

STEROIDAL CHAIN FUNCTIONALIZATION MEDIATED BY ENDOPHYTIC FUNGI *Penicillium Citrinum* H7 AND *Talaromyces* sp. H4

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Biotransformation has been successfully employed to conduct uncommon reactions, which would hardly be carried out by chemical synthesis¹. A wide diversity of compounds may be metabolized by fungi, leading to chemical derivatives through selective reactions that work under ecofriendly conditions². Endophytic fungi live inside vegetal tissues without causing damage to the host plant, making available unique enzymes for interesting chemical derivatization. Biotransformation of steroids by endophytic fungi may provide new derivatives as these microorganisms came from uncommon and underexplored habitats. In this study, endophytic strains isolated from *Handroanthus impetiginosus* leaves were assayed for biotransformation of progesterone, and its derivatives were identified through GC-EI-MS analysis. The endophyte *Talaromyces* sp. H4 was capable of transforming the steroid nucleus selectively into four products through selective ene-reduction of the C4-C5 double bond and C-17 oxidation. The best conversion rate of progesterone (>90 %) was reached with *Penicillium citrinum* H7 endophytic strain that transformed the substrate into one derivative. The results highlight endophytic fungi's potential to obtain new and interesting steroidal derivatizations.

Keywords: Endophytic fungi, Steroids, Biotransformation, CG-MS.

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