

PRODUCT INFORMATION



Lanosterol 14- α -demethylase (human, recombinant)

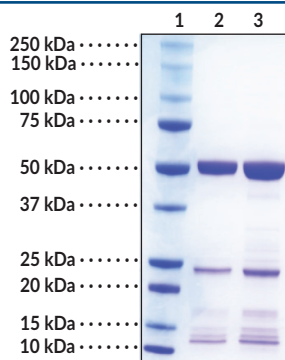
Item No. 32928

Overview and Properties

Synonyms:	Cytochrome P450 51A1, Cytochrome P45014DM, Cytochrome P450LI, CYP51A1, CYP51, LDM
Source:	Active recombinant human C-terminal His-tagged lanosterol 14- α -demethylase expressed in <i>E. coli</i>
Amino Acids:	61-503
Uniprot No.:	Q16850
Molecular Weight:	52.71 kDa
Storage:	-80°C (as supplied)
Stability:	≥ 9 months
Purity:	$\geq 60\%$ estimated by SDS-PAGE
Supplied in:	50 mM Tris-HCl, pH 7.6, with 0.5 mM EDTA, 0.2 mM DTT, and 10% glycerol
Protein	
Concentration:	<i>batch specific</i> mg/ml

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images

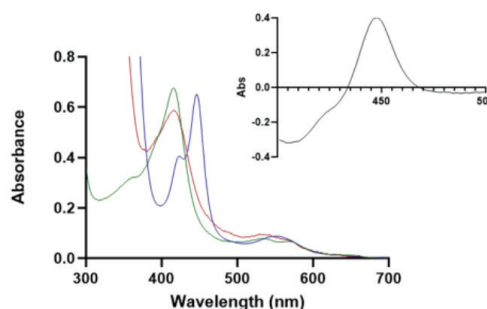


Lane 1: MW Markers

Lane 2: Lanosterol 14- α -demethylase (2 μ g)

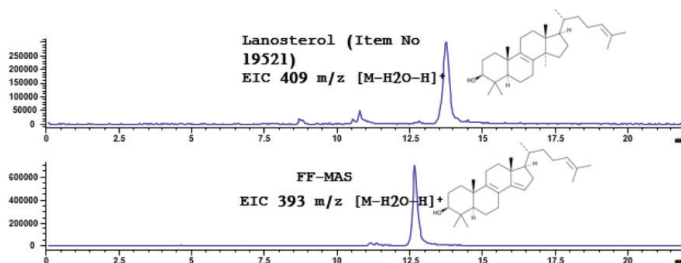
Lane 3: Lanosterol 14- α -demethylase (4 μ g)

SDS-PAGE Analysis of
Lanosterol 14- α -demethylase



Spectroscopic Characterization of Lanosterol 14- α -demethylase.

A typical UV-Vis absorption spectra of oxidized Lanosterol 14- α -demethylase (green) is compared with the dithionite-reduced (red) and reduced CO-complexed (blue) forms. The baseline was recorded between 200 and 700 nm. The inset shows the typical UV-Vis absorption spectra of CO-complexed Lanosterol 14- α -demethylase.



Conversion of lanosterol to FF-MAS by Lanosterol 14- α -demethylase.

The EIC of lanosterol (top panel) and the product FF-MAS (bottom panel) are shown.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
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Description

Lanosterol 14- α -demethylase, also known as cytochrome P450 (CYP) isoform CYP51A1, is a heme-containing demethylase and member of the CYP450 superfamily that demethylates lanosterol (Item No. 19521) to generate sterol precursors in the synthesis of cholesterol (Item Nos. 39088 | 9003100).^{1,2} It is ubiquitously expressed with higher levels found in the testes and ovaries and has a globular structure that is composed of a hydrophobic substrate channel, a substrate-binding cavity, and a heme-iron cofactor conjugation region.^{2,3} Inhibition of lanosterol 14- α -demethylase decreases cholesterol levels and induces differentiation in HL-60 promyeoloblast leukemia cells.⁴ Cayman's Lanosterol 14- α -demethylase (Item No. 32928) protein can be used for ELISA, enzyme activity assay, and Western blot applications.

References

1. Walker, K.A.M., Kertesz, D.J., Rotstein, D.M., *et al.* Selective inhibition of mammalian lanosterol 14 α -demethylase: A possible strategy for cholesterol lowering. *J. Med. Chem.* **36**(15), 2235-2237 (1993).
2. Rozman, D. Lanosterol 14 α -demethylase (CYP51) - a cholesterol biosynthetic enzyme involved in production of meiosis activating sterols in oocytes and testis - a minireview. *Pflugers Arch* **439**(Suppl 1), r056-r057 (2000).
3. Strushkevich, N., Usanov, S.A., and Park, H.-W. Structural basis of human CYP51 inhibition by antifungal azoles. *J. Mol. Biol.* **397**(4), 1067-1078 (2010).
4. Sánchez-Martín, C.C., Dávalos, A., Martín-Sánchez, C., *et al.* Cholesterol starvation induces differentiation of human leukemia HL-60 cells. *Cancer Res.* **67**(7), 3379-3386 (2007).

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