Transformations of Steroids by Beauveria bassiana

Ewa Huszcza^{*}, Jadwiga Dmochowska-Gładysz, and Agnieszka Bartmańska Department of Chemistry, Agricultural University, Norwida 25, 50-375 Wrocław, Poland. Fax: 0048-071-3283576. E-mail: huszcza@ozi.ar.wroc.pl

* Author for correspondence and reprint requests

Z. Naturforsch. 60 c, 103-108 (2005); received July 26/September 6, 2004

The course of transformations of testosterone and its derivatives, including compounds with an additional C1,C2 double bond and/or a 17α -methyl group, a 17β -acetyl group or without a 19-methyl group, by a *Beauveria bassiana* culture was investigated. The fungi promoted hydroxylation of these compounds at position 11α , oxidation of the 17β -hydroxyl group, reduction of the C1,C2 or C4,C5 double bonds and degradation of the progesterone side-chain, leading to testosterone. The structure of 4-ene-3-oxo-steroids had no influence on regio- and stereochemistry of hydroxylation. In a similar manner, dehydroepiandrosterone was hydroxylated by *Beauveria bassiana* at position 11α , however, a small amount of 7α -hydroxylation product was also formed.

Key words: Beauveria bassiana, Biotransformation, Steroids