

## 基于Caco-2细胞模型研究蝙蝠葛碱的跨膜吸收机制

投稿时间: 2012-04-18 [点此下载全文](#)

引用本文: 高秀蓉,蒋学华,杜青青.基于Caco-2细胞模型研究蝙蝠葛碱的跨膜吸收机制[J].中国实验方剂学杂志,2012,18(15):139~143

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基金项目:成都医学院院级科研课题(CYZ09-008)

**中文摘要:**目的:研究蝙蝠葛碱在Caco-2细胞模型中的跨膜转运机制。方法:采用Caco-2细胞模型,进行A-B和B-A双向转运实验,计算表观渗透系数( $P_{app}$ )、外排比率(ER)和累积转运量,考察蝙蝠葛碱不同质量浓度、细胞两侧pH梯度和螯合剂EGTA对蝙蝠葛碱转运的影响。结果:高、中、低浓度下的ER分别为1.11,4.49和7.24,即中、低浓度下转运有明显极化现象;顶侧pH 7.4和6.5时,ER值分别为3.95和9.38,即pH梯度存在时,蝙蝠葛碱吸收减少,外排增加;加入螯合剂EGTA后, $P_{app}$ ,ER和累积转运量均无显著改变。结论:蝙蝠葛碱的吸收有主动转运机制存在;pH梯度能驱动了蝙蝠葛碱的外排转运,偏碱性环境较酸性环境易于吸收,其吸收途径主要为跨细胞通道转运。

中文关键词:蝙蝠葛碱 Caco-2细胞模型 吸收机制 吸收途径

## Absorption Mechanism of Dauricine based on Caco-2 Cell Line

**Abstract:**Objective: To investigate the absorption mechanism of dauricine based on Caco-2 cell line. Method: Bidirectional transport of dauricine in Caco-2 cell model was used; apparent permeability coefficients( $P_{app}$ ), efflux ratio(ER) and accumulation transport amount were calculated; the effect of drug concentration, pH gradient and EGTA on the bidirectional transport of dauricine were studied. Result: At high, middle and low concentrations the efflux ratio (ER) was 1.11,4.49, 7.24 respectively, so there was significant polar phenomenon for transport of dauricine; at apical lateral when pH was 7.4 and 6.5,ER were 3.95 and 9.38 respectively, so pH gradient could reduce the absorption of dauricine; chelator EGTA couldn't affect the  $P_{app}$ , ER and accumulation transport amount of dauricine. Conclusion: The active transport was included in the absorption mechanism of dauricine,pH gradient could increase the polar phenomenon, transmembrane pathway is the main absorption route for dauricine.

**keywords:**dauricine Caco-2 model absorption mechanism absorption pathway

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