-oxidizing bacteria. *Trends Microbiol.* 24: 699-712.
2. Hemp J*, Lücker S, Schott J, Pace L, Johnson J, Schink B, **Daims H**, Fischer W (2016). Genomics of a phototrophic nitrite oxidizer: Insights into the evolution of photosynthesis and nitrification. *ISME J.* 10: 2669-2678.
3. Hüpeden J, Wegen S, Off S, Lücker S, Bedarf Y, **Daims H**, Kühn C, Spieck E* (2016). Relative abundance of *Nitrotoga* in a biofilter of a cold freshwater aquaculture plant appears to be stimulated by slightly acidic pH. *Appl. Environ. Microbiol.* 82: 1838-1845.
4. **Daims H**, Lebedeva EV, Pjevac P, Han P, Herbold C, Albertsen M, Jehmlich N, Palatinszky M, Vierheilig J, Bulaev A, Kirkegaard RH, von Bergen M, Rattei T, Bendinger B, Nielsen PH, Wagner M* (2015). Complete nitrification by *Nitrospira* bacteria. *Nature* 528: 504-509.
5. Koch H, Lücker S, Albertsen M, Kitzinger K, Herbold C, Spieck E, Nielsen PH, Wagner M, **Daims H*** (2015). Expanded metabolic versatility of ubiquitous nitrite-oxidizing bacteria from the genus *Nitrospira*. *Proc. Natl. Acad. Sci. USA* 112: 11371-11376.
6. Palatinszky M, Herbold C, Jehmlich N, Pogoda M, Han P, von Bergen M, Lagkouvardos I, Karst SM, Galushko A, Koch H, Berry D, **Daims H**, Wagner M* (2015). Cyanate as an energy source for nitrifiers. *Nature* 524: 105-108.
7. Schaffner I, Hofbauer S, Krutzler M, Pirker KF, Bellei M, Stadlmayr G, Mlynek G, Djinovic-Carugo K, Battistuzzi G, Furtmüller PG, **Daims H**, Obinger C* (2015). Dimeric chlorite dismutase from the nitrogen-fixing cyanobacterium *Cyanothece* sp. PCC7425. *Mol. Microbiol.* 96: 1053-1068.
8. Nowka B, Off S, **Daims H**, Spieck E* (2015). Improved isolation strategies allowed the phenotypic differentiation of two *Nitrospira* strains from widespread phylogenetic lineages. *FEMS Microbiol. Ecol.* 91: fiu031.
9. Hofbauer S, Hagmüller A, Schaffner I, Mlynek G, Krutzler M, Stadlmayr G, Pirker KF, Obinger C, **Daims H**, Djinovic-Carugo K*, Furtmüller PG* (2015). Structure and heme-binding properties of HemQ (chlorite dismutase-like protein) from *Listeria monocytogenes*. *Arch. Biochem. Biophys.* 574: 36-48.
10. Gruber-Dorninger C, Pester M, Kitzinger K, Savio DF, Loy A, Rattei T, Wagner M, **Daims H*** (2015). Functionally relevant diversity of closely related *Nitrospira* in activated sludge. *ISME J.* 9: 643-655.
11. Lücker S*, Schwarz J, Gruber-Dorninger C, Spieck E, Wagner M, **Daims H** (2015). *Nitrotoga*-like bacteria are previously unrecognized key nitrite oxidizers in full-scale wastewater treatment plants. *ISME J.* 9: 708-720.
12. Nowka B, **Daims H**, Spieck E (2015). Comparative oxidation kinetics of nitrite-oxidizing bacteria: nitrite availability as key factor for niche differentiation. *Appl. Environ. Microbiol.* 81: 745-753.
13. Koch H, Galushko A, Albertsen M, Schintlmeister A, Gruber-Dorninger C, Lücker S, Pelletier E, Le Paslier D, Spieck E, Richter A, Nielsen PH, Wagner M, **Daims H*** (2014). Growth of nitrite-oxidizing bacteria by aerobic hydrogen oxidation. *Science* 345: 1052-1054.
14. Sorokin DY*, Vejmekova D, Lücker S, Streshinskaya GM, Rijpstra I, Sissingh Damsté J, Kleerebezem R, Van Loosdrecht M, Muyzer G, **Daims H** (2014). *Nitrolancea hollandica* gen. nov., sp. nov., a chemolithoautotrophic nitrite-oxidizing bacterium from a bioreactor belonging

- to the phylum Chloroflexi. *Int. J. Syst. Evol. Microbiol* 64: 1859-1865.
15. Remus-Emsermann MNP*, Lückner S, Müller DB, Potthoff E, **Daims H**, Vorholt JA (2014). Spatial distribution analyses of natural phyllosphere-colonizing bacteria on *Arabidopsis thaliana* revealed by fluorescence in situ hybridization. *Environ. Microbiol.* 16: 2329-2340.
 16. Pester M, Maixner F, Berry D, Rattei T, Koch H, Lückner S, Nowka B, Richter A, Spieck E, Lebedeva E, Loy A, Wagner M, **Daims H*** (2014). NxrB encoding the beta subunit of nitrite oxidoreductase as functional and phylogenetic marker for nitrite-oxidizing *Nitrospira*. *Environ. Microbiol.* 16: 3055-3071.
 17. Almstrand R, Persson F, **Daims H**, Ekenberg M, Christensson M, Wilén BM, Sörensson F, Hermansson M* (2014). Three-dimensional stratification of bacterial biofilm populations in a moving bed biofilm reactor for nitrification anammox. *Int. J. Mol.Sci.* 15: 2191-2206.
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 19. Lopez-Vazquez CM*, Kubare M, Saroj DP, Chikamba C, Schwarz J, **Daims H**, Brdjanovic D (2014). Thermophilic biological nitrogen removal in industrial wastewater treatment. *Appl. Microbiol. Biotechnol.* 98: 945-956.
 20. Almstrand R, **Daims H**, Persson F, Sörensson F, Hermansson M* (2013). New methods for analysis of spatial distribution and coaggregation of microbial populations in complex biofilms. *Appl. Environ. Microbiol.* 79(19):5978-5987.
 21. Lückner S, Nowka B, Rattei T, Spieck E, **Daims H*** (2013). The genome of *Nitrospina gracilis* illuminates the metabolism and evolution of the major marine nitrite oxidizer. *Front. Microbiol.* 4: 27.
 22. Lebedeva EV, Hatzenpichler R, Pelletier E, Schuster N, Hauzmayer S, Bulaev A, Grigoreva NV, Galushko A, Schmid M, Palatinszky M, Le Paslier D, **Daims H**, Wagner M* (2013). Enrichment and genome sequence of the group I.1a ammonia-oxidizing archaeon "Ca. Nitrosotenuis uzonensis" representing a clade globally distributed in thermal habitats. *PLoS One* 8: e80835.
 23. Mussmann M*, Ribot M, von Schiller D, Merbt S, Augpurger C, Karwautz C, Winkel M, Battin T, Marti E, **Daims H** (2013). Colonization of freshwater biofilms by nitrifying bacteria from activated sludge. *FEMS Microbiol. Ecol.* 85(1):104-115.
 24. Kostanjšek R*, Pasic L, **Daims H**, Sket B (2013). Structure and community composition of sprout-like bacterial aggregates in a Dinaric karst subterranean stream. *Microb. Ecol.* 66: 5-18.
 25. Dolinšek J, Lagkouvardos I, Wanek W, Wagner M, **Daims H*** (2013). Interactions of Nitrifying Bacteria and Heterotrophs: Identification of a *Micavibrio*-like, Putative Predator of *Nitrospira*. *Appl. Environ. Microbiol.* 79:2027-2037.
 26. Dolinšek J, Dorninger C, Lagkouvardos I, Wagner M, **Daims H*** (2013). Depletion of unwanted nucleic acid templates by selective cleavage: LNAzymes open a new window for detecting rare microbial community members. *Appl. Environ. Microbiol.* 79: 1534-44.
 27. Hofbauer S, Bellei M, Sündermann A, Pirker K, Hagmueller A, Mlynek G, Kostan J, **Daims H**, Furtmüller P, Djinić-Carugo K, Oostenbrink C, Battistuzzi G, Obinger C* (2012). Redox thermodynamics of high-spin and low-spin forms of chlorite dismutases of diverse subunit and oligomeric structure. *Biochemistry* 51: 9501-9512.
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 29. Hofbauer S, Gysel K, Mlynek G, Kostan J, Hagmueller A, **Daims H**, Furtmueller PG, Djinić-Carugo K, Obinger C* (2012). Impact of subunit and oligomeric structure on the thermal and conformational stability of chlorite dismutases. *Biochim. Biophys. Acta* 1824:1031-1038.

30. Sorokin DY, Lücker S, Vejmekova D, Kostrikina NA, Kleerebezem R, Rijpstra WIC, Sinninghe Damsté JS, Le Paslier D, Muyzer G, Wagner M, van Loosdrecht MCM, **Daims H*** (2012). Nitrification expanded: Discovery, physiology, and genomics of a nitrite-oxidizing bacterium from the phylum *Chloroflexi*. *The ISME J.* 6:2245-2256.
31. Schillinger C, Lux R, Riep B, Kikhney J, Petrich A, Friedmann A, Wolinsky LE, Göbel UB, **Daims H***, Moter A* (2012). Co-localized or randomly distributed? Pair cross correlation of in vivo grown subgingival biofilm bacteria quantified by digital image analysis. *PLoS One* 7: e37583.
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34. **Daims H*** and Wagner M (2011). *In situ* techniques and digital image analysis methods for quantifying spatial localization patterns of nitrifiers and other microorganisms in biofilm and flocs. *Methods Enzymol.* 496: 185-215.
35. Hall E*, Maixner F, Franklin O, Richter A, **Daims H**, Battin T (2011). Linking microbial and ecosystem ecology using ecological stoichiometry: a synthesis of conceptual and empirical approaches. *Ecosystems* 14: 261-273.
36. Lebedeva EV, Off S, Zumbrägel S, Kruse M, Shagzhina A, Lücker S, Maixner F, Lipski A, **Daims H**, Spieck S* (2011). Isolation and characterization of a moderately thermophilic nitrite-oxidizing bacterium from a geothermal spring. *FEMS Microbiol. Ecol.* 75: 195-204.
37. Hall EK*, Singer GA, Pölzl M, Hämmerle I, Schwarz C, **Daims H**, Maixner F, Battin T (2011). Looking inside the box: Using Raman microspectroscopy to deconstruct microbial biomass stoichiometry one cell at a time. *The ISME J.* 5: 196-208.
38. Lücker S, Wagner M, Maixner F, Pelletier E, Koch H, Vacherie B, Rattei T, Sinninghe Damsté JS, Spieck E, Le Paslier D, **Daims H*** (2010). A *Nitrospira* metagenome illuminates the physiology and evolution of globally important nitrite-oxidizing bacteria. *Proc. Natl. Acad. Sci. USA* 107: 13479-13484.
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40. Stoecker K, Dorninger C, **Daims H**, Wagner M* (2010). Double-labeling of oligonucleotide probes for fluorescence *in situ* hybridization (DOPE-FISH) improves signal intensity and increases rRNA accessibility. *Appl. Environ. Microbiol.* 79: 922-926.
41. Augspurger C, Karwautz C, Mussmann M, **Daims H**, Battin T* (2010). Drivers of bacterial colonization patterns in stream biofilms. *FEMS Microbiol. Ecol.* 72(1):47-57.
42. **Daims H*** (2009). Use of fluorescence *in situ* hybridization and the *daim*e image analysis program for the cultivation-independent quantification of microorganisms in environmental and medical samples. *Cold Spring Harb. Protoc.* doi:10.1101/pdb.prot5253.
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46. Biasi C, Meyer H, Rusalimova O, Hämmerle R, Kaiser C, Baryani C, **Daims H**, Lashchinsky N, Barsukov P, Richter A* (2008). Initial effects of experimental warming on carbon exchange rates, plant growth and microbial dynamics of a lichen-rich dwarf shrub tundra in Siberia. *Plant Soil* 307(1-2):191-205.
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 50. Huang WE, Stoecker K, Griffiths R, Newbold L, **Daims H**, Whiteley AS*, Wagner M (2007). Raman-FISH: Combining stable-isotope Raman spectroscopy and fluorescence in situ hybridization for the single cell analysis of identity and function. *Environ. Microbiol.* 9: 1878-1889.
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Book Chapters and Other Publications

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2. **Daims H** (2014). The Family *Nitrospiraceae*. *In* The Prokaryotes, pp. 733-749. (Rosenberg E, DeLong EF, Lory S, Stackebrandt E, Thompson F, eds.). Springer, New York.
3. **Daims H** and Wagner M (2010). The microbiology of nitrogen removal. *In* The microbiology of activated sludge, pp. 259-280. (Seviour RJ, Nielsen PH, eds.). IWA Publishing, London, UK.
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