

**NAME:**

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Short Professional Biography:

Gilles van Wezel is Professor of Molecular Biotechnology and Director of the Institute of Biology, Leiden University, The Netherlands. He is also Honorary Fellow at the Royal Academy institute NIOO-KNAW in Wageningen. Van Wezel is member of the board of the Netherlands Antibiotic Development Platform (NADP) of the Ministry of Health and of the supervisory board of Netherlands Centre for One Health (NCOH). In 2000, he was awarded a research fellowship from the Royal Netherlands Academy (KNAW), and became assistant professor in 2004. He co-founded the Biotech company Mycobics BV and was the CSO (2001-2010). In 2009 he obtained a VICI fellowship and was appointed full professor in 2010. He received an ERC Advanced grant in 2022 and coordinates several large research consortia, including the EU H2020 network MARBLES on marine microbes and natural products and NACTAR on novel antibiotics.

Studies:

MSc. in 1987 at the Free University of Amsterdam, The Netherlands

PhD. in 1994 at the University of Leiden, The Netherlands

Research interests

My laboratory primarily focuses on the Actinobacteria, which are multicellular mycelial bacteria that are widespread in soil and marine environments. Actinobacteria are known as Nature's medicine makers, and produce two-third of all known antibiotics and many other molecules with medical application. Aim is to go beyond the known horizons and provide novel insights into the regulatory pathways that control growth, development and antibiotic production of the actinomycetes, and to understand how cells cooperate and differentiate within multicellular systems. An important aspect is the role of Actinobacteria in the microbiome of plants and humans, and investigate how they can support health of the host. The knowledge we thus obtain finds application in the discovery of bioactive molecules and disease-suppressive microbes. Our research is characterized by the strong resonance between fundamental and applied research.

Relevant Publications:

1. van Bergeijk, D.A., Elsayed, S.S., Du, C., Nunez Santiago, I., Roseboom, A., Zhang, L., Carrion, V., Spaink, H.P., and van Wezel, G.P. (2022) Adrenaline-mediated activation of antibiotic production in *Streptomyces* highlights catechol as elicitor of specialized metabolism. *Nature Comms Chem* **5**: 14.
2. Westhoff, S., Kloosterman, A.M., van Hoesel, S.F.A., van Wezel, G.P., and Rozen, D.E. (2021) Competition Sensing Changes Antibiotic Production in *Streptomyces*. *mBio* **12**: e02729-20
3. Kloosterman, A.M., Cimermancic, P., Elsayed, S.S., Du, C., Hadjithomas, M., Donia, M.S., Fischbach, M.A., van Wezel, G.P.* , and Medema, M.H.* (2020) Expansion of RiPP biosynthetic space through integration of pan-genomics and machine learning uncovers a novel class of lantibiotics. *PLoS Biol* **18**: e3001026. *shared corresponding authors.
4. van Bergeijk, D.A., Terlouw, B.R., Medema, M.H., and van Wezel, G.P. (2020) Ecology and genomics of Actinobacteria: new concepts for natural product discovery. *Nat Rev Microbiol* **18**: 546-558.
5. Avalos, M., Garbeva, P., Raaijmakers, J.M., and van Wezel, G.P. (2020) Production of ammonia as a low-cost and long-distance antibiotic strategy by *Streptomyces* species. *ISME J* **14**: 569-583.