Antibiotics in the Chemical Communication of Fungi

Melanie Kettering^a, Olov Sterner^{b,*}, and Timm Anke^{a,*}

^a Institut für Biotechnologie und Wirkstoff-Forschung IBWF e.V., Erwin-Schrödinger-Strasse 56, D-67663 Kaiserslautern, Germany. Fax: +49 63 13 16 72 15.

E-mail: timm.anke@ibwf.uni-kl.de

^b Division of Organic and Bioorganic Chemistry, University of Lund, P.O.Box 124, S-22100 Lund, Sweden. Fax: +46 462 22 82 09. E-mail: Olov.Sterner@bioorganic.lth.se

* Authors for correspondence and reprint requests

Z. Naturforsch. **59c**, 816–823 (2004); received September 8, 2004

In dual cultures *Oudemansiella mucida* and *Xerula melanotricha* (basidiomycetes) react to the presence of living *Penicillium notatum* or *P. turbatum* with an increased production of strobilurin A (**1**) or X (**2**). *P. notatum* in turn reacts to the two basidiomycetes or their antibiotic strobilurin A alone with the production of *N*-(2-hydroxypropanoyl)-2-aminobenzoic acid amide (**3**) or chrysogine (**4**). *P. melinii* and *P. urticae* overgrow *O. mucida* due to complete resistance to strobilurin A. *P. brevicompactum*, *P. citrinum*, *P. janczewskii* and the other *Penicillium* strains are all sensitive but apparently do not induce *O. mucida* to produce the amounts of strobilurin A needed to inhibit their growth.

Key words: Strobilurin, Antifungal Antibiotics, Chemical Communication between Fungi