Bibliography

AENDEKERK, S., DIGGLE, S. P., SONG, Z., HOIBY, N., CORNELIS, P., WILLIAMS, P. & CAMARA, M. 2005. The MexGHI-OpmD multidrug efflux pump controls growth, antibiotic susceptibility and virulence in *Pseudomonas aeruginosa* via 4-quinolone-dependent cell-to-cell communication. *Microbiology,* 151**,** 1113-1125.

AISLABIE, J., BEJ, A. K., HURST, H. & ROTHENBURGER, S. 1990. Microbial Degradation of Quinoline and Methylquinolines. *Applied and Environmental Microbiology,* 56**,** 345-351.

ANDERSEN, J. B., STERNBERG, C., POULSEN, L. K., BJORN, S. P., GIVSKOV, M. & MOLIN, S. 1998. New Unstable Variants of Green Fluorescent Protein for Studies of Transient Gene Expression in Bacteria. *Appl. Environ. Microbiol.,* 64**,** 2240-2246.

BAUER, I., DE BEYER, A., TSHISUAKA, B., FETZNER, S. & LINGENS, F. 1994. A novel type of oxygenolytic ring cleavage: 2,4-oxygenation and decarbonylation of 1H-3-hydroxy-4-oxoquinaldine and 1H-3-hydroxy-4-oxoquinoline. *FEMS Microbiology Letters,* 117**,** 299-304.

BAUER, I., MAX, N., FETZNER, S. & LINGENS, F. 1996. 2,4-Dioxygenases Catalyzing N-Heterocyclic-ring cleavage and formation of carbon monoxide. *European Journal of Biochemistry,* 240**,** 576-583.

BJARNSHOLT, T., VAN GENNIP, M., JAKOBSEN, T. H., CHRISTENSEN, L. D., JENSEN, P. O. & GIVSKOV, M. 2010. In vitro screens for quorum sensing inhibitors and in vivo confirmation of their effect. *Nat. Protocols,* 5**,** 282-293.

BOEKE, J. D., CROUTE, F. & FINK, G. R. 1984. A positive selection for mutants lacking orotidine-5′-phosphate decarboxylase activity in yeast: 5-fluoro-orotic acid resistance. *Molecular and General Genetics MGG,* 197**,** 345-346.

BOTT, G. & LINGENS, F. 1991. Degradation of 6-Hydroxyquinoline and Quinoline by *Pseudomonas diminuta* 31/1 Fa1 and *Bacillus circulans* 31/2 A1. *Biol. Chem. Hoppe-Seyler,* 372**,** 381-383.

BRINT, J. M. & OHMAN, D. E. 1995. Synthesis of multiple exoproducts in *Pseudomonas aeruginosa* is under the control of RhlR-RhlI, another set of regulators in strain PAO1 with homology to the autoinducer-responsive LuxR-LuxI family. *J. Bacteriol.,* 177**,** 7155-7163.

BROCKMAN, F. J., DENOVAN, B. A., HICKS, R. J. & FREDERICKSON, J. K. 1989. Isolation and characterization of quinoline degrading bacteria from subsurface sediments. *Appl. Environ. Microbiol.,* 55**,** 1029-1032.

CALFEE, M. W., COLEMAN, J. P. & PESCI, E. C. 2001. Interference with *Pseudomonas* quinolone signal synthesis inhibits virulence factor expression by *Pseudomonas aeruginosa*. *Proceedings of the National Academy of Sciences of the United States of America,* 98**,** 11633-11637.

CALFEE, M. W., SHELTON, J. G., MCCUBREY, J. A. & PESCI, E. C. 2005. Solubility and Bioactivity of the Pseudomonas Quinolone Signal Are Increased by a *Pseudomonas aeruginosa*-Produced Surfactant. *Infect. Immun.,* 73**,** 878-882.

CAO, H., KRISHNAN, G., GOUMNEROV, B., TSONGALIS, J., TOMPKINS, R. & RAHME, L. 2001. A quorum sensing-associated virulence gene of *Pseudomonas aeruginosa* encodes a LysR-like transcription regulator with a unique self-regulatory mechanism. *Proc Natl Acad Sci U S A,* 98**,** 14613 - 14618.

CARLIER, A., UROZ, S., SMADJA, B., FRAY, R., LATOUR, X., DESSAUX, Y. & FAURE, D. 2003. The Ti Plasmid of *Agrobacterium tumefaciens* Harbors an attM-Paralogous Gene, aiiB, Also Encoding N-Acyl Homoserine Lactonase Activity. *Appl. Environ. Microbiol.,* 69**,** 4989-4993.

CHAN, K.-G., YIN, W.-F., SAM, C.-K. & KOH, C.-L. 2009. A novel medium for the isolation of *N*-acylhomoserine lactone-degrading bacteria. *Journal of Industrial Microbiology & Biotechnology,* 36**,** 247-251.

CHAUDHURI, B. K. & WIESMANN, U. 1995. Enhanced anaerobic degradation of benzene by enrichment of mixed microbial culture and optimization of the culture medium. *Applied Microbiology and Biotechnology,* 43**,** 178-187.

COLLIER, D. N., ANDERSON, L., MCKNIGHT, S. L., NOAH, T. L., KNOWLES, M., BOUCHER, R., SCHWAB, U., GILLIGAN, P. & PESCI, E. C. 2002. A bacterial cell to cell signal in the lungs of cystic fibrosis patients. *FEMS Microbiology Letters,* 215**,** 41-46.

DAVIES, D. G., PARSEK, M. R., PEARSON, J. P., IGLEWSKI, B. H., COSTERTON, J. W. & GREENBERG, E. P. 1998. The Involvement of Cell-to-Cell Signals in the Development of a Bacterial Biofilm. *Science,* 280**,** 295-298.

DEZIEL, E., GOPALAN, S., TAMPAKAKI, A., LEPINE, F., PADFIELD, K., SAUCIER, M., XIAO, G. & RAHME, L. 2005. The contribution of MvfR to *Pseudomonas aeruginosa* pathogenesis and quorum sensing circuitry regulation: multiple quorum sensing-regulated genes are modulated without affecting lasRI, rhlRI or the production of N-acyl-L-homoserine lactones. *Mol Microbiol,* 55**,** 998 - 1014.

DÉZIEL, E., LÉPINE, F., MILOT, S., HE, J., MINDRINOS, M. N., TOMPKINS, R. G. & RAHME, L. G. 2004. Analysis of *Pseudomonas aeruginosa* 4-hydroxy-2-alkylquinolines (HAQs) reveals a role for 4-hydroxy-2-heptylquinoline in cell-to-cell communication. *Proceedings of the National Academy of Sciences of the United States of America,* 101**,** 1339-1344.

DIGGLE, S. P., MATTHIJS, S., WRIGHT, V. J., FLETCHER, M. P., CHHABRA, S. R., LAMONT, I. L., KONG, X., HIDER, R. C., CORNELIS, P., CÁMARA, M. & WILLIAMS, P. 2007. The *Pseudomonas aeruginosa* 4-Quinolone Signal Molecules HHQ and PQS Play Multifunctional Roles in Quorum Sensing and Iron Entrapment. 14**,** 87-96.

DIGGLE, S. P., WINZER, K., CHHABRA, S. R., WORRALL, K. E., CÁMARA, M. & WILLIAMS, P. 2003. The *Pseudomonas aeruginosa* quinolone signal molecule overcomes the cell density-dependency of the quorum sensing hierarchy, regulates rhl-dependent genes at the onset of stationary phase and can be produced in the absence of LasR. *Molecular Microbiology,* 50**,** 29-43.

DONG, Y.-H., GUSTI, A. R., ZHANG, Q., XU, J.-L. & ZHANG, L.-H. 2002. Identification of Quorum-Quenching *N*-Acyl Homoserine Lactonase from *Bacillus* Species. *Applied and Environmental Microbiology,* 68**,** 1754-1759.

DONG, Y.-H., WANG, L.-H., XU, J.-L., ZHANG, H.-B., ZHANG, X.-F. & ZHANG, L.-H. 2001. Quenching quorum-sensing-dependent bacterial infection by an N-acyl homoserine lactonase. *Nature,* 411**,** 813-817.

DONG, Y.-H., WANG, L.-H. & ZHANG, L.-H. 2007. Quorum-quenching microbial infections: mechanisms and implications. *Philosophical Transactions of the Royal Society B: Biological Sciences,* 362**,** 1201-1211.

DONG, Y.-H., XU, J.-L., LI, X.-Z. & ZHANG, L.-H. 2000. AiiA, an enzyme that inactivates the acylhomoserine lactone quorum-sensing signal and attenuates the virulence of Erwinia carotovora. *Proceedings of the National Academy of Sciences of the United States of America,* 97**,** 3526-3531.

DUBERN, J.-F. & DIGGLE, S. P. 2008. Quorum sensing by 2-alkyl-4-quinolones in Pseudomonas aeruginosa and other bacterial species. *Molecular BioSystems,* 4**,** 882-888.

EBERHARD, A., BURLINGAME, A. L., EBERHARD, C., KENYON, G. L., NEALSON, K. H. & OPPENHEIMER, N. J. 1981. Structural identification of autoinducer of *Photobacterium fischeri* luciferase. *Biochemistry,* 20**,** 2444-2449.

FELSENSTEIN, J. 1985. Confidence Limits on Phylogenies: An Approach Using the Bootstrap. *Evolution,* 39**,** 9.

FETZNER, S. 2000. Enzymes Involved in the Aerobic Bacterial Degradation of *N*-Heteroaromatic Compounds: Molybdenum Hydroxylases and Ring-Opening 2,4-Dioxygenases. *Naturwissenschaften,* 87**,** 59-69.

FISCHER, F., KUNNE, S. & FETZNER, S. 1999. Bacterial 2,4-Dioxygenases: New Members of the alpha /beta Hydrolase-Fold Superfamily of Enzymes Functionally Related to Serine Hydrolases. *J. Bacteriol.,* 181**,** 5725-5733.

FLAGAN, S., CHING, W.-K. & LEADBETTER, J. R. 2003. Arthrobacter Strain VAI-A Utilizes Acyl-Homoserine Lactone Inactivation Products and Stimulates Quorum Signal Biodegradation by Variovorax paradoxus. *Appl. Environ. Microbiol.,* 69**,** 909-916.

FLETCHER, M. P., DIGGLE, S. P., CRUSZ, S. A., CHHABRA, S. R., CÁMARA, M. & WILLIAMS, P. 2007. A dual biosensor for 2-alkyl-4-quinolone quorum-sensing signal molecules. *Environmental Microbiology,* 9**,** 2683-2693.

FUQUA, W. C., WINANS, S. C. & GREENBERG, E. P. 1994. Quorum sensing in bacteria: the LuxR/LuxI family of cell density-responsive Transcriptional Regulators. *J. Bacteriol.,* 176**,** 269-275.

GALLAGHER, L. A., MCKNIGHT, S. L., KUZNETSOVA, M. S., PESCI, E. C. & MANOIL, C. 2002. Functions Required for Extracellular Quinolone Signaling by *Pseudomonas aeruginosa*. *J. Bacteriol.,* 184**,** 6472-6480.

GAMBELLO, M. J. & IGLEWSKI, B. H. 1991. Cloning and characterization of the *Pseudomonas aeruginosa lasR* gene, a transcriptional activator of elastase expression. *J. Bacteriol.,* 173**,** 3000-3009.

GARDINER, S. M., CHHABRA, S. R., HARTY, C., WILLIAMS, P., PRITCHARD, D. I., BYCROFT, B. W. & BENNETT, T. 2001. Haemodynamic effects of the bacterial quorum sensing signal molecule, N-(3-oxododecanoyl)-L-homoserine lactone, in conscious, normal and endotoxaemic rats. *British Journal of Pharmacology,* 133**,** 1047-1054.

GAY, P., LE COQ, D., STEINMETZ, M., FERRARI, E. & HOCH, J. A. 1983. Cloning structural gene *sacB*, which codes for exoenzyme levansucrase of *Bacillus subtilis*: expression of the gene in *Escherichia coli*. *J. Bacteriol.,* 153**,** 1424-1431.

GIAVALISCO, P., HUMMEL, J., LISEC, J., INOSTROZA, A. C., CATCHPOLE, G. & WILLMITZER, L. 2008. High-Resolution Direct Infusion-Based Mass Spectrometry in Combination with Whole 13C Metabolome Isotope Labeling Allows Unambiguous Assignment of Chemical Sum Formulas. *Analytical Chemistry,* 80**,** 9417-9425.

GIRBAL, L., ROLS, J.-L. & LINDLEY, N. D. 2000. Growth rate influences reductive biodegradation of the organophosphorus pesticide demeton by *Corynebacterium glutamicum*. *Biodegradation,* 11**,** 371-376.

GOVAN, J. & DERETIC, V. 1996. Microbial pathogenesis in cystic fibrosis: mucoid *Pseudomonas aeruginosa* and *Burkholderia cepaci*a. *Microbiol. Rev.,* 60**,** 539-574.

GOVAN, J. R. W., GREENWOOD, D., R.C.B., S. & PEUTHERER, J. F. 2003. *Pseudomonads and non-fermenters*, Churchill Livingstone.

GRANT, D. J. W. & AL-NAJJAR, T. R. 1976. Degradation of quinoline by a soil bacterium. *Microbios,* 15**,** 177-189.

GRANT, R. & BETTS, W. 2004. Mineral and carbon usage of two synthetic pyrethroid degrading bacterial isolates. *Journal of Applied Microbiology,* 97**,** 656-662.

GUINA, T., WU, M., MILLER, S. I., PURVINE, S. O., YI, E. C., ENG, J., GOODLETT, D. R., AEBERSOLD, R., ERNST, R. K. & LEE, K. A. 2003. Proteomic analysis of *Pseudomonas aeruginosa* grown under magnesium limitation. *Journal of the American Society for Mass Spectrometry,* 14**,** 742-751.

GUO, W., LI, D., TAO, Y., GAO, P. & HU, J. 2008. Isolation and Description of a Stable Carbazole-Degrading Microbial Consortium Consisting of *Chryseobacterium* sp. NCY and *Achromobacte*r sp NCW. *Current Microbiology,* 57**,** 251-257.

HARDER, W., DIJKHUIZEN, L. & POSTGATE, J. R. 1982. Strategies of Mixed Substrate Utilization in Microorganisms [and Discussion]. *Philosophical Transactions of the Royal Society of London. B, Biological Sciences,* 297**,** 459-480.

HÄUSSLER, S. & BECKER, T. 2008. The Pseudomonas Quinolone Signal (PQS) Balances Life and Death in *Pseudomonas aeruginosa*Populations. *PLoS Pathog,* 4**,** e1000166.

HENTZER, M., RIEDEL, K., RASMUSSEN, T. B., HEYDORN, A., ANDERSEN, J. B., PARSEK, M. R., RICE, S. A., EBERL, L., MOLIN, S., HOIBY, N., KJELLEBERG, S. & GIVSKOV, M. 2002. Inhibition of quorum sensing in *Pseudomonas aeruginosa* biofilm bacteria by a halogenated furanone compound. *Microbiology,* 148**,** 87-102.

HUANG, J. J., HAN, J.-I., ZHANG, L.-H. & LEADBETTER, J. R. 2003. Utilization of Acyl-Homoserine Lactone Quorum Signals for Growth by a Soil Pseudomonad and *Pseudomonas aeruginosa* PAO1. *Appl. Environ. Microbiol.,* 69**,** 5941-5949.

JANDER, G., RAHME, L. G. & AUSUBEL, F. M. 2000. Positive Correlation between Virulence of *Pseudomonas aeruginosa* Mutants in Mice and Insects. *J. Bacteriol.,* 182**,** 3843-3845.

JENSEN, P. R., KAUFFMAN, C. A. & FENICAL, W. 1996. High recovery of culturable bacteria from the surfaces of marine algae. *Marine Biology,* 126**,** 1-7.

LATIFI, A., FOGLINO, M., TANAKA, K., WILLIAMS, P. & LAZDUNSKI, A. 1996. A hierarchical quorum-sensing cascade in *Pseudomonas aeruginosa* links the transcriptional activators LasR and RhIR (VsmR) to expression of the stationary-phase sigma factor RpoS. *Molecular Microbiology,* 21**,** 1137-1146.

LATIFI, A., WINSON, M. K., FOGLINO, M., BYCROFT, B. W., STEWART, G. S. A. B., LAZDUNSKI, A. & WILLIAMS, P. 1995. Multiple homologues of LuxR and LuxI control expression of virulence determinants and secondary metabolites through quorum sensing in *Pseudomonas aeruginosa* PAO1. *Molecular Microbiology,* 17**,** 333-343.

LEADBETTER, J. R. & GREENBERG, E. P. 2000. Metabolism of Acyl-Homoserine Lactone Quorum-Sensing Signals by *Variovorax paradoxus. J. Bacteriol.,* 182**,** 6921-6926.

LEE, S. J., PARK, S.-Y., LEE, J.-J., YUM, D.-Y., KOO, B.-T. & LEE, J.-K. 2002. Genes Encoding the N-Acyl Homoserine Lactone-Degrading Enzyme Are Widespread in Many Subspecies of *Bacillus thuringiensi*s. *Appl. Environ. Microbiol.,* 68**,** 3919-3924.

LÉPINE, F., DÉZIEL, E., MILOT, S. & RAHME, L. G. 2003. A stable isotope dilution assay for the quantification of the Pseudomonas quinolone signal in *Pseudomonas aeruginosa* cultures. *Biochimica et Biophysica Acta (BBA) - General Subjects,* 1622**,** 36-41.

LÉPINE, F., MILOT, S., DÉZIEL, E., HE, J. & RAHME, L. G. 2004. Electrospray/mass spectrometric identification and analysis of 4-hydroxy-2-alkylquinolines (HAQs) produced by *Pseudomonas aeruginosa*. *Journal of the American Society for Mass Spectrometry,* 15**,** 862-869.

LESIC, B., LÉPINE, F., DÉZIEL, E., ZHANG, J., ZHANG, Q., PADFIELD, K., CASTONGUAY, M.-H., MILOT, S., STACHEL, S., TZIKA, A. A., TOMPKINS, R. G. & RAHME, L. G. 2007. Inhibitors of Pathogen Intercellular Signals as Selective Anti-Infective Compounds. *PLoS Pathog,* 3**,** e126.

LYCZAK, J. B., CANNON, C. L. & PIER, G. B. 2000. Establishment of *Pseudomonas aeruginosa* infection: lessons from a versatile opportunist. *Microbes and Infection,* 2**,** 1051-1060.

MACHAN, Z. A., TAYLOR, G. W., PITT, T. L., COLE, P. J. & WILSON, R. 1992. 2-Heptyl-4-hydroxyquinoline *N*-oxide, an antistaphylococcal agent produced by *Pseudomonas aeruginosa*. *Journal of Antimicrobial Chemotherapy,* 30**,** 615-623.

MAIER, R. M., PEPPER, I. L. & GERBA, C. P. 2009. *Environmental Microbiology*Academic Press, Elsevier.

MARTINEZ, J. L. & BAQUERO, F. 2002. Interactions among Strategies Associated with Bacterial Infection: Pathogenicity, Epidemicity, and Antibiotic Resistance. *Clin. Microbiol. Rev.,* 15**,** 647-679.

MCGRATH, S., WADE, D. S. & PESCI, E. C. 2004. Dueling quorum sensing systems in *Pseudomonas aeruginosa* control the production of the Pseudomonas quinolone signal (PQS). *FEMS Microbiology Letters,* 230**,** 27-34.

MCKNIGHT, S. L., IGLEWSKI, B. H. & PESCI, E. C. 2000. The Pseudomonas Quinolone Signal Regulates rhl Quorum Sensing in *Pseudomonas aeruginosa*. *J. Bacteriol.,* 182**,** 2702-2708.

MILTON, D., O'TOOLE, R., HORSTEDT, P. & WOLF-WATZ, H. 1996. Flagellin A is essential for the virulence of *Vibrio anguillarum*. *J. Bacteriol.,* 178**,** 1310-1319.

MULLEN, W., LARCOMBE, S., ARNOLD, K., WELCHMAN, H. & CROZIER, A. 2009. Use of Accurate Mass Full Scan Mass Spectrometry for the Analysis of Anthocyanins in Berries and Berry-Fed Tissues†. *Journal of Agricultural and Food Chemistry,* 58**,** 3910-3915.

NEALSON, K. H., PLATT, T. & HASTINGS, J. W. 1970. Cellular Control of the Synthesis and Activity of the Bacterial Luminescent System. *J. Bacteriol.,* 104**,** 313-322.

O'LOUGHLIN, E. J., KEHRMEYER, S. R. & SIMS, G. K. 1996. Isolation, Characteriation, and Substrate Utilization of a Quinoline-Degrading Bacterium. *International Biodeterioration & Biodegradation*, 107-118.

OVERHAGE, J., SIELKER, S., HOMBURG, S., PARSCHAT, K. & FETZNER, S. 2005. Identification of large linear plasmids in Arthrobacter spp. encoding the degradation of quinaldine to anthranilate. *Microbiology,* 151, 491-500.

PALMER, K. L., MASHBURN, L. M., SINGH, P. K. & WHITELEY, M. 2005. Cystic Fibrosis Sputum Supports Growth and Cues Key Aspects of *Pseudomonas aeruginosa* Physiology. *J. Bacteriol.,* 187, 5267-5277.

PARK, S.-Y., LEE, S. J., OH, T.-K., OH, J.-W., KOO, B.-T., YUM, D.-Y. & LEE, J.-K. 2003. AhlD, an N-acylhomoserine lactonase in *Arthrobacter sp*., and predicted homologues in other bacteria. *Microbiology,* 149, 1541-1550.

PARSCHAT, K., OVERHAGE, J., STRITTMATTER, A. W., HENNE, A., GOTTSCHALK, G. & FETZNER, S. 2007. Complete Nucleotide Sequence of the 113-Kilobase Linear Catabolic Plasmid pAL1 of *Arthrobacter nitroguajacolicus* Ru61a and Transcriptional Analysis of Genes Involved in Quinaldine Degradation. *J. Bacteriol.,* 189, 3855-3867.

PASSADOR, L., COOK, J., GAMBELLO, M., RUST, L. & IGLEWSKI, B. 1993. Expression of *Pseudomonas aeruginosa* virulence genes requires cell-to-cell communication. *Science,* 260, 1127-1130.

PEARSON, J., PESCI, E. & IGLEWSKI, B. 1997. Roles of *Pseudomonas aeruginos*a las and rhl quorum-sensing systems in control of elastase and rhamnolipid biosynthesis genes. *J. Bacteriol.,* 179, 5756-5767.

PEARSON, J. P., GRAY, K. M., PASSADOR, L., TUCKER, K. D., EBERHARD, A., IGLEWSKI, B. H. & GREENBERG, E. P. 1994. Structure of the autoinducer required for expression of *Pseudomonas aeruginosa* virulence genes. *Proceedings of the National Academy of Sciences,* 91, 197-201.

PEARSON, J. P., PASSADOR, L., IGLEWSKI, B. H. & GREENBERG, E. P. 1995. A second N-acylhomoserine lactone signal produced by *Pseudomonas aeruginosa*. *Proceedings of the National Academy of Sciences of the United States of America,* 92**,** 1490-1494.

PEREIRA, W. E., ROSTAD, C. E., LEIKER, T. J., UPDEGRAFF, D. M. & BENNETT, J. L. 1988. Microbial Hydroxylation of Quinoline in Contaminated Groundwater: Evidence for Incorporation of the Oxygen Atom of Water. *Applied and Environmental Microbiology,* 54**,** 827-829.

PESCI, E. C., MILBANK, J. B. J., PEARSON, J. P., MCKNIGHT, S., KENDE, A. S., GREENBERG, E. P. & IGLEWSKI, B. H. 1999. Quinolone signaling in the cell-to-cell communication system of *Pseudomonas aeruginosa*. *Proceedings of the National Academy of Sciences of the United States of America,* 96**,** 11229-11234.

PESSI, G. & HAAS, D. 2000. Transcriptional Control of the Hydrogen Cyanide Biosynthetic Genes hcnABC by the Anaerobic Regulator ANR and the Quorum-Sensing Regulators LasR and RhlR in *Pseudomonas aeruginosa*. *J. Bacteriol.,* 182**,** 6940-6949.

PETTIGREW, C. A., BREEN, A., CORCORAN, C. & SAYLER, G. S. 1990. Chlorinated Biphenyl Mineralization by Individual Populations and onsortia of Freshwater Bacteria. *Appl. Environ. Microbiol.,* 56**,** 2036-2045.

PUSTELNY, C., ALBERS, A., BÜLDT-KARENTZOPOULOS, K., PARSCHAT, K., CHHABRA, S. R., CÁMARA, M., WILLIAMS, P. & FETZNER, S. 2009. Dioxygenase-Mediated Quenching of Quinolone-Dependent Quorum Sensing in *Pseudomonas aeruginosa*. *Chemistry & Biology,* 16**,** 1259-1267.

RASMUSSEN, T. B., BJARNSHOLT, T., SKINDERSOE, M. E., HENTZER, M., KRISTOFFERSEN, P., KOTE, M., NIELSEN, J., EBERL, L. & GIVSKOV, M. 2005. Screening for Quorum-Sensing Inhibitors (QSI) by Use of a Novel Genetic System, the QSI Selector. *J. Bacteriol.,* 187**,** 1799-1814.

RASMUSSEN, T. B., MANEFIELD, M., ANDERSEN, J. B., EBERL, L., ANTHONI, U., CHRISTOPHERSEN, C., STEINBERG, P., KJELLEBERG, S. & GIVSKOV, M. 2000. How *Delisea pulchr*a furanones affect quorum sensing and swarming motility in Serratia liquefaciens MG1. *Microbiology,* 146**,** 3237-3244.

REYRAT, J.-M., PELICIC, V., GICQUEL, B. & RAPPUOLI, R. 1998. Counterselectable Markers: Untapped Tools for Bacterial Genetics and Pathogenesis. *Infect. Immun.,* 66**,** 4011-4017.

RÖGER, P., ERBEN, A. & LINGENS, F. 1990. Degradation of Isoquinoline by *Alcaligenes faecalis* Pa and *Pseudomonas diminuta* 7. *Biol. Chem. Hoppe-Seyler,* 371**,** 511-513.

ROTHENBURGER, S. & ATLAS, R. M. 1993. Hydroxylation and Biodegradation of 6-Methylquinoline by Pseudomonads in Aqueous and Nonaqueous Immbolized-Cell Bioreactors. *Applied and Environmental Microbiology,* 59**,** 2139-2144.

RÜGER, A., SCHWARZ, G. & LINGENS, F. 1993. Degradation of 4-Methylquinolone and Quinoline by *Pseudomonas putida* K1. *Biol. Chem. Hoppe-Seyler,* 374**,** 479-488.

RUMBAUGH, K. P., GRISWOLD, J. A., IGLEWSKI, B. H. & HAMOOD, A. N. 1999. Contribution of Quorum Sensing to the Virulence of *Pseudomonas aeruginosa* in Burn Wound Infections. *Infect. Immun.,* 67**,** 5854-5862.

RUST, L., PESCI, E. & IGLEWSKI, B. 1996. Analysis of the *Pseudomonas aeruginosa* elastase (lasB) regulatory region. *J. Bacteriol.,* 178**,** 1134-1140.

SAIMAN, L., CHEN, Y., TABIBI, S., SAN GABRIEL, P., ZHOU, J., LIU, Z., LAI, L. & WHITTIER, S. 2001. Identification and Antimicrobial Susceptibility of *Alcaligenes xylosoxidans* Isolated from Patients with Cystic Fibrosis. *J. Clin. Microbiol.,* 39**,** 3942-3945.

SAITOU, N. & NEI, M. 1987. The neighbor-joining method: a new method for reconstructing phylogenetic trees. *Molecular Biology and Evolution,* 4**,** 406-425.

SALMOND, G. P. C., BYCROFT, B. W., STEWART, G. S. A. B. & WILLIAMS, P. 1995. The bacterial 'enigma': cracking the code of cell–cell communication. *Molecular Microbiology,* 16**,** 615-624.

SAMBROOK, J., FRITSCH, E. F. & MANIATIS, T. 1989. *Molecular cloning – A laboratory manual. ,* Cold Spring Harbor, USA, Cold Spring Harbor Laboratory Press.

SCHACH, S., SCHWARZ, G., FETZNER, S. & LINGENS, F. 1993. Degradation of 3-Methylquinoline by *Comamonas testosteron*i 63. *Biol. Chem. Hoppe-Seyler,* 374**,** 175-181.

SCHUSTER, M., LOSTROH, C. P., OGI, T. & GREENBERG, E. P. 2003. Identification, Timing, and Signal Specificity of *Pseudomonas aeruginosa* Quorum-Controlled Genes: a Transcriptome Analysis. *J. Bacteriol.,* 185**,** 2066-2079.

SCHWARZ, G., BAUDER, R., SPEER, M. & ROMMEL, T. O. 1989. Degradation of Quinoline by *Pseudomonas fluorescens* 3, *Pseudomonas putida* 86 and *Rhodococcus spec.* B1. *Biol. Chem. Hoppe-Seyler,* 370**,** 1183-1189.

SHUKLA, O. P. 1986. Microbial Transformation of Quinoline by a *Pseudomonas sp. Applied and Environmental Microbiology,* 51**,** 1332-1342.

SHUKLA, O. P. 1989. Microbiological degradation of quinoline by *Pseudomonas stutzeri*: the coumarin pathway of quinoline catabolism. *Microbios,* 59**,** 47-63.

SIMON, R., PRIEFER, U. & PUHLER, A. 1983. A Broad Host Range Mobilization System for In Vivo Genetic Engineering: Transposon Mutagenesis in Gram Negative Bacteria. *Nat Biotech,* 1**,** 784-791.

SMITH, K. M., BU, Y. & SUGA, H. 2003. Induction and Inhibition of *Pseudomonas aeruginosa* Quorum Sensing by Synthetic Autoinducer Analogs. *Chemistry & biology,* 10**,** 81-89.

SMITH, R. S., HARRIS, S. G., PHIPPS, R. & IGLEWSKI, B. 2002. The *Pseudomonas aeruginosa* Quorum-Sensing Molecule N-(3-Oxododecanoyl)Homoserine Lactone Contributes to Virulence and Induces Inflammation In Vivo. *J. Bacteriol.,* 184**,** 1132-1139.

STEIDLE, A., SIGL, K., SCHUHEGGER, R., IHRING, A., SCHMID, M., GANTNER, S., STOFFELS, M., RIEDEL, K., GIVSKOV, M., HARTMANN, A., LANGEBARTELS, C. & EBERL, L. 2001. Visualization of N-Acylhomoserine Lactone-Mediated Cell-Cell Communication between Bacteria Colonizing the Tomato Rhizosphere. *Appl. Environ. Microbiol.,* 67**,** 5761-5770.

STINTZI, A., EVANS, K., MEYER, J.-M. & POOLE, K. 1998. Quorum-sensing and siderophore biosynthesis in *Pseudomonas aeruginosa*: *lasRlasI* mutants exhibit reduced pyoverdine biosynthesis. *FEMS Microbiology Letters,* 166**,** 341-345.

SUN, Q., BAI, Y., ZHAO, C., XIAO, Y., WEN, D. & TANG, X. 2009. Aerobic biodegradation characteristics and metabolic products of quinoline by a *Pseudomonas* strain. *Bioresource Technology,* 100**,** 5030-5036.

SUTTON, S., PFALLER, S., SHANN, J., WARSHAWSKY, D., KINKLE, B. & VESTAL, J. 1996. Aerobic biodegradation of 4-methylquinoline by a soil bacterium. *Appl. Environ. Microbiol.,* 62**,** 2910-2914.

TAMURA, K., DUDLEY, J., NEI, M. & KUMAR, S. 2007. MEGA4: Molecular Evolutionary Genetics Analysis (MEGA) Software Version 4.0. *Molecular Biology and Evolution,* 24**,** 1596-1599.

UROZ, S., CHHABRA, S. R., CAMARA, M., WILLIAMS, P., OGER, P. & DESSAUX, Y. 2005. N-Acylhomoserine lactone quorum-sensing molecules are modified and degraded by *Rhodococcus erythropolis* W2 by both amidolytic and novel oxidoreductase activities. *Microbiology,* 151**,** 3313-3322.

UROZ, S., D'ANGELO-PICARD, C., CARLIER, A., ELASRI, M., SICOT, C., PETIT, A., OGER, P., FAURE, D. & DESSAUX, Y. 2003. Novel bacteria degrading N-acylhomoserine lactones and their use as quenchers of quorum-sensing-regulated functions of plant-pathogenic bacteria. *Microbiology,* 149**,** 1981-1989.

VAN DELDEN, C. 2004. *Virulence factors in Pseudomonas aeruginosa,* New York, Kluwer Academic.

WADE, D. S., CALFEE, M. W., ROCHA, E. R., LING, E. A., ENGSTROM, E., COLEMAN, J. P. & PESCI, E. C. 2005. Regulation of Pseudomonas Quinolone Signal Synthesis in *Pseudomonas aeruginosa*. *J. Bacteriol.,* 187**,** 4372-4380.

WAGNER, V. E., BUSHNELL, D., PASSADOR, L., BROOKS, A. I. & IGLEWSKI, B. H. 2003. Microarray Analysis of *Pseudomonas aeruginosa* Quorum-Sensing Regulons: Effects of Growth Phase and Environment. *J. Bacteriol.,* 185**,** 2080-2095.

WANG, Y.-J. & LEADBETTER, J. R. 2005. Rapid Acyl-Homoserine Lactone Quorum Signal Biodegradation in Diverse Soils. *Appl. Environ. Microbiol.,* 71**,** 1291-1299.

WENTZEL, A., ELLINGSEN, T., KOTLAR, H.-K., ZOTCHEV, S. & THRONE-HOLST, M. 2007. Bacterial metabolism of long-chain *n*-alkanes. *Applied Microbiology and Biotechnology,* 76**,** 1209-1221.

WHITEHEAD, N. A., BARNARD, A. M. L., SLATER, H., SIMPSON, N. J. L. & SALMOND, G. P. C. 2001. Quorum-sensing in Gram-negative bacteria. *FEMS Microbiology Reviews,* 25**,** 365-404.

WHITELEY, M. & GREENBERG, E. P. 2001. Promoter Specificity Elements in *Pseudomonas aeruginosa* Quorum-Sensing-Controlled Genes. *J. Bacteriol.,* 183**,** 5529-5534.

WINSON, M. K., CAMARA, M., LATIFI, A., FOGLINO, M., CHHABRA, S. R., DAYKIN, M., BALLY, M., CHAPON, V., SALMOND, G. P. & BYCROFT, B. W. 1995. Multiple N-acyl-L-homoserine lactone signal molecules regulate production of virulence determinants and secondary metabolites in *Pseudomonas aeruginosa*. *Proceedings of the National Academy of Sciences of the United States of America,* 92**,** 9427-9431.

XIAO, G., HE, J. & RAHME, L. G. 2006. Mutation analysis of the *Pseudomonas aeruginosa mvfR* and *pqsABCDE* gene promoters demonstrates complex quorum-sensing circuitry. *Microbiology,* 152**,** 1679-1686.

ZHANG, C., ZENG, G., YUAN, L., YU, J., LI, J., HUANG, G., XI, B. & LIU, H. 2007. Aerobic degradation of bisphenol A by *Achromobacter xylosoxidans strain* B-16 isolated from compost leachate of municipal solid waste. *Chemosphere,* 68**,** 181-190.

ZHU, S.-N., LIU, D.-Q., FAN, L. & NI, J.-R. 2008. Degradation of quinoline by *Rhodococcus* sp. QL2 isolated from activated sludge. *Journal of Hazardous Materials,* 160**,** 289-294.