

猪异种器官移植的人源化修饰 Genetic Modification of Porcine Organs for Human in Xenotransplantation

俞远京 YU Yuan-Jing

中南大学湘雅医学院实验动物学部, 长沙 410078 Xiang Ya Medical College, Central South University, Changsha 410078, China

收稿日期 修回日期 网络版发布日期 接受日期

摘要 利用猪的器官来解决当前人源器官严重短缺,为解决移植器官短缺的可行的途径。用定向基因转移(gene targeting)手段,直接并准确地对 α -1,3半乳糖苷转移酶(α -1,3GT)基因进行同源重组,使 α -1,3GT失活,再结合猪体细胞克隆技术,对其进行人源化改造,减弱或消除排异反应。除对 α -1,3GT进行基因定向修饰外,阻断由异种器官移植而激活的人类补体的串联反应是猪异种器官人源化修饰的另一途径。然而,猪内源性逆转录病毒(porcine endogenous retrovirus, PERV)造成的公共卫生问题,给异种器官移植的前景投下了阴影。因此,即要剔除导致人类排异反应的猪细胞表面的 α -1,3GT及其相关的分子,又要确保猪器官异种移植的安全性,是尚待研究的重大课题。

Abstract: Xenotransplantation (XP) from pig into human has been considered as means to overcome the great lack of donor organ available in transplantation surgery. In order to weaken rejection between human and pig, approaches of gene targeting have been proposed to eliminate "rejection gene" α -1,3GT from porcine cells directly and accurately. α -1,3GT knockout pigs can be produced by nuclear transfer cloning with the porcine cells (knocking out α -1,3GT). Besides the genetic modification of α -1,3GT in porcine cells, there is another technical way to interdict activity of complement in series for human by XP. However, porcine endogenous retroviruses (PERV) during XP has been thought to not be negligible in being transmitted with the xenograft to the human recipient. Therefore, it is importance task that we should not only knockout α -1,3GT and relative molecules from pigs, but also ensure safety in public health of XP from PERV.

关键词 [猪 \$\alpha\$ -1 3GT](#) [定向基因转移](#) [器官异种移](#) **Key words** [\$\alpha\$ -1 3GT of porcine cell](#) [gene targeting](#) [xenotransplantation](#)

分类号

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(0KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [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“猪 \$\alpha\$ -1”的 相关文章](#)
- ▶ 本文作者相关文章
- [俞远京 YU Yuan-Jing](#)

Abstract

Key words

DOI:

通讯作者