XII. International Congress of Mycology

biological resources and their associate information including quality control are perused by these collections. The recent national projects, with reasonable budgets to support their activities, either on networking activities or requalification and management create a new breath and responsibilities to these collections. Taking advantage of good and well equipped premises of LIKA these collections are now open new avenues working in consortium to improve the quality control of their holdings using new tools from molecular biology and spectral analysis (MALDI-ToF) to achieve in the future a certified BRC for the UFPE microbial culture collections

MP-157

MALDI-TOF MS POTENTIALITIES AND LIMITS TO CHARACTERISE AFLATOXIGENIC SPECIES OF ASPERGILLUS SECTION FLAVI

Rodriges PAULA¹, Santos CLEIDIR², Kallow WİBKE³, Erhard MARCEL³, Welker MARTİN⁴, Kozakiewicz ZOFIÁ⁵, Lima NELSON⁶, Venâncio ARMANDO⁷

¹MSc CIMO Escola Superior Agrária de Bragança, Bragança, Portugal
²PhD DOF/LIKA Universidade Federal de Pernambuco, Recife, Brazil
³PhD AnagnostosTec Gesellschaft für Analytische Biochemie und Diagnostik mbH, Gelm, Germany
⁴PhD IBB-Institute for Biotechnology and Bioengineering Universidade do Minho, Braga, Portugal

Aspergillus is a large genus, with a complex taxonomy. The genus is easily identified by its characteristic conidioconidial, but species identification and differentiation is complex, mainly because it is traditionally based on a range of morphological features. Aspergillus subgenus Circumdati section Flavi, also referred to as the A. flavus group, has attracted worldwide attention for its industrial use and toxigenic potential. Section Flavi is divided in two groups of species. One includes the aflatoxigenic species A. flavus, A. parasiticus and A. nomius, which cause serious problems in agricultural commodities, and the other one includes the non-aflatoxigenic species A. oryzae, A. sojae and A. tamarii, traditionally used for production of fermented foods. Species from A. flavus group are morphologically and genetically very similar, and are therefore difficult to differentiate by both cultural and molecular methods. Matrix Assisted Laser Desorption Ionization Time-of-Flight (MALDI-TOF) Mass Spectrometry has already shown high potentialities in discriminating very closely related taxa. This technique is a phenotype characterization taking advantage that whole mycelium and/or spores can be investigated and the mass range of surface proteins can be used as organism-specific signal patterns (fingerprints). This work intended using MALDI-TOF MS to discriminate 30 strains isolated from Portuguese grapes which were previously classified as A. flavus group by morphological methods. These results are compared with that previously obtained by conventional methods.

MP-158

HISTOPATHOLOGICAL EVALUATION OF ONYCHOMYCOSIS IN PORTUGUESE PODIATRIC PATIENTS

Dias NİCOLINÁ¹, Garcez FERNANDA², Teixeira MONICA³, Gomes DOMİNGOS³, Ferreira FERNANDO⁴, Lima NELSON⁵

¹PhD IBB-Institute for Biotechnology and Bioengineering Universidade do Minho, Braga, Portugal
²BA Departamento de Anatomia Patológica, Citológica e Tanatológica Escola Superior de Saúde do Vale do Sousa, Gandra, Portugal
³Portela Manuel MSc Departamento de Podologia Escola Superior de Saúde do Vale do Ave, Vila Nova de Famalicão, Portugal
⁴MD Departamento de Podologia Escola Superior de Saúde do Vale do Ave, Vila Nova de Famalicão, Portugal
⁵PhD Departamento de Anatomia Patológica, Citológica e Tanatológica Escola Superior de Saúde do Vale do Sousa, Gandra, Portugal

Onychomycosis is a fungal infection which is a major cause of nail abnormalities in developed countries. In clinical suspected cases of onychomycosis potassium hydroxide preparation and fungal culture are the diagnostic methods typically used. Nevertheless cultures require a long incubation period of at least three weeks and rates of approximately 30% of false negative results have been reported. Therefore possible contamination can mask the existence of the actual infectious agent in the event of an overgrowth. Histological examination of periodic acid-Shiff (PAS)-stained nail clippings has been proposed as an alternative to the former diagnostic methods given that results are obtained after a short period of 24h-48h. Thus it is assumed that there exist only few interfering factors, such as artefacts from particles, serum and parakeratotic cells that might give rise to false results. The aim of this work was to perform a definitive diagnosis of nail mycotic infection by the examination of histological section samples PAS-stained from 55 patients (age ranging from 3 to 86 years) clinically suspected of having onychomycosis. All patients were attending the Podology Service in the Centro Hospitalar do Alto Ave (Guimarães-Portugal) between October to December 2007. Fungal culture was also carried out in selective Sabouraud media with and without antibiotics and posterior fungi identification based on the macroscopic and microscopic features was performed. Every fungal growth was recorded as positive regardless of the questionable pathogenicity of the infectious agent. Among the different types of fungi identified culturally, 22.2% were identified as der-
matophytes, T. rubrum being the most prevalent. A percentage of 55.6% were identified as moulds and 22.2% were Candida and other yeast-like organisms. Invasive fungal infection was histologically established in 42.5% of the examined samples. Peripheral or internal localization of myphal elements in the nail was clearly observed in histological sections. Thus, reliable differentiation between fungi that effectively infected nail and secondary contamination or airborne infectious agents was successfully carried out by examination of PAS-stained nail clippings. However no information concerning the vitality of the fungi and no accurate identification can be done by histological diagnostic alone, so it is suitable that mycological culture should be complemented by histological diagnostic procedures.

MP-159
ANALYZE FUNCTIONAL OF THE SIGNALIZATION CASCADE MAP KINASE MPS1 AT PATHOGENIC RICE BLAST FUNGUS MAGNAPORTHE GRISEA

Cemile ANT1, Marc-Henri2
1Phd Student Laboratoire mixte Bayer/CNRS
2LEBRUN Director of Laboratory Laboratoire mixte Bayer/CNRS

The M. grisea MAP Kinase Mps1 is orthologous to the yeast Slt2 kinase involved in the cell wall repair signaling pathway. This pathway controls the induction of the repair and biosynthesis of the cell wall in response to physical or chemical damages, stresses or developmental processes. In M. grisea this pathway is required for appressorium mediated penetration of the fungus into its host plant. This is reflected by the phenotype of the mps1 deletion mutant that is non pathogenic on rice and barley as a consequence of its inability to penetrate into its host plants (Xu et al. 1998 PNAS 95:12713–12718). These results suggest that the repair of the cell wall is essential for appressorium mediated penetration. This mutant has also developmental defects such as an abnormal mycelial growth rescued by high sorbitol and a very low sporulation rate. In Saccharomyces cerevisiae, the MAP kinase Slt2 activates the transcription factor Rim1 and the SBF complex composed of the two transcription factors, Swi4 and Swi6. This last complex controls the expression of genes involved either in cell cycle control (G1/M transition) or in the maintenance and repair of the cell wall. M. grisea genes orthologous to Rim1, Swi4 and Swi6 have been identified in the genome of M. grisea. The MgMPS1 deletion mutant was obtained in the P1.2 M. grisea background. The phenotypic mps1 mutants showed that it has the same phenotype characteristics as those already described (Xu et al. 1998 PNAS 95:12713–12718) abnormal mycelial growth rescued by high sorbitol, absence of sporulation, lack of pathogenicity on intact barley leaves, differentiation of non functional appressoria unable to penetrate into intact plant leaves.

MP-160
ENDOPHYTIC MYCOBIOTA OF ATLAS CEDAR (Cedrus atlantica Man.) NEEDLES IN BELEZMA MASSIF (ALGERIA).

Harzallah Daoud1, Benssaci Oussama Ali2
1Dr Biology Faculty of Sciences,University of Setif Algeria
2PG Agronomy Faculty of Sciences University of Batna Algeria

Endophytic fungi were detected, isolated and collected from needles of Atlas cedar (Cedrus atlantica Man.), from three separated locations in Belezma National Park. For the author’s knowledge, these fungi are reported from Atlas cedar for the first time. From 1200 surface-sterilized needle segments collected from 30 trees, more than 20 fungal genera were obtained. The range of fungal taxa is dominated by Mitosporic group, especially Hyphomycetes. In the second place, appears Ascomycota, while Zygomyctes phylum is represented only by one taxa. Endophytic fungi are diverse on Cedrus atlantica needles, mostly in TALMET site, as showed by ecological indexes, indicating that quantitative patterns of colonization can not reflect the qualitative aspects illustrated by the range of fungal taxa in studied locations. The lower endophyte diversity in BOUMERZOUG site is eventually related to the degraded physiological status of Cedars as a result of forest decline phenomena occurred in Belezma forests. Needle-colonizing endophytic fungi in Cedrus atlantica are mostly represented by some common genera such as Alternaria, Aspergillus, Epicoccum and Lophodermium. The genera Cladosporium, Fusarium, Cylindrocarpon, Verticillium and Phomopsis were potential pathogens, while the presence of entomopathogenic fungus Beauveria is a sign of a probably protecting roles against phytophagous insects in sampled trees. This work can provide baseline data for future surveys in the aim to select endophytic isolates known as potential biotic protection agents.