

## **Dominik Sammer (né Senftleben)**

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### **A surface hydrophobin in ectomycorrhiza interaction**

Hydrophobins are small secreted proteins with low sequence homology. However, all proteins contain eight cysteines, which form disulfide bridges. They are divided into two classes, depending on their solubility and have a broad range of functions like in processes of growth and development of filamentous fungi, e.g. formation of aerial structures. Mutual symbiosis like ectomycorrhiza is based on differential gene expression. This was shown for hydrophobin tthyd1 which is upregulated in the Hartig'net in the interaction of *Tricholoma terreum* with pine. We investigate hydrophobins in *Tricholoma vaccinum*, a widely spread basidiomycete (agaricales – tricholomataceae) – forming ectomycorrhiza with spruce. The aim is to analyze in which stage of the life cycle respectively symbiotic interaction hydrophobins are produced, what kind of role they play (heterologous expression) with respect to function in the symbiotic tissue (RNAi) and if they are regulated in relation to heavy metal response. Apart from the hypothesis of the heavy metal response, the regulation of hydrophobins will be analyzed through repression of an RGS and G $\alpha$  protein.

#### **Publications**

Wagner K, Krause K, David A, Kai M, Jung EM, Sammer D, Kniemeyer O, Boland W, Kothe E (2015) Influence of zygomycete-derived D'orenone on IAA signaling in Tricholoma-spruce ectomycorrhiza. *Environ Microbiol* , [Details](#) [PubMed](#)

Schütze E, Klose M, Merten D, Nietzsche S, Senftleben D, Roth M, Kothe E (2014) Growth of streptomycetes in soil and their impact on bioremediation. *J Hazard Mater* 267, 128-135. [Details](#) [PubMed](#)

Erdmann S, Freihorst D, Raudaskoski M, Schmidt-Heck W, Jung EM, Senftleben D, Kothe E (2012) Transcriptome and functional analysis of mating in the basidiomycete *Schizophyllum commune*. *Eukaryot Cell* 11(5), 571-589. [Details](#) [PubMed](#)

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