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**The 3-hydroxy group of lanosterol is essential for orienting the
substrate in the substrate site of cytochrome P-450_{14DM}
(Lanosterol 14 α -demethylase)**

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Interaction of lanosterol, 3-epilanolsterol, 3-oxolanosta-8,24-diene, 3-methylenolanost-8-ene and lanosterol acetate with cytochrome P-450_{14DM} were studied. The cytochrome mediated the 14 α -demethylation of 3-epilanolsterol with nearly the same activity as lanosterol but could not mediate the 14 α -demethylation of the 3-methylene derivative and the 3-acetate. The cytochrome catalyzed the 14 α -demethylation of the 3-oxo derivative with low rate. Based on these and some additional observations the hydrogen bond formation between the 3-hydroxy group of lanosterol and the specific amino acid residue in the substrate site is assumed to be essential for orienting the substrate in the substrate site of the cytochrome.

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