Elias Baydoun et al., Chem Sci J 2017, 8:3 (Suppl)
DOI: 10.4172/2150-3494-C1-011

Fungal-mediated structural transformation of contraceptive drugs, drospirenone and etonogestrel into new metabolites

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Biotransformation is an efficient approach for structural alteration of all classes of organic compounds. This technique is effectively employed in green chemistry, particularly in drug discovery and development, as it involves a variety of enzymes during transformation which results in regio-, chemo-, and stereo-selective products. In the current study, biotransformation of an orally active contraceptive drugs, drospirenone and etonogestrel was carried out at pH 7.0 and 26±2°C. Transformation of drospirenone with *Cunninghamella elegans* resulted in four new metabolites, 14α-hydroxy-drospirenone, 11-oxo-drospirenone, 12-oxo-drospirenone and 11β, 14α-dihydroxy-drospirenone, along with a known metabolite and 11α-hydroxy-drospirenone. While transformation of etonogestrel with *Cunninghamella blakesleeana* and *C. echinulata* yielded three new metabolites 6β-hydroxy-11, 22-epoxy-etonogestrel, 11, 22-epoxy-etonogestrel, 10β-hydroxy-etonogestrel, along with two known metabolites 6β-hydroxy-etonogestrel, and 14α-hydroxy-etonogestrel.

Biography

Elias Baydoun has completed his PhD at University of Cambridge, UK in the year of 1980. He is working as Professor at American University of Beirut, Lebanon. His research interests are membrane fusion *in vitro*, plant cell wall biosynthesis and assembly and biologically active oligosaccharides.

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