

Title	Purification of a human cytochrome P-450 isozyme catalyzing lanosterol 14 α -demethylation
Sub Title	
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Publisher	共立薬科大学
Publication year	1993
Jtitle	共立薬科大学研究年報 (The annual report of the Kyoritsu College of Pharmacy). No.38 (1993.) ,p.63- 63
JaLC DOI	
Abstract	
Notes	抄録
Genre	Technical Report
URL	https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=AN00062898-00000038-0063

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Purification of a human cytochrome P-450 isozyme catalyzing lanosterol 14 α -demethylation*

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An isozyme of cytochrome P-450 catalyzing lanosterol 14 α -demethylation was purified from human liver using column chromatography, including immunoaffinity chromatography. The purified protein exhibited a single protein band (53 kDa) on sodium dodecyl sulfate-polyacrylamide gel electrophoresis. When reconstituted with NADPH-cytochrome P-450 reductase, the purified protein showed an activity of 14 α -demethylation of 24,25-dihydrolanosterol (3.20 nmol/min/mg protein). The apparent K_m value for 24,25-dihydrolanosterol was found to be 27 μ M. This enzyme converted in the reconstituted system, the oxygenated intermediates of 24,25-dihydrolanosterol 14 α -demethylation, 32-hydroxy-24,25-dihydrolanosterol and 32-oxo-24,25-dihydrolanosterol, to the 32-nor compound, 4,4-dimethylcholesta-8,14-dien-3 β -ol.

* 本報告は *Biochim. Biophys. Acta*, 1170, 92~97 (1993) に発表。

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