中国医学科学院学报
ACTA ACADEMIAE MEDICINAE SINICAE
Medline收录 核心期刊
ISSN 1000-503X CN 11-2237/R

中国医学科学院学报 » 2011, Vol. 33 » Issue (5) :529-532 DOI: 10.3881/j.issn.1000-503X.2011.05.010

应用Solexa技术检测脐血CD34$^+$细胞体外诱导的巨核细胞mRNA表达

王芳,何吉,朱发明,刘晋辉,秦斐,陈舒,徐罡,吕行军,严力行*

浙江省血液中心 血液安全研究卫生部重点实验室,杭州 310006

Analysis of mRNA Expression Profiles of Megakaryocytes from Human Cord Blood CD34$^+$ Cells Ex Vivo Expanded Using Solexa Sequencing

WANG Fang, HE Ji, ZHU Fa-ming, LIU Jin-hui, QIN Fei, CHEN Shu, XU Gang, Lv Xing-jun, YAN Li-xing*

Blood Center of Zhejiang Province, Key Laboratory of Blood Safety Research, Ministry of Health, Hangzhou 310006, China

摘要 目的 应用Solexa技术研究人脐带血CD34$^+$细胞体外诱导巨核细胞的mRNA表达。**方法** 采用密度梯度离心法和免疫磁珠分选系统获取人脐带血CD34$^+$细胞。100 ng/ml 促血小板生成素诱导培养12 d后，应用抗CD41$^+$单克隆抗体免疫磁珠法分选获得巨核细胞和非巨核细胞。应用Solexa技术检测巨核细胞和非巨核细胞的mRNA表达差异。**结果** 获取的Tag初始数量巨核细胞和非巨核细胞分别为3-773-147 和3-533-805个。整个清晰的Tag数量分别为3291132和 2967947个，明显独特的tag数量分别为197769和245-318个。其中上调基因表达数量为1161个，下调为902个。上调Tag表达数量为2717个，下调为1519个。**结论** 巨核细胞和非巨核细胞 mRNA表达存在显著差异，差异基因编码产物与细胞发育、黏附、凋亡、代谢、细胞内及细胞间的信号转导以及免疫应答等功能相关，进一步深入将有助于探讨巨核细胞的表达机制、信号传导及调控机制。

关键词： 巨核细胞 mRNA表达 体外扩增 Solexa测序

Abstract: Objective To investigate the mRNA expression profiles of megakaryocytes (MKs) from human cord blood CD34$^+$ cells *ex vivo* expanded using Solexa technique. Methods CD34$^+$ Cells were isolated using density gradient centrifugation and magnetic activated cell sorting. Cultures were stimulated with recombinant human thrombopoietin (100 ng/ml). After 12 days, the MKs fraction was separated from the non-MKs fraction using an anti-CD41 monoclonal antibody by immunomagnetic sorting. The mRNA expression of MKs and non-MKs was detected by Solexa sequencing. Results We obtained 3773147 and 3533805 Tags from MKs and non-MKs, respectively. The amounts of unambiguous tags were 3291132 and 2967947 and those of distinct tags were 197769 and 245318.The expression of 1161 genes was up-regulated and that of 902 genes down-regulated. The expression of 2717 tags was up-regulated and that of 1519 tags down-regulated. Conclusions MKs and non-MKs have remarkably different mRNA expression profiles. The differential gene-encoded products may be involved in cellular development, adhesion, apoptosis metabolism, intra- and inter-cellular signal transduction, and immune response. Further studies on this topic may clarify the expression mechanism, signal transduction, and regulation mechanisms.

Keywords: megakaryocyte mRNA expression; *ex vivo* expansion Solexa sequencing

Received 2010-10-29;

Corresponding Authors: 严力行 Email: ylx@zjb.org.cn

引用本文:

王芳,何吉,朱发明,刘晋辉,秦斐,陈舒,徐罡,吕行军,严力行.应用Solexa技术检测脐血CD34$^+$细胞体外诱导的巨核细胞mRNA表达[J] 中国医学科学院学报, 2011,V33(5): 529-532

WANG Fang, HE Ji, ZHU Fa-ming, LIU Jin-hui, QIN Fei, CHEN Shu, XU Gang, Lv Xing-jun, YAN Li-xing.Analysis of mRNA Expression Profiles of Megakaryocytes from Human Cord Blood CD34$^+$ Cells Ex Vivo Expanded Using Solexa Sequencing[J] CAMS, 2011,V33(5): 529-532

链接本文:

http://www.actacams.com/Jwk_yxkxy/CN/10.3881/j.issn.1000-503X.2011.05.010 **或**
http://www.actacams.com/Jwk_yxkxy/CN/Y2011/V33/I5/529