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Metabolism of 32-Oxo-24,25-dihydrolanosterols by Partially Purified Cytochrome P-450$_{14DM}$ from Rat Liver Microsomes

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Metabolism of 32-oxo-24,25-dihydrolanosterols (3β-hydroxylanost-8-en-32-al (**4**, Δ^8-CHO) and 3β-hydroxylanost-7-en-32-a1 (**5**, Δ^7-CHO)) was studied in a reconstituted system consisting of rat liver partially purified cytochrome P-450, which catalyzes lanosterol 14-demethylation (P-450$_{14DM}$), and NADPH-cytochrome P-450 reductase. The reconstituted system converted Δ^8-CHO (**4**) to 4,4-dimethyl-5α-cholesta-8,14-dien-3β-ol (**2**, 8,14-Diene), which corresponds to the 14-deformylated product. Δ^7-CHO (**5**), the isomer of Δ^8-CHO (**4**), was not converted to the corresponding 14-deformylated product. The apparent K_m value of cytochrome P-450$_{14DM}$ for Δ^8-CHO (**4**) was about 1/20 of that for 24,25-dihydrolanosterol (**1**, DHL). The metabolism of Δ^8-CHO (**4**) was inhibited by 7-oxo-24,25-dihydrolanosterol (**6**, 7-oxo-DHL), which is a potent inhibitor of cholesterol biosynthesis from lanosterol or DHL (**1**). However, the metabolism of Δ^8-CHO (**4**) was less inhibited by 7-oxo-DHL (**6**) than that of DHL (**1**).

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