



## Felix Mingo

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### **The role of *Desulfitobacterium* spp. in the global network of O-demethylation in soil**

*Desulfitobacterium* spp. are strictly anaerobic bacteria first isolated from soils that were contaminated with halogenated compounds. It is now known that at least two strains of *Desulfitobacterium hafniense* are able to use phenyl methyl ethers, which are natural degradation products of lignin, as electron donors. Until recently, only acetogens were known to possess this ability. In contrast to them, *Desulfitobacterium* spp. do not use CO<sub>2</sub> as a physiological electron acceptor, yet both desulfitobacteria and acetogens operate this process via O-demethylation of the corresponding phenyl methyl ethers.

The project aims to elucidate the role of *Desulfitobacterium* spp. in the process of O-demethylation in soils. For this purpose, various *Desulfitobacterium* spp. strains will be tested for their O-demethylation potential. Thereafter, FISH and PCR techniques shall be used to identify *Desulfitobacterium* spp., associated microorganisms as well as related O-demethylase genes in soils.

#### **Publications**

Mingo FS, Diekert G, Studenik S (2015) Enrichment of *Desulfitobacterium* spp. from forest and grassland soil using the O-demethylation of phenyl methyl ethers as growth-selective process. *Microbiology* 162(2), 224-235. [Details PubMed](#)

Mingo FS, Studenik S, Diekert G (2014) Conversion of phenyl methyl ethers by *Desulfitobacterium* spp. and screening for the genes involved. *FEMS Microbiol Ecol* 90(3), 783-790. [Details PubMed](#)

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**Start of PhD**

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