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### Biotransformation of some anabolic steroids by *Rhizopus stolonifer*

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Microorganisms have been used extensively for hydroxylation of anabolic steroids since their enzymes can catalyze reactions with high regio- and stereospecificity. Their ability to oxidize steroidal compounds has immense synthetic and commercial importance. Selected anabolic steroids (oxandrolone (1), mestanolone (2) and 17-methyl-1-testosterone (3)) were subjected to biotransformation using the plant pathogen fungus *Rhizopus stolonifer*. Oxandrolone (1) and mestanolone (2) are anabolic synthetic derivatives of testosterone that act on androgen receptors. 17-Methyl-1-testosterone (3) is an anabolic synthetic derivative of mestanolone (2). Incubation of oxandrolone (1) with *R. stolonifer* yielded metabolites 4-6. While incubation of mestanolone (2) and 17-methyl-1-testosterone (3) with *R. stolonifer* produced metabolites 7, 8 and 9, 10, respectively. Structures of compounds 4-10 were deduced through comparative spectroscopic studies with substrates 1-3. The stereochemistry in compounds 4-8 and 10 were determined by NOESY spectrum and single-crystal X-ray diffraction studies for metabolite 4. Compounds 1 and 5 showed a significant  $\beta$ -glucuronidase inhibitory activity.

#### Biography

Mohammad Yasin Mohammad obtained his BSc degree (Chemistry) in 2004 from the University of Jordan in Amman, Jordan, MSc degree (Organic Chemistry) in 2008 from the University of Karachi, Karachi, Pakistan, and PhD degree (Organic Chemistry) recently in 2013 from H.E.J. Research Institute of Chemistry, International Center for Chemical and Biological Sciences, Karachi-75270, Pakistan. He is currently working as Assistant Professor at the Faculty of Pharmacy, Middle East University, Amman-11831, Jordan. His research interests are in Natural Products Chemistry and in Microbial Biotransformation of Steroids as well. His future plan is to establish a research in the field of Natural Products Chemistry. He wishes to contribute in raising standards of education and research in Jordan.

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