

论著

## 气-质联用研究氟康唑对白念珠菌甾醇生物合成的抑制作用

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**摘要** 目的 为抗真菌药物作用机理的研究提供有力的工具。方法 白念珠菌经药物作用后提取未皂化脂(NSLs), 其中的甾醇组分经衍生化后GC-MS分析, 测定各组分的结构和含量。结果 经氟康唑作用的真菌, CYP51酶受抑制, 使细胞膜内羊毛甾醇和24(28)-亚甲基-24, 25-二氢羊毛甾醇累积, 后者更为明显, 而麦角甾醇合成受阻。结论 GC-MS分析获满意的效果, 可对抗真菌药物阻断真菌麦角甾醇合成通路所引起各甾醇组分的含量变化进行研究。

**关键词** [氟康唑](#) [气-质联用](#) [白念珠菌](#) [甾醇](#)

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## Inhibitory effect of fluconazole on sterol biosynthesis in *Candida albicans* studied by gas chromatography-mass spectrometry

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### Abstract

**AIM** To provide an effective method for studying the mechanism of pharmacological effects of antifungal agents. **METHODS** From *Candida albicans* treated with fluconazole(inhibitor of ergosterol biosynthesis), the nonsaponifiable lipids (NSLs) were extracted and the sterol components of NSLs were separated and analyzed as their *N*-trimethylsilylimidazole derivatives by gas chromatography-mass spectrometry(GC-MS). **RESULTS** Ergosterol was the predominant component of NSLs in control cells but showed a progressive decline during treatment with fluconazole. CYP51 was inhibited, while the lanosterol and trimethyl(24-methylenelanost-8-en-3-ol) were accumulated to high levels, the later was seen more significantly. **CONCLUSION** The satisfactory results are obtained by GC-MS analysis and it can be used to study the inhibition of antifungal agents on sterol biosynthesis with the shift in sterol composition.

**Key words** [fluconazole](#) [gas chromatography](#) [mass spectrometry](#) [Candida albicans](#) [sterols](#)

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