## Genetic Approach to Target Putative PKS Genes Involved in Ochratoxin a Biosynthesis within Aspergillus Section Nigri, As a Main Cause of Human Nephropathy

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**Abstract :** A 700 pb PCR-derived DNA fragment was isolated from Aspergillus carbonarius, Aspergillus niger, and Aspergillus tubingensis using degenerated primers (LC1-LC2c) and two newly designed primer pairs (KSLB-LC6) for Aspergillus niger and (AF11F-LC2) for Aspergillus tubingensis developed for the acyl transferase (AT) and the KS domains of fungal PKSs. DNA from the most of black Aspergillus species currently recognized was tested. Herein, we report on the identification and characterisation of a part of the novel putative OTA-polyketide synthase gene in A. carbonarius "ACPks", A. niger "ANPks" and A. tubingenis "ATPks". The sequences were aligned and analyzed using phylogenetic methods. Primers used in this study showed general applicability and other Aspergillus species belonging to section Nigri were successfully amplified especially in A. niger and A. tubingenis. The predicted amino acid sequences "ACPks" displayed 66 to 81% similarities to different polyketide synthase genes while "ANPks" similarities varied from 68 to 71% and "ATPks" were from 81 to 97%. The AT and the KS domains appeared to be specific for a particular type of fungal PKSs and were related to PKSs involved in different mycotoxin biosynthesis pathways, including ochratoxin A. The sequences presented in this work have a high utility for the discovery of novel fungal PKS gene clusters.

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Keywords : Pks genes, OTA Biosynthesis, Aspergillus Nigri, sequence analysis

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