B141 New antioxidant hydroquinone derivatives from the algicolous marine fungus *Acremonium* sp.

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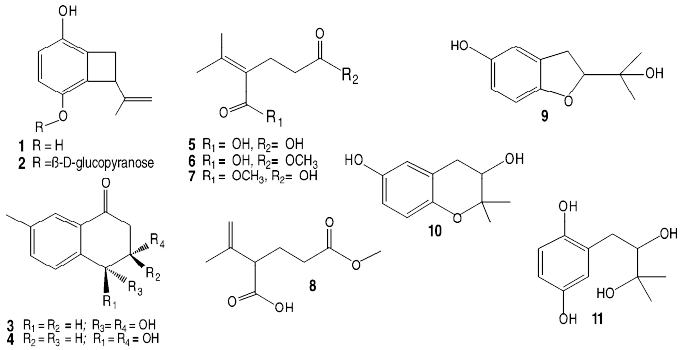
A marine fungal isolate, identified as *Acremonium* sp., was mass cultivated and found to produce two novel hydroquinone derivatives **1-2**. Compound **1** and its glucoside **2** possess a most unusual ring system. The new natural products **3-4**, were obtained as a 1:0.8 mixture. **5** was isolated for the first time as a natural product and its structure proven by x-ray analysis. In addition to these compounds an inseparable mixture of three new isomeric compounds (**6-8**) was also obtained. Isolated together with the new compounds were three known hydroquinone derivatives **9-11**. Compounds **1**, and **9-11** were found to have significant DPPH radical scavenging effects and are also able to inhibit peroxidation of linolenic acid (TBARS assay).



B142 The influence of antibacterial substances from marine fungi on the protein synthesis pattern of *Bacillus subtilis*

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As a part of an ongoing program designed to investigate marine fungi of the northern hemisphere for new antibacterial compounds we isolated ascochitine and the related new structure ascochital from a strain of the ascomycete *Kirschsteiniothelia maritima* (1). The compounds inhibit the growth of *B. subtilis* with a minimal inhibitory concentration of 0.1 µg/ml and 0.5 µg/ml resp. To identify their target in the bacterial cells we investigated their influence on the protein synthesis pattern in *Bacillus subtilis* using proteom analysis. The signature of many cytoplasmic proteins of *B. subtilis* could be analysed during the last years (2).

Changes in the protein synthesis rate were investigated by pulse-labeling experiments with L-[35S] methionine. Crude protein extracts of cells pulse-labeled at different time points after treatment with ascochitine or ascochital were separated on 2D gels. To identify newly synthesized or strongly induced proteins, dual-channel imaging (3,4) was used.

The incorporation of L-[35S] methionine added 60 min after test compound for 5 min was reduced by both compounds. The dual images showed that the synthesis pattern of cytoplasmic proteins in the pH range of 4 to 7 was significantly changed. The most dramatic effect was a strong induction of chaperones and stress-inducible proteases indicating that the test compounds cause protein stress in bacterial cells.

References: 1. Kusnick, C. et al. (2002) Pharmazie, in press. **2.** Büttner, K. et al. (2001) Electrophoresis 22: 2908. **3.** Bernhard, J. et al. (1999) Electrophoresis 20: 2225. **4.** Delta2D Software (DECODON GmbH Greifswald).