sess antibacterial, antifungal and cytotoxic activities. *Neofusicoccum parvum* and *Diplodia seriata,* associated with grapevine, both produce the well-known dihydoisocoumarins compounds mellein and its hydroxy derivatives, while *N. parvum* produces also a family of epoxyquinols compounds. Dihydroisocoumarins and epoxyquinols were reported to show a wide spectrum of biological activities. Here, we present the structure of the isolated metabolites and a review of their biological activities.

The phytotoxic exopolysaccharides produced by fungi involved in grapevine trunk diseases. A. CIMMINO[1], T. CINELLI[2], L. MUGNAI[2], G. SURICO[2] and A. EVIDENTE[1]. [1]*Dipartimento di Scienze Chimiche, Università di Napoli Federico II, Complesso Universitario Monte S. Angelo, Via Cintia 4, 80126 Napoli, Italy.* [2]*Dipartimento di Scienze delle Produzioni Agroalimentari e dell'Ambiente (DISPAA), Piazzale delle Cascine 28, 50144 Firenze, Italy. E-mail: alessio.cimmino@unina.it*

The phytotoxic metabolites involved in the grapevine diseases induced by different pathogens including *Phaeoacremonium*, *Phaeomoniella* and species of *Botryosphaeriaceae* belong to different classes of natural compounds. However they could be grouped in two distinct groups: lipophilic low molecular weight metabolites and hydrophilic high molecular weight compounds. Within the first group some new and previously known naphthalenones, melleins and polyphenol were isolated together with jasmonic acid and its ester with different butanolides. While the isolation and the chemical and biological characterization of these phytotoxins has been extensively studied, there is less knowledge on the exopolysaccharides (EPSs) produced by the different grapevine pathogens. The first preliminary results were reported for the exopolysaccaride produced by *P. aleophilum* and *P. chlamydospora*, which – from chromatographic (HPLC), IR spectroscopic and elemental analysis – were identified as pullulans. These EPSs caused clear phytotoxic symptoms when assayed on different grapevine tissues including, leaves, cuttings and stems. The ESPs were also used as antigen to immunize rats to produce specific polyclonal antibodies. These were used to develop an ELISA cytofluorimetric method to recognize the EPSs in crude extracts obtained from grapevine leaves showing initial and fully developed grapevine leaf stripe symptoms (esca complex). Further investigations based on chemical, GC-MS and NMR spectroscopy, disagree, however, with these structure determinations. The chemical and biological characterization of the EPSs produced by *P. aleophilum*, *P. chlamydospora, N. parvum* and different botryosphaeriaceous species are reported, including a first evaluation of their phytotoxic activity on host and non-host plants.

Differing transcriptomic alterations of two esca-associated fungi, *Phaeoacremonium aleophilum* and *Phaeomoniella chlamydospora* on lto co-cultured *Vitis vinifera* calli. J. FISCHER[1], S. COMPANT[2], R.J.G. PIERRON[3,4], M. GORFER[2,5], A. JACQUES[3], E. THINES[1] and H. BERGER[2]. [1]*IBWF, Institute of Biotechnology and Drug Research, Erwin-Schrödinger-Str. 56, 67663 Kaiserslautern, Germany.* [2]*AIT, Austrian Institute of Technology, Health & Environment Department, Bioresources, Konrad-Lorenz-Strasse 24, 3430 Tulln, Austria.* [3]*Université de Toulouse, Institut National Polytechnique de Toulouse – Ecole d'Ingénieurs de Purpan, Département des Sciences Agronomiques et Agroalimentaires, Equipe Agrophysiologie et Agromolécules, 75 voie du TOEC, BP 57611, F-31076 Toulouse Cedex 03, France.* [4]*Université de Toulouse, LGC UMR 5503 (CNRS/UPS/INPT), Dept BIOSYM, INP-ENSAT, 1 avenue de l'Agrobiopole, 31326 Castanet-Tolosan, France.* [5]*BOKU, University of Natural Resources and Life Sciences, Vienna, Konrad Lorenz Strasse 24, A-3430 Tulln/Donau, Austria. E-mail: harald.berger@ait.ac.at*

Phaeoacremonium aleophilum (P.al) and *Phaeomoniella chlamydospora (P.ch)* are filamentous fungi that have been frequently isolated from wood of grapevine trunks, and are suspected as playing roles in trunk disease development. Grapevine trunk/dieback diseases are on the rise in vineyards all over the world and no effective remedies against these diseases are available. Typical symptoms of esca disease are discoloured trunks and white rot, brown spots on fruits and "tiger stripes" on leaves, but these symptoms can vary greatly, depending on the age of the vines, the cultivar and external factors such as climate and terroir. P. al and P.ch have also been isolated from apparently healthy plants, suggesting that the biological activity of these fungi may be more important than their presence in host plants. Knowledge of the transcriptome can provide insight into this biological activity. In order to exclude as many factors as possible impacting on the fungi we used *Vitis vinifera* callus culture to detect changes in the transcriptome upon exposure to active plant cells. We present the specific transcriptional responses of these two fungi to callus cell exposure and the different strategies they develop to cope with the same environment (endophytic growth). This work will give new insights into the complexities of host/pathogen interactions, and may-lead to effective disease management strategies.

Confocal scanning microscopy and imaging of *Phaeoacremonium aleophilum* and *Phaeomoniella chlamydospora* colonisation inside cuttings of grapevine plants. R.J.G. PIERRON[1], H. BERGER[2], M. GORFER[2,3], A. JACQUES[1], A. SESSITSCH[1], J. STRAUSS[2,3] and S. COMPANT[2]. [1]*Université de Toulouse, Institut National Polytechnique de Toulouse – Ecole d'Ingénieurs de Purpan, Département des Sciences Agronomiques et Agroalimentaires, Equipe*