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BIOTRANSFORMATION OF PHENYLALANINE BY *ASPERGILLUS BRASILIENSIS* WITH VIEW TO PHENOLIC COMPOUNDS PRODUCTION

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Abstract: Shikimate pathway is a common metabolic route to the aromatic amino acids phenylalanine, tyrosine and tryptophan, which can serve as building blocks to proteins and to a large number of secondary metabolites[1]. Secondary metabolites with phenolic structure shikimate-derived, present several bioactivities such as antioxidant, cytotoxic and antimicrobial[2]. Shikimate pathway is described as a metabolic route for plants, prokaryotes and fungi[3], although some authors emphasize that phenolic compounds are still rarely found in the microorganisms[4]. Biotransformation is a valuable approach to the achievement of bioactive compounds with interesting chemical structures[5]. In this study, was performed the biotransformation of phenylalanine and tyrosine by *Aspergillus brasiliensis* ATCC 16404, in three different culture media, in three incubation times. *A. brasiliensis* was reactivated in Potato Dextrose Agar (PDA) and incubated at 28°C, for seven days. After this period, 10^6 spores/mL were inoculated in pre-fermentative medium Potato Dextrose Broth (PDB) and incubated at 28°C for four days, in a rotatory shaker (120 rpm). Afterwards, the mycelia were replaced to fermentative media Czapek, Koch's and Zhang, containing 0.04 mmol of the aromatic amino acids, and incubated under the same conditions. Three samples were taken to each 24 hours. Culture media without aromatic amino acids were used as control. Finally, broths were filtrated under vacuum and submitted to liquid-liquid partition with ethyl acetate. The influence of the culture media and incubation time in biotransformations were evaluated by the analysis of ethyl acetate extracts chemical profiles, obtained by High Performance Liquid Chromatography coupled with diode array detector (HPLC-DAD). Tyrosine was not biotransformed. Koch's medium showed the best results in biotransformation of phenylalanine. After 48 hours of incubation, three different compounds were detected in the chromatograms, which were not present in control. Experiments aiming the isolation of the metabolites are in progress.

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