

论著

cAMP-PKA信号通路对L02细胞药物代谢酶CYP3A的调控作用

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摘要 **目的** 探讨cAMP-PKA信号通路对细胞色素P4503A (CYP3A) 在正常肝细胞L02表达中的作用。**方法** L02细胞中分别加入8-溴-环腺苷酸(8-Br-cAMP) 10 $\mu\text{mol} \cdot \text{L}^{-1}$ 及抑制剂H-89 10 $\mu\text{mol} \cdot \text{L}^{-1}$, 培养48 h, 分别采用完整细胞免疫组化法、Western印迹法和红霉素-N-脱甲基法检测细胞中PKA、孕烷X受体(PXR)及CYP3A的表达。**结果** 与正常对照组PKA蛋白表达(211±20)、PXR蛋白表达(0.45±0.14)及CYP3A的活性((0.38±0.02) $\mu\text{mol} \cdot \text{min}^{-1} \cdot \text{g}^{-1}$ 蛋白)相比, 8-Br-cAMP 10 $\mu\text{mol} \cdot \text{L}^{-1}$ 处理后, 细胞PKA蛋白表达(296±18)升高、PXR蛋白表达(0.69±0.21)升高、CYP3A的活性((0.43±0.01) $\mu\text{mol} \cdot \text{min}^{-1} \cdot \text{g}^{-1}$ 蛋白)增强; H-89 10 $\mu\text{mol} \cdot \text{L}^{-1}$ 处理后细胞中PKA蛋白表达(176±14)降低、PXR蛋白表达(0.47±0.13)及CYP3A的活性((0.39±0.05) $\mu\text{mol} \cdot \text{min}^{-1} \cdot \text{g}^{-1}$)减弱, 无统计学差异。**结论** cAMP-PKA信号通路可能是药物代谢酶CYP3A的调控途径之一。

关键词 [环AMP依赖性蛋白激酶类](#) [L02细胞](#) [细胞色素P-450 CYP3A](#)

分类号 [R965](#)

Regulation of cAMP-PKA signal pathway on cytochrome P4503A in L02 cells

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Abstract

OBJECTIVE To observe the effect of cAMP-PKA signal pathway on the activity of cytochrome P4503A (CYP3A) in L02 cells, and to explore the mechanism. **METHODS** L02 cells were treated with agonist 8-Br-cAMP 10 $\mu\text{mol} \cdot \text{L}^{-1}$ and inhibitor H-89 10 $\mu\text{mol} \cdot \text{L}^{-1}$. The expression of pregnane X receptor (PXR) and protein kinase A (PKA) protein were detected by Western blotting and immunohistochemistry. The activity of CYP3A was detected by ultraviolet spectrophotometry. **RESULTS** Compared with the activity of CYP3A ((0.28±0.02) $\mu\text{mol} \cdot \text{min}^{-1} \cdot \text{g}^{-1}$ protein), the expression of PXR (0.45±0.14) and PKA (211±20) in normal control group, the activity of CYP3A ((0.43±0.01) $\mu\text{mol} \cdot \text{min}^{-1} \cdot \text{g}^{-1}$ protein), and the expression of PXR (0.69±0.21) and PKA (296±18) increased in 8-Br-cAMP group while the expression of PKA (176±14) decreased. The activity of CYP3A ((0.39±0.05) $\mu\text{mol} \cdot \text{min}^{-1} \cdot \text{g}^{-1}$ protein) and the expression of PXR (0.47±0.13) were no statistical significance in H-89 group. **CONCLUSION** The cAMP-PKA signal pathway can regulate the CYP3A in L02 cells.

Key words [cyclic AMP-dependent protein kinases](#) [L02 cell](#) [cytochrome P-450 CYP3A](#)

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