

综述

胚胎干细胞及代谢组学在药物安全性研究中的应用进展

李黎¹, 柴振海², 申秀萍², 刘昌孝^{2,3}

(1. 沈阳药科大学药学院, 辽宁 沈阳 110016; 天津药物研究院 2. 天津市新药安全评价中心, 3. 释药技术与药代动力学国家重点实验室, 天津 300193)

收稿日期 2011-1-30 修回日期 网络版发布日期 2011-11-30 接受日期 2011-5-19

摘要 胚胎干细胞(ESCs)是来源于胚胎囊胚期内细胞团的一类未分化的全能干细胞, 具有无限复制、自我更新和多向分化的生物学特性。ESCs在特定条件下能够被诱导分化成各种特化的器官或组织细胞。这些特定功能的细胞可作为体外实验的模型应用于新药开发早期药物有效性及毒性筛选或安全性预测研究。本文就ESCs的分化, ESCs在药物安全性研究中的应用, 以及ESCs结合代谢组学技术进行药物安全性预测研究的应用进展作一综述。

关键词 [胚胎干细胞](#) [胚泡内细胞团](#) [药物评价](#) [细胞分化](#) [代谢组学](#)

分类号 [R99](#), [R965.3](#)

Progress in application of embryonic stem cell and metabonomics in drug safety research

LI Li¹, CHAI Zhen-hai², SHEN Xiu-ping², LIU Chang-xiao^{2,3}

(1. School of Pharmacy, Shenyang Pharmaceutical University, Shenyang 110016, China; 2. Tiantin Center for Durg Safety Assessment and Research, 3. State Key Laboratory of Drug Delivery Technology and Pharmciokinetics, Tianjin Pharmaceutical Research Institute, Tianjin 300193, China)

Abstract

Embryonic stem cells (ESCs), the undifferentiated pluripotent cells derived from inner cell mass in blastulastage, are characterized by endlessly self-duplication, self renewal and multi- differentiation. Under some special condition, they can be induced differentiation to specialized cells of organs and tissues, which could be considered as the *in vitro* model and applied for drug effectiveness and toxicity screening, and drug safety prediction research in the early phase of novel drug development. This review elucidates the differentiation of ESCs, the applications mediated by ESCs in drug safety evaluation research and ESCs-based metabonomics for drug safety prediction studies.

Key words [embryonic stem cells](#) [blastocyst inner cell mass](#) [drug evaluation](#) [cell differentiation](#) [metabonomics](#)

DOI: 10.3867/j.issn.1000-3002.2011.06.013

通讯作者 刘昌孝 liuchangxiao@163.com

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(1303KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [参考文献](#)

服务与反馈

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [复制索引](#)
- ▶ [Email Alert](#)
- ▶ [文章反馈](#)
- ▶ [浏览反馈信息](#)

相关信息

- ▶ [本刊中 包含“胚胎干细胞”的相关文章](#)
- ▶ 本文作者相关文章

- [李黎](#)
- [柴振海](#)
- [申秀萍](#)
- [刘昌孝](#)
-