

Transformations of Steroid Esters by *Fusarium culmorum*

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The course of transformations of the pharmacological steroids: testosterone propionate, 4-chlorotestosterone acetate, 17 β -estradiol diacetate and their parent alcohols in *Fusarium culmorum* AM282 culture was compared. The results show that this microorganism is capable of regioselective hydrolysis of ester bonds. Only 4-ene-3-oxo steroid esters were hydrolyzed at C-17. 17 β -Estradiol diacetate underwent regioselective hydrolysis at C-3 and as a result, estrone – the main metabolite of estradiol – was absent in the reaction mixture.

The alcohols resulting from the hydrolysis underwent oxidation at C-17 and hydroxylation. The same products (6 β - and 15 α -hydroxy derivatives) as from testosterone were formed by transformation of testosterone propionate, but the quantitative composition of the mixtures obtained after transformations of both substrates showed differences. The 15 α -hydroxy derivatives were obtained from the ester in considerably higher yield than from the parent alcohol.

The presence of the chlorine atom at C-4 markedly reduced 17 β -saponification in 4-chlorotestosterone acetate. Only 3 β ,15 α -dihydroxy-4 α -chloro-5 α -androstan-17-one (the main product of transformation of 4-chlorotestosterone) was identified in the reaction mixture. 6 β -Hydroxy-4-chloroandrostenedione, which was formed from 4-chlorotestosterone, was not detected in the extract obtained after conversion of its ester.

Key words: *Fusarium culmorum*, Biotransformation, Steroids