

## O16-2: Proteomic analysis of *Aspergillus niger* type strain (MUM 03.01) after accelerated freeze-drying preservation

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**Keywords:** Proteomic analysis, *Aspergillus niger*, freeze-drying preservation

Industrial processes based on biotechnology require a reliable source of microbial cultures, raising a need for the microbial safe long-term storage. The expanding biotechnological applications of *Aspergillus niger* requires effective long-term preservation that maintains their viability and also their physiological and genetic features [1].

From the best of our knowledge, proteomic analysis for monitoring the effect of preservation techniques on fungal intra- and extracellular protein expression by filamentous fungi has not been studied. Proteomic analysis is a powerful methodology for evaluation of proteins in complex mixtures and for the study of alteration of protein expression in an organism under varying environmental conditions. Proteomics can also be used as an important monitoring tool on the fungal cellular structure and enzymatic expression before and after filamentous fungi long-term preservation.

In this study, a comparative proteomic analysis of intra- and extracellular protein secretion expressed by *A. niger* type strain (MUM 03.01) preserved on freeze-drying ampoules and then subjected to accelerated shelf-life aging through the temperature increasing was assessed. Proteomic analysis based on 2D gel electrophoresis of *A. niger* (MUM 03.01) was assessed in 5 different liquid media. According to the results obtained the intracellular fungal proteomic profile was not modified by the accelerated shelf-life aging. It was also observed that the extracellular fungal proteomic profile was negligible which makes this *A. niger* type strain a weak fungal lineage for biotechnological applications.

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[1] Simões, MF, Pereira, L, Santos, C, Lima, N. *Management of Microbial Resources in the Environment. Management of Microbial Resources in the Environment*. pp. 91-117, (Malik, A, Grohmann, E & Alves, M Eds., Springer, 2013).



# The 13th International Conference on Culture Collections (ICCC13)

BRCs in the era of microbial genomics and  
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## PROGRAM & ABSTRACTS



**中国科学院微生物研究所**  
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## **Program & Abstracts**

**Beijing Friendship Hotel**

**September 23-27, 2013**

**Beijing China**

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