

El Kady I. A., "17<sup>α</sup> - Hydroxylation Of Progesterone By Cunninghamella Echinulata On A Laboratory Fermentor Scale", Qatar University Science Journal, 1985, Vol. 5, Pages 145-152.

### Abstract

The microbiological transformation of progesterone by a local isolate of *Cunninghamella echinulata* using a laboratory fermentor was studied. Progesterone (10-50 g/l) wetted by Tween 80 was added to 48-hour old culture and the transformation was left to proceed for 72 hours. Thereafter, the different transformation products were resolved chromatographically. The identity of each product was established through the determination of m.p., mixed m.p., optical rotation and ultraviolet as well as infrared absorption spectra. A comparison of the  $R_f$  values of each product with that of the corresponding reference using different solvent systems as well as their colour expressed with two spray reagents, was used as a further proof for the identity of the isolated products. With all concentrations of progesterone tested, maximum yield of 17 $\alpha$ -hydroxyprogesterone was obtained after 48 hours of fermentation. Progesterone concentrations of 10 and 20 g/l were almost quantitatively converted to the different transformation products after 72 hours of fermentation. Using a concentration of 20 g/l and incubation period of 48 hours, the transformation product mixture consisted of unchanged progesterone (6%), 17 $\alpha$ -hydroxyprogesterone (54%), 17 $\beta$ -hydroxyprogesterone (29%) and 17 $\alpha,20\alpha$ -dihydroxyprogesterone (2.5%).