

综述

胚胎(胎儿)发育编程中的表观遗传修饰现象

黄偲璇, 徐丹, 汪晖

武汉大学基础医学院药理学系, 武汉 430071

收稿日期 2008-3-10 修回日期 2008-4-15 网络版发布日期 接受日期

摘要

胚胎(胎儿)发育是遗传信息和环境因素相互作用的编程过程。表观遗传是指由非DNA序列改变引起的、可遗传的基因表达水平的改变, 它主要包括DNA甲基化、组蛋白修饰、RNA调控和染色质重塑等现象。表观遗传通过调控基因表达参与发育编程, 如早期发育重编程、基因组印记、X染色体失活和组织分化等事件。当胚胎(胎儿)发育编程受到了饮食或环境因素的影响, 表观遗传修饰可发生改变, 从而影响其表型, 甚至增加成年疾病的易感性。

关键词 [发育编程; 表观遗传修饰; 饮食因素; 环境因素; 成年疾病](#)

分类号

Epigenetic modifications during developmental programming of embryo and fetus

HUANG Cai-xuan, XU Dan, WANG Hui

Department of Pharmacology, Basic Medical School of Wuhan University, Wuhan 430071, China

Abstract

The development of embryo and fetus is a programmed process by which one's genotype interacts with the environment to produce its phenotype. Epigenetics refers to the heritable changes in gene expression without any alteration in DNA sequence. The main epigenetic mediators including DNA methylation, histone modification, non-coding RNAs, chromatin remodeling and so on. By controlling of gene expression, epigenetic modifications play an important role in development programming, such as reprogramming of early development, genomic imprinting, X chromosome inactivation and tissue differentiation. Once the developmental programming of embryo and fetus is disturbed by diet or environmental factors, epigenetic modifications can be changed, the phenotype of the offspring will be then altered. Even worse, the susceptibility of adult diseases in one's later life can be increased.

Key words [developmental programming](#) [epigenetic modification](#) [dietary factors](#); [environmental factors](#) [adult disease](#)

DOI:

通讯作者 汪晖 clbwhcbd-yl@163.com

作者个人主页 黄偲璇; 徐丹; 汪晖

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF\(919KB\)](#)

▶ [\[HTML全文\]\(OKB\)](#)

▶ [参考文献\[PDF\]](#)

▶ [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“发育编程; 表观遗传修饰; 饮食因素; 环境因素; 成年疾病”的相关文章](#)

▶ 本文作者相关文章

- [黄偲璇](#)
- [徐丹](#)
- [汪晖](#)