

Title	Deformylation of 32-oxo-24, 25-dihydrolanosterol by the purified cytochrome P-450 <sub>14DM</sub> (lanosterol 14 $\alpha$ -demethylase) from yeast : evidence confirming the intermediate step of lanosterol 14 $\alpha$ -demethylation
Sub Title	
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Publisher	共立薬科大学
Publication year	1990
Jtitle	共立薬科大学研究年報 (The annual report of the Kyoritsu College of Pharmacy). No.35 (1990. ) ,p.53- 53
JaLC DOI	
Abstract	
Notes	抄録
Genre	Technical Report
URL	<a href="https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=AN00062898-00000035-0053">https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=AN00062898-00000035-0053</a>

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**Deformylation of 32-Oxo-24,25-dihydrolanosterol by the Purified  
Cytochrome P-450<sub>14DM</sub> (Lanosterol 14 $\alpha$ -Demethylase) from  
Yeast: Evidence Confirming the Intermediate Step of  
Lanosterol 14 $\alpha$ -Demethylation**

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32-Oxo-24,25-dihydrolanosterol (32-oxo-DHL) was deformylated to 4,4-dimethyl-cholesta-8,14-dien-3 $\beta$ -ol, the product of 14 $\alpha$ -demethylation of 24,25-dihydrolanosterol (DHL), by the reconstituted lanosterol 14 $\alpha$ -demethylase system consisting of cytochrome P-450<sub>14DM</sub> and NADPH-cytochrome P-450 reductase of yeast. Affinity of 32-oxo-DHL to the cytochrome was considerably higher than those of lanosterol and DHL, and the rate of deformylation of 32-oxo-DHL was faster than the rate of demethylation of lanosterol and DHL. Spectral analysis of the 32-oxo-DHL complex of cytochrome p-450<sub>14DM</sub> suggested the interaction between the 32-aldehyde group and the heme iron. These observations, together with our preceding findings on the metabolism of 32-hydroxy-24,25-dihydrolanosterol (Aoyama, Y., Yoshida, Y., Sonoda, Y., and Sato, Y. (1987) *J. Biol. Chem.* **262**, 1239—1243), indicate that the 14 $\alpha$ -demethylation of lanosterol catalyzed by cytochrome P-450<sub>14DM</sub> proceeds with three step monooxygenations *via* the 32-hydroxy and 32-oxo intermediates, and the cytochrome mediate this sequential reaction without releasing the intermediates.

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本報告は *J. Biol. Chem.*, **264**, 18502—18505 (1989) に発表.

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