

## Environmental chemistry 2020 - Identification of Leachable from *Trametes versicolor* in Biodegradation Experiments- Ake Stenholm- Uppsala University

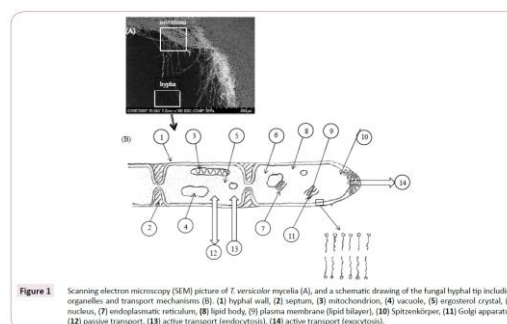
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### Abstract

The transport of fungal-derived compounds from *Trametes versicolor* to the environment was investigated. Fatty acids and sphingoids were identified at the outlet of a bioreactor containing an acidic nutrient solution and immobilized fungal mycelia. The analyses were conducted using UHPLC-Q-TOF-MS (/MS). Eleven fatty acids, including C20:0, C18:1-OH and C20:0-OH that have not been previously described for this species, were detected. The identities of myristic acid (C14:0), palmitic acid (C16:0) and stearic acid (C18:0) were confirmed using reference standards. Six sphingoids, including Sph (t18:0), Sph (t18:1), Sph (d18:0), Sph (d18:1), Sph (d16:0) and Sph (d16:1), were tentatively identified, and the identities of Sph (d18:0) and Sph (d18:1) were confirmed by reference standards.

The findings show that an array of compounds, with concentrations at the  $\mu\text{g/L}$ -1 level, was easily transported from the fungal mycelia. This is of concern when the investigated species is used in biodegradation experiments of xenobiotics and conclusions are to be drawn on the quality of the treated water. The study thus shows that the chemical composition of water treated with *Trametes versicolor* is also influenced by the immobilized fungus itself. The lipids that were detected, including fatty acids and sphingoids do not present any threat to the environment since they are not toxic. At  $\mu\text{g/L}$ -1 concentration levels, they are soluble in water.

Keywords: Xenobiotics; Immobilized fungus; Sphingoids; lipids



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