Microbial Transformation of Antifertility Agents, Norethisterone and 17α-Ethynylestradiol

Muhammad I. Choudhary, Syed G. Musharraf, Rahat A. Ali, Muhammad Atif, and Atta-ur-Rahman

H. E. J. Research Institute of Chemistry, International Center for Chemical Sciences, University of Karachi, Karachi-75270, Pakistan

Reprint requests to M. I. Choudhary. Fax: (92-21) 9243190-9243191.
E-mail: hej@cyber.net.pk

Z. Naturforsch. **59b,** 319 – 323 (2004); received July 7, 2003

The microbial transformation of oral contraceptive norethisterone (**1**) by *Cephalosporium aphidicola* afforded an oxidized metabolite, 17α-ethynylestradiol (**2**), while the microbial transformation of **2** by *Cunninghamella elegans* yielded several metabolites, 19-nor-17α-pregna-1,3,5 (10)-trien-20-yne-3,4,17β-triol (**3**), 19-nor-17α-pregna-1,3,5 (10)-trien-20-yne-3,7α,17β-triol (**4**), 19-nor-17α-pregna-1,3,5 (10)-trien-20-yne-3,11α,17β-triol (**5**), 19-nor-17α-pregna-1,3,5 (10)-trien-20-yne-3,6β,17β-triol (**6**) and 19-nor-17α-pregna-1,3,5 (10)-trien-20-yne-3,17β-diol-6β-methoxy (**7**). Metabolite **7** was found to be a new compound. These metabolites were structurally characterized on the basis of spectroscopic techniques.

Key words: Norethisterone, 17α-Ethynylestradiol, Microbial Transformation, *Cephalosporium aphidicola*, *Cunninghamella elegans*