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综述

# P-糖蛋白的转运机制及同义单核苷酸多态性研究进展

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摘要 P-糖蛋白不但广泛参与药物在体内的吸收、分布、代谢和排泄过程，也与肿瘤的多药耐药(MDR)密切相关。了解P-糖蛋白的转运机制和影响因素对设计P-糖蛋白的调控剂以及合理用药具有重要意义。单核苷酸多态性（SNP）是P-糖蛋白产生变异的重要影响因素，可决定不同个体对药物治疗的不同应答，人体中存在的非同义和同义SNP均可对P-糖蛋白的转运功能产生重要影响。本文论述了基于ATP-结合盒转运子核苷结合结构域的P-糖蛋白转运机制的研究进展，以及同义SNP 对于MDR的重要调控作用。

关键词 P-糖蛋白； 多药耐药； 单核苷酸多态性； ATP-结合盒

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# Transport mechanism and synonymous single nucleotide polymorphism of P-glycoprotein: research progress

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**Abstract**

P-Glycoprotein(P-gp) is widely involved not only in the drug absorption, distribution, metabolism and excretion but also in multidrug resistance (MDR) in cancer. It is quite important to understand the transport mechanism of P-gp and the influencing factors for designing effective modulators and reason-nably selecting dosage regimen. Single nucleotide polymorphism (SNP) is an important factor to the P-gp mutation, and decides how individuals respond to different medication. Both synonymous and unsynonymous SNP in human influence the functions of P-gp. This paper reviews the research progress in the mechanism of P-gp mediated transport based on structural studies on isolated nucleotide binding domains of ATP-binding cassette(ABC) transporters, and the potential regulation of SNP (especially synonymous) to MDR.

**Key words** P-glycoprotein multidrug resistance single nucleotide polymorphisms ATP-binding cassette

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