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Genomic analysis of bacterial mycophagy

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Bibliography

1. de Boer W, Folman LB, Summerbell RC, & Boddy L (2005) Living in a fungal world: impact of fungi on soil bacterial niche development. *Fems Microbiology Reviews* 29(4):795-811.
2. Compant S, Duffy B, Nowak J, Clement C, & Barka EA (2005) Use of plant growth-promoting bacteria for biocontrol of plant diseases: principles, mechanisms of action, and future prospects. *Applied and Environmental Microbiology* 71(9):4951-4959.
3. Whipps JM (2001) Microbial interactions and biocontrol in the rhizosphere. *Journal of Experimental Botany* 52(Roots Special Issue):487-511.
4. Frey-Klett P, Garbaye J, & Tarkka M (2007) The mycorrhiza helper bacteria revisited. *New Phytol.* 176(1):22-36.
5. Shirtliff ME, Peters BM, & Jabra-Rizk MA (2009) Cross-kingdom interactions: *Candida albicans* and bacteria. *Fems Microbiology Letters* 299(1):1-8.
6. Straight PD & Kolter R (2009) Interspecies Chemical Communication in Bacterial Development. *Annual Review of Microbiology* 63:99-118.
7. Wargo MJ & Hogan DA (2006) Fungal-bacterial interactions: a mixed bag of mingling microbes. *Current Opinion in Microbiology* 9:359-364.
8. Chamilos G, Lewis RE, & Kontoyiannis DP (2007) Multidrug-resistant endosymbiotic bacteria account for the emergence of zygomycosis: A hypothesis. *Fungal Genetics and Biology* 44(2):88-92.
9. Lackner G, Partida-Martinez LP, & Hertweck C (2009) Endofungal bacteria as producers of mycotoxins. *Trends in Microbiology* 17(12):570-576.
10. Partida-Martinez LP & Hertweck C (2005) Pathogenic fungus harbours endosymbiotic bacteria for toxin production. *Nature* 437(7060):884-888.

Bibliography

11. Artursson V, Finlay RD, & Jansson JK (2005) Combined bromodeoxyuridine immunocapture and terminal-restriction fragment length polymorphism analysis highlights differences in the active soil bacterial metagenome due to *Glomus mosseae* inoculation or plant species. *Environmental Microbiology* 7(12):1952-1966.
12. Christensen H & Jakobsen I (1993) Reduction of bacterial-growth by a vesicular-arbuscular mycorrhizal fungus in the rhizosphere of cucumber (*Cucumis sativus* L.). *Biology and Fertility of Soils* 15(4):253-258.
13. de Boer W, de Ridder-Duine AS, Klein Gunnewiek PJA, Smant W, & van Veen JA (2008) Rhizosphere bacteria from sites with higher fungal densities exhibit greater levels of potential antifungal properties. *Soil Biology & Biochemistry* 40(6):1542-1544 .
14. Folman LB, Klein Gunnewiek PJA, Boddy L, & de Boer W (2008) Impact of white-rot fungi on numbers and community composition of bacteria colonizing beech wood from forest soil. *Fems Microbiology Ecology* 63(2):181-191 .
15. Höppener-Ogawa S, Leveau JHJ, Hundscheid MPJ, van Veen JA, & de Boer W (2009) Impact of *Collimonas* bacteria on community composition of soil fungi. *Environmental Microbiology* 11(6):1444-1452.
16. Buee M, de Boer W, Martin F, van Overbeek L, & Jurkevitch E (2009) The rhizosphere zoo: An overview of plant-associated communities of microorganisms, including phages, bacteria, archaea, and fungi, and of some of their structuring factors. *Plant and Soil* 321(1-2):189-212 .
17. Treonis AM, et al. (2004) Identification of groups of metabolically-active rhizosphere microorganisms by stable isotope probing of PLFAs. *Soil Biology & Biochemistry* 36(3):533-537 .
18. Butler JL, Williams MA, Bottomley PJ, & Myrold DD (2003) Microbial community dynamics associated with rhizosphere carbon flow. *Applied and Environmental Microbiology* 69:6793-6800.

19. de Boer W, de Ridder-Duine AS, Gunnewiek P, Smant W, & van Veen JA (2008) Rhizosphere bacteria from sites with higher fungal densities exhibit greater levels of potential antifungal properties. *Soil Biology & Biochemistry* 40(6):1542-1544 .
20. Céspedes R, González B, & Vicuña R (1997) Characterization of a bacterial consortium degrading the lignin model compound vanillyl-beta-D-glucopyranoside. *Journal of Basic Microbiology* 37(3):175-180.
21. Vicuña R, González B, Seelenfreund D, Ruttimann C, & Salas L (1993) Ability of natural bacterial isolates to metabolize high and low-molecular-weight lignin-derived molecules. *J. Biotechnol.* 30 (1):9-13 .
22. Murray AC & Woodward S (2003) In vitro interactions between bacteria isolated from Sitka spruce stumps and *Heterobasidion annosum*. *Forest Pathology* 33(1):53-67 .
23. Hildebrandt U, Ouziad F, Marner FJ, & Bothe H (2006) The bacterium *Paenibacillus validus* stimulates growth of the arbuscular mycorrhizal fungus *Glomus intraradices* up to the formation of fertile spores. *Fems Microbiology Letters* 254(2):258-267.
24. Barron GL (1988) Microcolonies of bacteria as a nutrient source for lignicolous and other fungi. *Canadian Journal of Botany-Revue Canadienne de Botanique* 66(12):2505-2510 .
25. Fermor TR, Wood DA, Lincoln SP, & Fenlon JS (1991) Bacteriolysis by *Agaricus bisporus*. *Journal of General Microbiology* 137:15-22 .
26. Denef K, *et al.* (2007) Community shifts and carbon translocation within metabolically-active rhizosphere microorganisms in grasslands under elevated CO₂. *Biogeosciences* 4(5):769-779.
27. Rillig MC (2004) Arbuscular mycorrhizae and terrestrial ecosystem processes. *Ecology Letters* 7(8):740-754 .
28. de Boer W, *et al.* (2004) *Collimonas fungivorans* gen. nov., sp nov., a chitinolytic soil bacterium with the ability to grow on living fungal

Bibliography

- hyphae. *International Journal of Systematic and Evolutionary Microbiology* 54:857-864.
29. Leveau JHJ & Preston GM (2008) Bacterial mycophagy: definition and diagnosis of a unique bacterial-fungal interaction. *New Phytologist* 177(4):859-876.
30. de Boer W, Klein Gunnewiek PJA, Kowalchuk GA, & van Veen JA (2001) Growth of chitinolytic dune soil beta-subclass Proteobacteria in response to invading fungal hyphae. *Applied and Environmental Microbiology* 67(8):3358-3362.
31. Höppener-Ogawa S, Leveau JHJ, van Veen JA, & de Boer W (2009) Mycophagous growth of *Collimonas* bacteria in natural soils, impact on fungal biomass turnover and interactions with mycophagous *Trichoderma* fungi. *Isme Journal* 3(2):190-198.
32. Leveau JHJ, Uroz S, & de Boer W (2009) The bacterial genus *Collimonas*: mycophagy, weathering and other adaptive solutions to life in oligotrophic soil environments. *Environmental Microbiology* 12:281-292.
33. Höppener-Ogawa S, et al. (2008) *Collimonas arenae* sp nov. and *Collimonas pratensis* sp nov., isolated from (semi-)natural grassland soils. *International Journal of Systematic and Evolutionary Microbiology* 58:414-419.
34. de Boer W, et al. (1998) Anti-fungal properties of chitinolytic dune soil bacteria. *Soil Biology & Biochemistry* 30(2):193-203.
35. Höppener-Ogawa S, Leveau JHJ, Smart W, van Veen JA, & de Boer W (2007) Specific detection and real-time PCR quantification of potentially mycophagous bacteria belonging to the genus *Collimonas* in different soil ecosystems. *Applied and Environmental Microbiology* 73(13):4191-4197.
36. Sogin ML, et al. (2006) Microbial diversity in the deep sea and the underexplored "rare biosphere". *Proceedings of the National Academy of Sciences of the United States of America* 103:12115-12120.

37. Opelt K & Berg G (2004) Diversity and antagonistic potential of bacteria associated with bryophytes from nutrient-poor habitats of the Baltic Sea coast. *Applied and Environmental Microbiology* 70(11):6569-6579.
38. Hakvag S, et al. (2009) Violacein-Producing *Collimonas* sp from the Sea Surface Microlayer of Costal Waters in Trondelag, Norway. *Marine Drugs* 7(4):576-588.
39. Höppener-Ogawa S, Leveau JHJ, Smant W, van Veen JA, & de Boer W (2007) Specific detection and real-time PCR quantification of potentially mycophagous bacteria belonging to the genus *Collimonas* in different soil ecosystems. *Applied and Environmental Microbiology* 73(13):4191-4197.
40. Benítez T, Rincón AM, Limón MC, & Codón AC (2004) Biocontrol mechanisms of *Trichoderma* strains. *International Microbiology* 7(4):249-260 .
41. Harman GE, Howell CR, Viterbo A, Chet I, & Lorito M (2004) *Trichoderma* species - Opportunistic, avirulent plant symbionts. *Nature Reviews Microbiology* 2(1):43-56.
42. Kamilova F, Leveau JHJ, & Lugtenberg B (2007) *Collimonas fungivorans*, an unpredicted in vitro but efficient in vivo biocontrol agent for the suppression of tomato foot and root rot. *Environmental Microbiology* 9(6):1597-1603.
43. Aspray TJ, Hansen SK, & Burns RG (2005) A soil-based microbial biofilm exposed to 2,4-D: bacterial community development and establishment of conjugative plasmid pJP4. *Fems Microbiology Ecology* 54(2):317-327.
44. Mahmood S, Paton GI, & Prosser JI (2005) Cultivation-independent in situ molecular analysis of bacteria involved in degradation of pentachlorophenol in soil. *Environmental Microbiology* 7(9):1349-1360.
45. Wilson MS, Herrick JB, Jeon CO, Hinman DE, & Madsen EL (2003) Horizontal transfer of phnAc dioxygenase genes within one of two phenotypically and genotypically distinctive naphthalene-

Bibliography

- degrading guilds from adjacent soil environments. *Applied and Environmental Microbiology* 69(4):2172-2181.
46. Uroz S, et al. (2009) Efficient mineral weathering is a distinctive functional trait of the bacterial genus *Collimonas*. *Soil Biology & Biochemistry* 41(10):2178-2186.
47. Fritsche K, et al. (2008) Identification and characterization of genes underlying chitinolysis in *Collimonas fungivorans* Ter331. *Fems Microbiology Ecology* 66(1):123-135.
48. Adesina MF, Lembke A, Costa R, Speksnijder A, & Smalla K (2007) Screening of bacterial isolates from various European soils for in vitro antagonistic activity towards *Rhizoctonia solani* and *Fusarium oxysporum*: site-dependent composition and diversity revealed. *Soil Biology & Biochemistry* 39:2818-2828.
49. Deveau A, et al. (2007) The mycorrhiza helper *Pseudomonas fluorescens* BBc6R8 has a specific priming effect on the growth, morphology and gene expression of the ectomycorrhizal fungus *Laccaria bicolor* S238N. *New Phytologist* 175:743-755.
50. Pivato B, et al. (2009) Bacterial effects on arbuscular mycorrhizal fungi and mycorrhiza development as influenced by the bacteria, fungi, and host plant. *Mycorrhiza* 19(2):81-90 .
51. Höppener-Ogawa S, Leveau JHJ, Hundscheid MPJ, van Veen JA, & de Boer W (2009) Impact of *Collimonas* bacteria on community composition of soil fungi. *Environmental Microbiology* 11(6):1444-1452.
52. Höppener-Ogawa S, Leveau JHJ, van Veen JA, & De Boer W (2009) Mycophagous growth of *Collimonas* bacteria in natural soils, impact on fungal biomass turnover and interactions with mycophagous *Trichoderma* fungi. *Isme Journal* 3(2):190-198.
53. Leveau JHJ et al. Manuscript in preparation.
54. Leveau JHJ, Gerards S, de Boer W, & van Veen JA (2004) Phylogeny-function analysis of (meta)genomic libraries: screening for expression of ribosomal RNA genes by large-insert library

- fluorescent in situ hybridization (LIL-FISH). *Environmental Microbiology* 6(9):990-998.
55. Leveau JHJ, Gerards S, Fritsche K, Zondag G, & van Veen JA (2006) Genomic flank-sequencing of plasposon insertion sites for rapid identification of functional genes. *Journal of Microbiological Methods* 66(2):276-285 .
56. Soler-Rivas C, Jolivet S, Arpin N, Olivier JM, & Wickers HJ (1999) Biochemical and physiological aspects of brown blotch disease of *Agaricus bisporus*. *Fems Microbiology Reviews* 23(5):591-614.
57. Barret M, et al. (2009) The plant pathogenic fungus *Gaeumannomyces graminis* var. tritici improves bacterial growth and triggers early gene regulations in the biocontrol strain *Pseudomonas fluorescens* Pf29Arp. *New Phytologist* 181(2):435 -447.
58. Schrey SD, Schellhammer M, Ecke M, Hampp R, & Tarkka MT (2005) Mycorrhiza helper bacterium *Streptomyces* AcH 505 induces differential gene expression in the ectomycorrhizal fungus *Amanita muscaria*. *New Phytologist* 168(1):205-216.
59. Lehr NA, Adomas A, Asiegbu FO, Hampp R, & Tarkka MT (2009) WS-5995 B, an antifungal agent inducing differential gene expression in the conifer pathogen *Heterobasidion annosum* but not in *Heterobasidion abietinum*. *Applied Microbiology and Biotechnology* 85(2):347-358 .
60. Roesti D, et al. (2005) Bacteria associated with spores of the arbuscular mycorrhizal fungi *Glomus geosporum* and *Glomus constrictum*. *Applied and Environmental Microbiology* 71(11):6673-6679.
61. Bonfante P & Anca IA (2009) Plants, Mycorrhizal Fungi, and Bacteria: A Network of Interactions. *Annual Review of Microbiology* 63:363-383.
62. Artursson V, Finlay RD, & Jansson JK (2006) Interactions between arbuscular mycorrhizal fungi and bacteria and their potential for stimulating plant growth. *Environmental Microbiology* 8(1):1-10.

Bibliography

63. Bianciotto V, et al. (1996) An obligately endosymbiotic mycorrhizal fungus itself harbors obligately intracellular bacteria. *Applied and Environmental Microbiology* 62(8):3005-3010.
64. de Weert S, Kuiper I, Lagendijk EL, Lamers GEM, & Lugtenberg BJJ (2004) Role of chemotaxis toward fusaric acid in colonization of hyphae of *Fusarium oxysporum* f. sp *radicis-lycopersici* by *Pseudomonas fluorescens* WCS365. *Molecular Plant-Microbe Interactions* 17(11):1185-1191.
65. Kamilova F, Lamers G, & Lugtenberg B (2008) Biocontrol strain *Pseudomonas fluorescens* WCS365 inhibits germination of *Fusarium oxysporum* spores in tomato root exudate as well as subsequent formation of new spores. *Environmental Microbiology* 10(9):2455-2461.
66. Park SY, et al. (2008) Citrinin, a mycotoxin from *Penicillium citrinum*, plays a role in inducing motility of *Paenibacillus polymyxa*. *Fems Microbiology Ecology* 65(2):229-237.
67. Warmink JA & van Elsas JD (2009) Migratory Response of Soil Bacteria to *Lyophyllum* sp Strain Karsten in Soil Microcosms. *Applied and Environmental Microbiology* 75(9):2820-2830.
68. Nazir R, Warmink JA, Boersma H, & van Elsas JD (2010) Mechanisms that promote bacterial fitness in fungal-affected soil microhabitats. *Fems Microbiology Ecology* 71(2):169-185.
69. Yang CH, Menge JA, & Cooksey DA (1994) Mutations affecting hyphal colonization and pyoverdine production in Pseudomonads antagonistic toward *Phytophthora parasitica*. *Applied and Environmental Microbiology* 60(2):473-481.
70. Bianciotto V, Andreotti S, Balestrini R, Bonfante P, & Perotto S (2001) Extracellular polysaccharides are involved in the attachment of *Azospirillum brasiliense* and *Rhizobium leguminosarum* to arbuscular mycorrhizal structures. *European Journal of Histochemistry* 45(1):39-49.

71. Broek AV & Vanderleyden J (1995) The role of bacterial motility, chemotaxis, and attachment in bacteria plant interactions. *Molecular Plant-Microbe Interactions* 8(6):800-810.
72. Rainey PB (1991) Phenotypic variation of *Pseudomonas putida* and *P. tolaasii* affects attachment to *Agaricus bisporus* mycelium. *Journal of General Microbiology* 137:2769-2779 .
73. Russo A, et al. (2003) Interaction between gfp-tagged *Pseudomonas tolaasii* P12 and *Pleurotus eryngii*. *Microbiological Research* 158(3):265-270.
74. Bolwerk A & Lugtenberg BJJ (2006) *Visualization of interactions of microbial biocontrol agents and phytopathogenic fungus Fusarium oxysporum f. sp radicis-lycopersici on tomato roots* (Springer, Dordrecht) pp 217-231.
75. Schroekh V, et al. (2009) Intimate bacterial-fungal interaction triggers biosynthesis of archetypal polyketides in *Aspergillus nidulans*. *Proceedings of the National Academy of Sciences of the United States of America* 106(34):14558-14563.
76. Ikeda R & Sawamura K (2008) Bacterial and H₂O₂ stress-induced apoptosis-like events in *Cryptococcus neoformans*. *Research in Microbiology* 159(9-10):628-634 .
77. Raaijmakers JM, Vlami M, & de Souza JT (2002) Antibiotic production by bacterial biocontrol agents. *Antonie Van Leeuwenhoek International Journal of General and Molecular Microbiology* 81(1-4):537-547.
78. Li SJ, Calvo AM, Yuen GY, Du LC, & Harris SD (2009) Induction of Cell Wall Thickening by the Antifungal Compound Dihydromaltophilin Disrupts Fungal Growth and is Mediated by Sphingolipid Biosynthesis. *Journal of Eukaryotic Microbiology* 56(2):182-187.
79. Li SJ, Du LC, Yuen G, & Harris SD (2006) Distinct ceramide synthases regulate polarized growth in the filamentous fungus *Aspergillus nidulans*. *Molecular Biology of the Cell* 17(3):1218-1227.

Bibliography

80. Bhattacharya D, Nagpure A, & Gupta RK (2007) Bacterial chitinases: properties and potential. *Critical Reviews in Biotechnology* 27(1):21-28.
81. Preston GM (2007) Metropolitan microbes: Type III secretion in multihost symbionts. *Cell Host & Microbe* 2:291-294.
82. Clarke M (2010) Recent insights into host-pathogen interactions from *Dictyostelium*. *Cellular Microbiology* 12(3):283-291.
83. Warmink JA & van Elsas JD (2008) Selection of bacterial populations in the mycosphere of *Laccaria proxima*: is type III secretion involved? *Isme Journal* 2(8):887-900.
84. Rezzonico F, Binder C, Defago G, & Moenne-Loccoz Y (2005) The type III secretion system of biocontrol *Pseudomonas fluorescens* KD targets the phytopathogenic chromista *Pythium ultimum* and promotes cucumber protection. *Molecular Plant-Microbe Interactions* 18(9):991-1001.
85. Chowdhury PR & Heinemann JA (2006) The general secretory pathway of *Burkholderia gladioli* pv. agaricicola BG164R is necessary for cavity disease in white button mushrooms. *Applied and Environmental Microbiology* 72(5):3558-3565.
86. Toljander JF, Lindahl BD, Paul LR, Elfstrand M, & Finlay RD (2007) Influence of arbuscular mycorrhizal mycelial exudates on soil bacterial growth and community structure. *Fems Microbiology Ecology* 61(2):295-304 .
87. Danell E, Alstrom S, & Ternstrom A (1993) *Pseudomonas fluorescens* in association with fruit bodies of the ectomycorrhizal mushroom *Cantharellus cibarius*. *Mycological Research* 97:1148-1152 .
88. Frey P, FreyKlett P, Garbaye J, Berge O, & Heulin T (1997) Metabolic and genotypic fingerprinting of fluorescent pseudomonads associated with the Douglas fir *Laccaria bicolor* mycorrhizosphere. *Applied and Environmental Microbiology* 63(5):1852-1860.

89. Frost LS, Leplae R, Summers AO, & Toussaint A (2005) Mobile genetic elements: the agents of open source evolution. *Nature Reviews Microbiology* 3(9):722-732.
90. Smalla K, Osborn AM, & Wellington EMH (2000) Isolation and characterization of plasmids from bacteria. *The Horizontal Gene Pool, Bacterial Plasmids and Gene Spread* ed Thomas CM (Harwood Academic Publishers, Amsterdam, The Netherlands), pp 207–248.
91. Szpirer C, Top E, Couturier M, & Mergeay M (1999) Retrotransfer or gene capture: a feature of conjugative plasmids, with ecological and evolutionary significance. *Microbiology-(UK)* 145:3321-3329 .
92. Ronchel MC, Ramos-Díaz MA, & Ramos JL (2000) Retrotransfer of DNA in the rhizosphere. *Environmental Microbiology* 2(3):319 -323.
93. Young JPW, *et al.* (2006) The genome of *Rhizobium leguminosarum* has recognizable core and accessory components. *Genome Biology* 7(4).
94. Okinaka RT, *et al.* (1999) Sequence and organization of pXO1, the large *Bacillus anthracis* plasmid harboring the anthrax toxin genes. *Journal of Bacteriology* 181(20):6509-6515.
95. Van der Auwera GA, *et al.* (2009) Plasmids captured in *C. metallidurans* CH34: defining the PromA family of broad-host-range plasmids. *Antonie Van Leeuwenhoek International Journal of General and Molecular Microbiology* 96(2):193-204.
96. Kobayashi DY & Crouch JA (2009) Bacterial/Fungal Interactions: From Pathogens to Mutualistic Endosymbionts. *Annual Review of Phytopathology* 47:63-82.
97. Duffy B, Schouten A, & Raaijmakers JM (2003) Pathogen self-defense: mechanisms to counteract microbial antagonism. *Annual Review of Phytopathology* 41:501-538.
98. Rainey PB, Cole ALJ, Fermor TR, & Wood DA (1990) A model system for examining involvement of bacteria in basidiome initiation of *Agaricus bisporus*. *Mycological Research* 94:191-195.

Bibliography

99. Xavier LJC & Germida JJ (2003) Bacteria associated with *Glomus clarum* spores influence mycorrhizal activity. *Soil Biology & Biochemistry* 35(3):471-478.
100. Bell AA & Wheeler MH (1986) Biosynthesis and Functions of Fungal Melanins. *Annual Review of Phytopathology* 24:411-451.
101. Butler MJ, Gardiner RB, & Day AW (2005) Degradation of melanin or inhibition of its synthesis: are these a significant approach as a biological control of phytopathogenic fungi? *Biological Control* 32(2):326-336.
102. Raaijmakers JM, Paultz TC, Steinberg C, Alabouvette C, & Moenne-Loccoz Y (2009) The rhizosphere: a playground and battlefield for soilborne pathogens and beneficial microorganisms. *Plant and Soil* 321(1-2):341-361.
103. Jamieson DJ (1998) Oxidative stress responses of the yeast *Saccharomyces cerevisiae*. *Yeast* 14(16):1511-1527.
104. Tarkka MT, Sarniguet A, & Frey-Klett P (2009) Inter-kingdom encounters: recent advances in molecular bacterium-fungus interactions. *Current Genetics* 55(3):233-243.
105. de Boer W, Gunnewiek P, Kowalchuk GA, & van Veen JA (2001) Growth of chitinolytic dune soil beta-subclass Proteobacteria in response to invading fungal hyphae. *Applied and Environmental Microbiology* 67(8):3358-3362.
106. Pel HJ, et al. (2007) Genome sequencing and analysis of the versatile cell factory *Aspergillus niger* CBS 513.88. *Nature Biotechnology* 25(2):221-231.
107. van Rij ET, Girard G, Lugtenberg BJJ, & Bloemberg GV (2005) Influence of fusaric acid on phenazine-1-carboxamide synthesis and gene expression of *Pseudomonas chlororaphis* strain PCL1391. *Microbiology-Sgm* 151:2805-2814.
108. Maligoy M, Mercade M, Cocaign-Bousquet M, & Loubiere P (2008) Transcriptome analysis of *Lactococcus lactis* in coculture with *Saccharomyces cerevisiae*. *Applied and Environmental Microbiology* 74(2):485-494.

109. Barnett MJ, Tolman CJ, Fisher RF, & Long SR (2004) A dual-genome Symbiosis Chip for coordinate study of signal exchange and development in a prokaryote-host interaction. *Proceedings of the National Academy of Sciences of the United States of America* 101(47):16636-16641.
110. Tailleux L, *et al.* (2008) Probing Host Pathogen Cross-Talk by Transcriptional Profiling of Both *Mycobacterium tuberculosis* and Infected Human Dendritic Cells and Macrophages. *Plos One* 3(1):e1403.
111. van der Veen D, Oliveira JM, van den Berg WAM, & de Graaff LH (2009) Analysis of Variance Components Reveals the Contribution of Sample Processing to Transcript Variation. *Applied and Environmental Microbiology* 75(8):2414-2422.
112. Affymetrix (2004) GeneChip Expression Analysis, technical manual 701021 Rev. 5.
http://jaxservices.jax.org/Affymetrix_Gene_expression_manual_430.pdf
113. Bolstad BM, Irizarry RA, Astrand M, & Speed TP (2003) A comparison of normalization methods for high density oligonucleotide array data based on variance and bias. *Bioinformatics* 19(2):185-193.
114. Irizarry RA, *et al.* (2003) Summaries of affymetrix GeneChip probe level data. *Nucleic Acids Research* 31(4):e15.
115. Irizarry RA, *et al.* (2003) Exploration, normalization, and summaries of high density oligonucleotide array probe level data. *Biostatistics* 4(2):249-264.
116. Gautier L, Cope L, Bolstad BM, & Irizarry RA (2004) affy - analysis of Affymetrix GeneChip data at the probe level. *Bioinformatics* 20(3):307-315.
117. Smyth GK (2004) Linear Models and Empirical Bayes Methods for Assessing Differential Expression in Microarray. *Statistical Applications in Genetics and Molecular Biology* 3(1):Article 3.

Bibliography

118. Applied Biosystems (2008) Guide to Performing Relative Quantitation of Gene Expression Using Real-Time Quantitative PCR. Part Number 4371095 Rev B.
119. Anantharam V, Allison MJ, & Maloney PC (1989) Oxalate:formate exchange. The basis for energy coupling in *Oxalobacter*. *Journal of Biological Chemistry* 264(13):7244-7250 .
120. Dimroth P & Schink B (1998) Energy conservation in the decarboxylation of dicarboxylic acids by fermenting bacteria. *Archives of Microbiology* 170(2):69-77.
121. Oh JI & Bowien B (1998) Structural analysis of the fds operon encoding the NAD(+) -linked formate dehydrogenase of *Ralstonia eutropha*. *Journal of Biological Chemistry* 273(41):26349-26360.
122. Svedruzic D, et al. (2005) The enzymes of oxalate metabolism: unexpected structures and mechanisms. *Archives of Biochemistry and Biophysics* 433(1):176-192.
123. Sahin N (2003) Oxalotrophic bacteria. *Research in Microbiology* 154(6):399-407.
124. Quayle JR (1961) Metabolism of C₁ compounds in autotrophic and heterotrophic microorganisms. *Annual Review of Microbiology* 15:119-152.
125. Cornick NA & Allison MJ (1996) Assimilation of oxalate, acetate, and CO₂ by *Oxalobacter formigenes*. *Canadian Journal of Microbiology* 42(11):1081-1086.
126. Dawson KA, Allison MJ, & Hartman PA (1980) Isolation and some characteristics of anaerobic oxalate-degrading bacteria from the rumen. *Applied and Environmental Microbiology* 40(4):833-839.
127. Wyborn NR, Mills J, Williams SG, & Jones CW (1996) Molecular characterisation of formamidase from *Methylophilus methylotrophus*. *European Journal of Biochemistry* 240(2):314-322.
128. Skouloubris S, Labigne A, & De Reuse H (2001) The AmiE aliphatic amidase and AmiF formamidase of *Helicobacter pylori*: natural evolution of two enzyme paralogues. *Molecular Microbiology* 40(3):596-609.

129. Wu QT & Stewart V (1998) NasFED proteins mediate assimilatory nitrate and nitrite transport in *Klebsiella oxytoca* (*pneumoniae*) M5al. *Journal of Bacteriology* 180(5):1311-1322.
130. Mantsala P & Zalkin H (1976) Active subunits of *Escherichia coli* glutamate synthase. *Journal of Bacteriology* 126(1):539-541.
131. Young GM, Amid D, & Miller VL (1996) A bifunctional urease enhances survival of pathogenic *Yersinia enterocolitica* and *Morganella morganii* at low pH. *Journal of Bacteriology* 178(22):6487-6495.
132. Thomas G, Coutts G, & Merrick M (2000) The gInKamtB operon - a conserved gene pair in prokaryotes. *Trends in Genetics* 16(1):11-14.
133. Khademi S & Stroud RM (2006) The Amt/MEP/Rh family: structure of AmtB and the mechanism of ammonia gas conduction. *Physiology* 21:419-429.
134. Valladares A, Montesinos ML, Herrero A, & Flores E (2002) An ABC-type, high-affinity urea permease identified in cyanobacteria. *Molecular Microbiology* 43(3):703-715.
135. Mao Y, Doyle MP, & Chen JR (2001) Insertion mutagenesis of wca reduces acid and heat tolerance of enterohemorrhagic *Escherichia coli* O157:H7. *Journal of Bacteriology* 183(12):3811-3815.
136. Becker A & Vorhölter FJ eds (2009) *Xanthan biosynthesis by Xanthomonas bacteria: an overview of the current biochemical and genomic data* (Caister Academic Press), pp 1-13.
137. Roseiro JC, Esgalhado ME, Emery AN, & AmaralCollaco MT (1996) Technological and kinetic aspects of sublethal acid toxicity in microbial gum production. *Journal of Chemical Technology and Biotechnology* 65(3):258-264.
138. Esgalhado ME, Caldeira AT, Roseiro JC, & Emery AN (2001) Polysaccharide synthesis as a carbon dissipation mechanism in metabolically uncoupled *Xanthomonas campestris* cells. *Journal of Biotechnology* 89(1):55-63.
139. Costerton JW, et al. (1987) Bacterial biofilms in nature and disease. *Annual Review of Microbiology* 41:435-464.

Bibliography

140. Stewart PS (2002) Mechanisms of antibiotic resistance in bacterial biofilms. *International Journal of Medical Microbiology* 292(2):107-113.
141. Stewart PS & Franklin MJ (2008) Physiological heterogeneity in biofilms. *Nature Reviews Microbiology* 6(3):199-210.
142. Beeckman DSA & Vanrompay DCG (2009) Bacterial Secretion Systems with an Emphasis on the Chlamydial Type III Secretion System. *Current Issues in Molecular Biology* 12:17-41.
143. Cianciotto NP (2005) Type II secretion: a protein secretion system for all seasons. *Trends in Microbiology* 13(12):581-588 .
144. Foster PL (2007) Stress-induced mutagenesis in bacteria. *Critical Reviews in Biochemistry and Molecular Biology* 42:373-397.
145. Wilson DN & Nierhaus KH (2005) Ribosomal proteins in the spotlight. *Critical Reviews in Biochemistry and Molecular Biology* 40(5):243-267.
146. Brodersen DE & Nissen P (2005) The social life of ribosomal proteins. *Febs Journal* 272(9):2098-2108.
147. Ishige T, Krause M, Bott M, Wendisch VF, & Sahm H (2003) The phosphate starvation stimulon of *Corynebacterium glutamicum* determined by DNA microarray analyses. *Journal of Bacteriology* 185(15):4519-4529.
148. Lawrence CL, Botting CH, Antrobus R, & Coote PJ (2004) Evidence of a new role for the high-osmolarity glycerol mitogen-activated protein kinase pathway in yeast: regulating adaptation to citric acid stress. *Molecular and Cellular Biology* 24(8):3307-3323.
149. Silberbach M & Burkovski A (2006) Application of global analysis techniques to *Corynebacterium glutamicum*: new insights into nitrogen regulation. *Journal of Biotechnology* 126(1):101-110.
150. Silberbach M, et al. (2005) DNA microarray analysis of the nitrogen starvation response of *Corynebacterium glutamicum*. *Journal of Biotechnology* 119(4):357-367.

151. Stintzi A (2003) Gene expression profile of *Campylobacter jejuni* in response to growth temperature variation. *Journal of Bacteriology* 185(6):2009-2016.
152. Akbar S, Lee SY, Boylan SA, & Price CW (1999) Two genes from *Bacillus subtilis* under the sole control of the general stress transcription factor σ^B . *Microbiology-Uk* 145:1069-1078.
153. Pragai Z & Harwood CR (2002) Regulatory interactions between the Pho and σ^B -dependent general stress regulons of *Bacillus subtilis*. *Microbiology-Sgm* 148:1593-1602.
154. Hecker M & Volker U (1998) Non-specific, general and multiple stress resistance of growth-restricted *Bacillus subtilis* cells by the expression of the sigma(B) regulon. *Molecular Microbiology* 29(5):1129-1136 .
155. Aravind L & Koonin EV (2001) Prokaryotic homologs of the eukaryotic DNA-end-binding protein Ku, novel domains in the Ku protein and prediction of a prokaryotic double-strand break repair system. *Genome Research* 11(8):1365-1374.
156. Stammers DK, et al. (2001) The structure of the negative transcriptional regulator NmrA reveals a structural superfamily which includes the short-chain dehydrogenase/reductases. *Embo Journal* 20(23):6619-6626.
157. Andrianopoulos A, Kourambas S, Sharp JA, Davis MA, & Hynes MJ (1998) Characterization of the *Aspergillus nidulans* nmrA gene involved in nitrogen metabolite repression. *Journal of Bacteriology* 180(7):1973-1977.
158. Gorfinkel L, Diallinas G, & Scazzocchio C (1993) Sequence and regulation of the uapa gene encoding a uric acid-xanthine permease in the fungus *Aspergillus nidulans*. *Journal of Biological Chemistry* 268(31):23376-23381.
159. de Alba E & Tjandra N (2004) Structural studies on the Ca^{2+} -binding domain of human nucleobindin (calnuc). *Biochemistry* 43(31):10039-10049.

Bibliography

160. Tsukumo Y, et al. (2007) Nucleobindin 1 controls the unfolded protein response by inhibiting ATF6 activation. *Journal of Biological Chemistry* 282(40):29264-29272.
161. Corrochano LM, Lauter FR, Ebbole DJ, & Yanofsky C (1995) Light and developmental regulation of the gene con-10 of *Neurospora crassa*. *Developmental Biology* 167(1):190-200.
162. Roberts AN, Berlin V, Hager KM, & Yanofsky C (1988) Molecular Analysis of a *Neurospora crassa* Gene Expressed During Conidiation. *Molecular and Cellular Biology* 8(6):2411-2418.
163. Wilson RA, et al. (2004) Two Δ9-stearic acid desaturases are required for *Aspergillus nidulans* growth and development. *Fungal Genetics and Biology* 41(5):501-509.
164. van den Brink HJM, van Gorcom RFM, van den Hondel C, & Punt PJ (1998) Cytochrome P450 enzyme systems in fungi. *Fungal Genetics and Biology* 23(1):1-17.
165. Gautam P, et al. (2008) Proteomic and Transcriptomic Analysis of *Aspergillus fumigatus* on Exposure to Amphotericin B. *Antimicrobial Agents and Chemotherapy* 52(12):4220-4227.
166. Hamilton JM (1972) Sterols from polyene-resistant mutants of *Candida albicans*. *Journal of General Microbiology* 73:201-203.
167. Moore CB, Sayers N, Mosquera J, Slaven J, & Denning DW (2000) Antifungal drug resistance in *Aspergillus*. *Journal of Infection* 41(3):203-220.
168. DeZwaan TM, Carroll AM, Valent B, & Sweigard JA (1999) Magnaporthe grisea Pth11p is a novel plasma membrane protein that mediates appressorium differentiation in response to inductive substrate cues. *Plant Cell* 11(10):2013-2030.
169. Lin XR & Momany M (2004) Identification and complementation of abnormal hyphal branch mutants ahbA1 and ahbB1 in *Aspergillus nidulans*. *Fungal Genetics and Biology* 41(11):998-1006.
170. Meyer V, et al. (2007) Survival in the presence of antifungals - Genome-wide expression profiling of *Aspergillus niger* in response

- to sublethal concentrations of caspofungin and fenpropimorph. *Journal of Biological Chemistry* 282:32935-32948.
171. Yuen KY, et al. (2001) Characterization of AFMP1: a novel target for serodiagnosis of aspergillosis. *Journal of Clinical Microbiology* 39(11):3830-3837.
172. Yamazaki H, Tanaka A, Kaneko J, Ohta A, & Horiuchi H (2008) *Aspergillus nidulans* ChiA is a glycosylphosphatidylinositol (GPI)-anchored chitinase specifically localized at polarized growth sites. *Fungal Genetics and Biology* 45(6):963-972.
173. Meyer V, et al. (2009) Reconstruction of Signaling Networks Regulating Fungal Morphogenesis by Transcriptomics. *Eukaryotic Cell* 8(11):1677-1691 .
174. Mao YQ, Varoglu M, & Sherman DH (1999) Molecular characterization and analysis of the biosynthetic gene cluster for the antitumor antibiotic mitomycin C from *Streptomyces lavendulae* NRRL 2564. *Chemistry & Biology* 6(4):251-263.
175. Almeida PF & Pokorny A (2009) Mechanisms of Antimicrobial, Cytolytic, and Cell-Penetrating Peptides: From Kinetics to Thermodynamics. *Biochemistry* 48(34):8083-8093 .
176. Lewis JA, Roberts DP, & Hollenbeck MD (1991) Induction of cytoplasmic leakage from *Rhizoctonia solani* hyphae by *Gliocladium virens* and partial characterization of a leakage factor *Biocontrol Science and Technology* 1(1):21-29.
177. Riedlinger J, et al. (2006) Auxofuran, a novel metabolite that stimulates the growth of fly agaric, is produced by the mycorrhiza helper bacterium *Streptomyces* strain AcH 505. *Applied and Environmental Microbiology* 72(5):3550-3557.
178. Ahn SJ, Yang CH, & Cooksey DA (2007) *Pseudomonas putida* 06909 genes expressed during colonization on mycelial surfaces and phenotypic characterization of mutants. *Journal of Applied Microbiology* 103(1):120-132.

Bibliography

179. Dutton MV & Evans CS (1996) Oxalate production by fungi: its role in pathogenicity and ecology in the soil environment. *Canadian Journal of Microbiology* 42(9):881-895 .
180. Horner HT & Wagner BL (1995) Calcium oxalate formation in higher plants. *Calcium oxalate in biological systems*, ed Khan SR (CRC Press, Boca Raton, Florida), pp 53-72.
181. Rosling A (2009) Trees, Mycorrhiza and Minerals - Field Relevance of in vitro Experiments. *Geomicrobiology Journal* 26(6):389-401.
182. Folman LB, Gunnewiek P, Boddy L, & de Boer W (2008) Impact of white-rot fungi on numbers and community composition of bacteria colonizing beech wood from forest soil. *Fems Microbiology Ecology* 63(2):181-191.
183. Smalla K, et al. (2000) Exogenous isolation of antibiotic resistance plasmids from piggery manure slurries reveals a high prevalence and diversity of IncQ-like plasmids. *Applied and Environmental Microbiology* 66(11):4854-4862.
184. Rensing C, Newby DT, & Pepper IL (2002) The role of selective pressure and selfish DNA in horizontal gene transfer and soil microbial community adaptation. *Soil Biology & Biochemistry* 34(3):285-296.
185. Orgel LE, Crick FHC, & Sapienza C (1980) Selfish DNA. *Nature* 288(5792):645-646 .
186. Doolittle WF & Sapienza C (1980) Selfish genes, the phenotype paradigm and genome evolution. *Nature* 284(5757):601-603 .
187. Velmurugan S, Mehta S, Uzri D, & Jayaram M (2003) Stable propagation of 'selfish' genetic elements. *Journal of Biosciences* 28(5):623-636.
188. Lilley A., Young P, & M. B (2000) Bacterial population genetics: do plasmids maintain bacterial diversity and adaptation? *The horizontal gene pool, bacterial plasmids and gene spread*, ed Thomas CM (Harwood Academic Publishers), pp 287-300.
189. Joshi BD, Berg M, Rogers J, Fletcher J, & Melcher U (2005) Sequence comparisons of plasmids pBJS-O of *Spiroplasma citri* and

- pSKU146 of *Spiroplasma kunkelii*: implications for plasmid evolution. *BMC Genomics* 6:175.
190. Price CW, *et al.* (2001) Genome-wide analysis of the general stress response in *Bacillus subtilis*. *Molecular Microbiology* 41(4):757-774.
191. Dennis JJ (2005) The evolution of IncP catabolic plasmids. *Current Opinion in Biotechnology* 16(3):291-298.
192. Osborn AM & Boltner D (2002) When phage, plasmids, and transposons collide: genomic islands, and conjugative- and mobilizable-transposons as a mosaic continuum. *Plasmid* 48(3):202-212.
193. Haagensen JAJ, Hansen SK, Johansen T, & Molin S (2002) In situ detection of horizontal transfer of mobile genetic elements. *Fems Microbiology Ecology* 42(2):261-268.
194. Jones BV & Marchesi JR (2007) Transposon-aided capture (TRACA) of plasmids resident in the human gut mobile metagenome. *Nature Methods* 4(1):55-61.
195. Smalla K & Sobecky PA (2002) The prevalence and diversity of mobile genetic elements in bacterial communities of different environmental habitats: insights gained from different methodological approaches. *Fems Microbiology Ecology* 42(2): 165-175.
196. Tauch A, *et al.* (2002) The complete nucleotide sequence and environmental distribution of the cryptic, conjugative, broad-host-range plasmid pIPO2 isolated from bacteria of the wheat rhizosphere. *Microbiology-Sgm* 148:1637-1653.
197. Schneiker S, *et al.* (2001) The genetic organization and evolution of the broad host range mercury resistance plasmid pSB102 isolated from a microbial population residing in the rhizosphere of alfalfa. *Nucleic Acids Research* 29(24):5169-5181.
198. Marques MV, da Silva AM, & Gomes SL (2001) Genetic organization of plasmid pXF51 from the plant pathogen *Xylella fastidiosa*. *Plasmid* 45(3):184-199.

Bibliography

199. Gstalder ME, *et al.* (2003) Replication functions of new broad host range plasmids isolated from polluted soils. *Research in Microbiology* 154(7):499-509.
200. Rhodes G, *et al.* (2004) Complete nucleotide sequence of the conjugative tetracycline resistance plasmid pFBAOT6, a member of a group of IncU plasmids with global ubiquity. *Applied and Environmental Microbiology* 70(12):7497-7510.
201. de Boer W, *et al.* (2004) *Collimonas fungivorans* gen. nov., sp nov., a chitinolytic soil bacterium with the ability to grow on living fungal hyphae. *International Journal of Systematic and Evolutionary Microbiology* 54:857-864.
202. King EO, Ward MK, & Raney DE (1954) Two simple media for the demonstration of pyocyanin and fluorescin. *Journal of Laboratory and Clinical Medicine* 44(2):301-307.
203. Bertani G (1951) Studies on lysogenesis .1. The mode of phage liberation by lysogenic *Escherichia coli*. *Journal of Bacteriology* 62(3):293-300.
204. Rondon MR, Raffel SJ, Goodman RM, & Handelsman J (1999) Toward functional genomics in bacteria: analysis of gene expression in *Escherichia coli* from a bacterial artificial chromosome library of *Bacillus cereus*. *Proceedings of the National Academy of Sciences of the United States of America* 96(11):6451-6455.
205. Meyer F, *et al.* (2003) GenDB - an open source genome annotation system for prokaryote genomes. *Nucleic Acids Research* 31(8):2187-2195.
206. van Elsas JD, Gardener BBM, Wolters AC, & Smit E (1998) Isolation, characterization, and transfer of cryptic gene-mobilizing plasmids in the wheat rhizosphere. *Applied and Environmental Microbiology* 64(3):880-889.
207. Ike Y, Hashimoto H, & Mitsuhashi S (1981) A Mutant Defective in Partitioning of Composite Plasmid Rms201. *Journal of Bacteriology* 147(2):578-588.

208. Gotz A, et al. (1996) Detection and characterization of broad-host-range plasmids in environmental bacteria by PCR. *Applied and Environmental Microbiology* 62(7):2621-2628.
209. Uraji M, Suzuki K, & Yoshida K (2002) A novel plasmid curing method using incompatibility of plant pathogenic Ti plasmids in *Agrobacterium tumefaciens*. *Genes & Genetic Systems* 77(1):1-9.
210. Sambrook J, Fritsch EF, & Maniatis T (1989) *Molecular Cloning: A Laboratory Manual* (Cold Spring Harbor Laboratory, Cold Spring Harbor, NY) second ed.
211. Simons M, et al. (1996) Gnotobiotic system for studying rhizosphere colonization by plant growth-promoting *Pseudomonas* bacteria. *Molecular Plant-Microbe Interactions* 9(7):600-607.
212. Zar JH (1999) *Biostatistical analysis* (Prentice Hall) 4th ed.
213. Brito L & Paveia H (1999) Presence and analysis of large plasmids in *Oenococcus oeni*. *Plasmid* 41(3):260-267.
214. Nakamura H, et al. (2003) Usefulness of a combination of pulsed-field gel electrophoresis and enrichment culture in laboratory investigation of a foodborne outbreak due to *Clostridium perfringens*. *Diagnostic Microbiology and Infectious Disease* 47(3):471-475.
215. Bergstrom M, Hermansson M, & Dahlberg C (2004) Isolation and sequencing of the replication region of plasmid pBFP1 isolated from a marine biofilm. *Plasmid* 51(3):179-184.
216. Francia MV, Delacruz F, & Lobo JMG (1993) Secondary sites for integration mediated by the tn21 integrase. *Molecular Microbiology* 10(4):823-828.
217. Belogurov AA, et al. (2000) Antirestriction protein ard (Type C) encoded by IncW plasmid pSa has a high similarity to the "protein transport" domain of TraC1 primase of promiscuous plasmid RP4. *Journal of Molecular Biology* 296(4):969-977.
218. Espinosa M, et al. eds (2000) *Plasmid replication and copy number control* (Harwood academic publishers), pp 1-47.

Bibliography

219. Kruger R, Rakowsky SA, & Filutowics M eds (2004) *Participating elements in replication of iteron-containing plasmids* (ASM press, American Society for Microbiology), pp 25-45.
220. Summers DK (1996) *The biology of plasmids* (Blackwell science).
221. del Solar G, Hernández-Arriaga AM, Gomis-Ruth FX, Coll M, & Espinosa M (2002) A genetically economical family of plasmid-encoded transcriptional repressors involved in control of plasmid copy number. *Journal of Bacteriology* 184(18):4943-4951.
222. Schaefer C & Messer W (1991) DnaA protein DNA interaction - modulation of the recognition sequence. *Molecular & General Genetics* 226(1-2):34-40.
223. Kawamukai M, Matsuda H, Fujii W, Utsumi R, & Komano T (1989) Nucleotide-sequences of fic and fic-1 genes involved in cell filamentation induced by cyclic-amp in *Escherichia coli*. *Journal of Bacteriology* 171(8):4525-4529.
224. Nelson KE, et al. (2003) Complete genome sequence and comparative analysis of the metabolically versatile *Pseudomonas putida* KT2440 (vol 4, pg 799, 2002). *Environmental Microbiology* 5(7):630-630.
225. Klockgether J, Reva O, Larbig K, & Tummler B (2004) Sequence analysis of the mobile genome island pKLC102 of *Pseudomonas aeruginosa* C. *Journal of Bacteriology* 186(2):518-534.
226. Kornacki JA, Chang CH, & Figurski DH (1993) Kil-kor regulon of promiscuous plasmid-rk2 - structure, products, and regulation of 2 operons that constitute the kilE locus. *Journal of Bacteriology* 175(16):5078-5090.
227. Cooper TF & Heinemann JA (2000) Postsegregational killing does not increase plasmid stability but acts to mediate the exclusion of competing plasmids. *Proceedings of the National Academy of Sciences of the United States of America* 97(23):12643-12648.
228. Huang J, et al. (2006) Molecular characterization of a DNA fragment harboring the replicon of pBMB165 from *Bacillus thuringiensis* subsp *tenebrionis*. *BMC Genomics* 7.

229. Sanchis V, Agaisse H, Chaufaux J, & Lereclus D (1997) A recombinase-mediated system for elimination of antibiotic resistance gene markers from genetically engineered *Bacillus thuringiensis* strains. *Applied and Environmental Microbiology* 63(2):779-784.
230. Bignell C & Thomas CM (2001) The bacterial ParA-ParB partitioning proteins. *J. Biotechnol.* 91(1):1-34.
231. Pansegrouw W, et al. (1994) Complete Nucleotide-Sequence of Birmingham IncP-Alpha Plasmids - Compilation and Comparative-Analysis. *Journal of Molecular Biology* 239(5):623-663.
232. Gerlitz M, Hrabak O, & Schwab H (1990) Partitioning of broad-host-range plasmid rp4 is a complex system involving site-specific recombination. *Journal of Bacteriology* 172(11):6194-6203.
233. Top E, Vanrolleghem P, Mergeay M, & Verstraete W (1992) Determination of the mechanism of retrotransfer by mechanistic mathematical-modeling. *Journal of Bacteriology* 174(18):5953-5960.
234. Boschioli ML, et al. (2002) The *Brucella suis* virB operon is induced intracellularly in macrophages. *Proceedings of the National Academy of Sciences of the United States of America* 99(3):1544-1549.
235. Llosa M, Gomis-Ruth FX, Coll M, & de la Cruz F (2002) Bacterial conjugation: a two-step mechanism for DNA transport. *Molecular Microbiology* 45(1):1-8.
236. Christie PJ, Atmakuri K, Krishnamoorthy V, Jakubowski S, & Cascales E (2005) Biogenesis, architecture, and function of bacterial type IV secretion systems. *Annual Review of Microbiology* 59:451-485.
237. Avila P, Nunez N, & de la Cruz F (1996) Plasmid R6K contains two functional oriTs which can assemble simultaneously in relaxosomes in vivo. *Journal of Molecular Biology* 261(2):135-143.
238. Porter SG, Yanofsky MF, & Nester EW (1987) Molecular characterization of the virD operon from agrobacterium-tumefaciens. *Nucleic Acids Research* 15(18):7503-7517.

Bibliography

239. Llosa M, Bolland S, & Delacruz F (1994) Genetic organization of the conjugal dna processing region of the incw plasmid-r388. *Journal of Molecular Biology* 235(2):448-464.
240. Fernandez-Lopez R, et al. (2005) Unsaturated fatty acids are inhibitors of bacterial conjugation. *Microbiology-Sgm* 151:3517-3526.
241. Szpirer CY, Faelen M, & Couturier M (2000) Interaction between the RP4 coupling protein TraG and the pBHR1 mobilization protein Mob. *Molecular Microbiology* 37(6):1283-1292.
242. Kim JG, et al. (2006) Bases of biocontrol: Sequence predicts synthesis and mode of action of agrocin 84, the Trojan Horse antibiotic that controls crown gall. *Proceedings of the National Academy of Sciences of the United States of America* 103(23):8846-8851.
243. Cazalet C, et al. (2004) Evidence in the *Legionella pneumophila* genome for exploitation of host cell functions and high genome plasticity. *Nature Genetics* 36(11):1165-1173.
244. Kim SR & Komano T (1992) Nucleotide-sequence of the r721 shufflon. *Journal of Bacteriology* 174(21):7053-7058.
245. Foster GC, McGhee GC, Jones AL, & Sundin GW (2004) Nucleotide sequences, genetic organization, and distribution of pEU30 and pEL60 from *Erwinia amylovora*. *Applied and Environmental Microbiology* 70(12):7539-7544.
246. Bellgard M, Schibeci D, Trifonov E, & Gojobori T (2001) Early detection of G+C differences in bacterial species inferred from the comparative analysis of the two completely sequenced *Helicobacter pylori* strains. *Journal of Molecular Evolution* 53(4-5):465-468.
247. Sueoka N (1988) Directional mutation pressure and neutral molecular evolution. *Proceedings of the National Academy of Sciences of the United States of America* 85(8):2653-2657.
248. Nei M & Gojobori T (1986) Simple methods for estimating the numbers of synonymous and nonsynonymous nucleotide substitutions. *Molecular Biology and Evolution* 3(5):418-426.

249. Lovett ST (2004) Encoded errors: mutations and rearrangements mediated by misalignment at repetitive DNA sequences. *Molecular Microbiology* 52(5):1243-1253.
250. Lugtenberg BJJ, Dekkers L, & Bloemberg GV (2001) Molecular determinants of rhizosphere colonization by *Pseudomonas*. *Annual Review of Phytopathology* 39:461-490.
251. Uroz S, et al. (2007) Effect of the mycorrhizosphere on the genotypic and metabolic diversity of the bacterial communities involved in mineral weathering in a forest soil. *Applied and Environmental Microbiology* 73(9):3019-3027.
252. Bergstrom CT, Lipsitch M, & Levin BR (2000) Natural selection, infectious transfer and the existence conditions for bacterial plasmids. *Genetics* 155(4):1505-1519.
253. Sota M, et al. (2007) Region-specific insertion of transposons in combination with selection for high plasmid transferability and stability accounts for the structural similarity of IncP-1 plasmids. *Journal of Bacteriology* 189(8):3091-3098.
254. Espinosa-Urgel M (2004) Plant-associated *Pseudomonas* populations: molecular biology, DNA dynamics, and gene transfer. *Plasmid* 52(3):139-150.
255. van Elsas JD & Bailey MJ (2002) The ecology of transfer of mobile genetic elements. *Fems Microbiology Ecology* 42(2):187-197.
256. van Elsas JD, Fry J, Hirsch P, & Molin S (2000) Ecology of plasmid transfer and spread. *The horizontal gene pool, bacterial plasmids and gene spread*, ed Thomas CM (Harwood academic publishers), pp 175-206.
257. van Elsas JD, Turner S, & Bailey MJ (2003) Horizontal gene transfer in the phytosphere. *New Phytologist* 157(3):525-537.
258. Smit E, van Elsas JD, van Veen JA, & de Vos WM (1991) Detection of plasmid transfer from *Pseudomonas fluorescens* to indigenous bacteria in soil by using bacteriophage Phi-r2f for donor counterselection. *Applied and Environmental Microbiology* 57(12):3482-3488.

Bibliography

259. Höppener-Ogawa S, et al. (2008) *Collimonas arenae* sp nov. and *Collimonas pratensis* sp nov., isolated from (semi-)natural grassland soils. *International Journal of Systematic and Evolutionary Microbiology* 58:414-419.
260. King E, Ward M, & Raney D (1954) Two simple media for the demonstration of pyocyanin and fluorescin. *Journal of Laboratory and Clinical Medicine* 44:301–307.
261. Workman C, et al. (2002) A new non-linear normalization method for reducing variability in DNA microarray experiments. *Genome Biology* 3(9):research0048.1–research0048.16.
262. Draghici S (2003) *Data analysis tools for DNA microarrays* (Chapman & Hall / CRC, Boca Raton, FL).
263. Bayjanov JR, et al. (2009) PanCGH: a genotype-calling algorithm for pangenome CGH data. *Bioinformatics* 25(3):309-314.
264. Gentleman RC, et al. (2004) Bioconductor: open software development for computational biology and bioinformatics. *Genome Biology* 5(10):R80.
265. Fawcett T (2006) An introduction to ROC analysis. *Pattern Recognition Letters* 27(8):861-874.
266. Overbeek R, et al. (2005) The subsystems approach to genome annotation and its use in the project to annotate 1000 genomes. *Nucleic Acids Research* 33(17):5691-5702.
267. Muller D, et al. (2007) A tale of two oxidation states: bacterial colonization of arsenic-rich environments. *Plos Genetics* 3(4).
268. Weiss S, et al. (2009) Enhanced structural and functional genome elucidation of the arsenite-oxidizing strain *Herminiimonas arsenicoxydans* by proteomics data. *Biochimie* 91(2):192-203.
269. Audic S, et al. (2007) Genome analysis of *Minibacterium massiliensis* highlights the convergent evolution of water-living bacteria. *Plos Genetics* 3:1454-1463.
270. Buttner D & He SY (2009) Type III Protein Secretion in Plant Pathogenic Bacteria. *Plant Physiology* 150(4):1656-1664.

271. Mukaihara T & Tamura N (2009) Identification of novel *Ralstonia solanacearum* type III effector proteins through translocation analysis of *hrpB*-regulated gene products. *Microbiology-Sgm* 155:2235-2244.
272. Cascales E (2008) The type VI secretion toolkit. *Embo Reports* 9(8):735-741.
273. Filloux A, Hachani A, & Bleves S (2008) The bacterial type VI secretion machine: yet another player for protein transport across membranes. *Microbiology-Sgm* 154:1570-1583.
274. Beeckman DSA & Vanrompay DCG (2010) Bacterial Secretion Systems with an Emphasis on the Chlamydial Type III Secretion System. *Current Issues in Molecular Biology* 12:17-41.
275. Fauvert M & Michiels J (2008) Rhizobial secreted proteins as determinants of host specificity in the rhizobium-legume symbiosis. *Fems Microbiology Letters* 285(1):1-9.
276. Argüelles JC (2000) Physiological roles of trehalose in bacteria and yeasts: a comparative analysis. *Archives of Microbiology* 174(4):217-224.
277. Terashima H, Kojima S, & Homma M (2008) Flagellar motility in bacteria: structure and function of flagellar motor. *International Review of Cell and Molecular Biology* Vol 270, pp 39-85.
278. Jarrell KF & McBride MJ (2008) The surprisingly diverse ways that prokaryotes move. *Nature Reviews Microbiology* 6(6):466-476 .
279. Scholz-Schroeder BK, Soule JD, Lu SE, Grgurina I, & Gross DC (2001) A physical map of the syringomycin and syringopeptin gene clusters localized to an approximately 145-kb DNA region of *Pseudomonas syringae* pv. *syringae* strain B301D. *Molecular Plant-Microbe Interactions* 14(12):1426-1435.
280. Raaijmakers JM, de Bruijn I, & de Kock MJD (2006) Cyclic lipopeptide production by plant-associated *Pseudomonas* spp.: diversity, activity, biosynthesis, and regulation. *Molecular Plant-Microbe Interactions* 19(7):699-710.

Bibliography

281. Hasman H, Schembri MA, & Klemm P (2000) Antigen 43 and type 1 fimbriae determine colony morphology of *Escherichia coli* K-12. *Journal of Bacteriology* 182(4):1089-1095.
282. Long CD, Madraswala RN, & Seifert HS (1998) Comparisons between colony phase variation of *Neisseria gonorrhoeae* FA1090 and pilus, pilin, and S-pilin expression. *Infection and Immunity* 66(5):1918-1927.
283. Poolman JT, Hopman CTP, & Zanen HC (1985) Colony variants of *Neisseria meningitidis* strain 2996 (b-2b-p1-2) - influence of class-5 outer-membrane proteins and lipopolysaccharides. *Journal of Medical Microbiology* 19(2):203-209.
284. Jones KM, et al. (2008) Differential response of the plant *Medicago truncatula* to its symbiont *Sinorhizobium meliloti* or an exopolysaccharide-deficient mutant. *Proceedings of the National Academy of Sciences of the United States of America* 105(2):704-709.
285. Fritzsche K et al. Manuscript in preparation.
286. Mela F, et al. (2008) Comparative genomics of the pIPO2/pSB102 family of environmental plasmids: sequence, evolution, and ecology of pTer331 isolated from *Collimonas fungivorans* Ter331. *Fems Microbiology Ecology* 66(1):45-62.
287. Ito H & Iizuka H (1971) Taxonomic studies on a radio-resistant *Pseudomonas*. Part XII. studies on microorganisms of cereal grain. *Agricultural and Biological Chemistry* 35(10):1566-1571.