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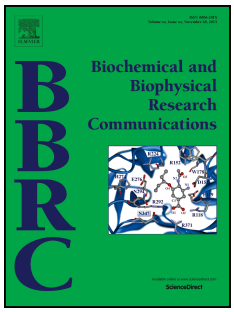

Targeting of the Human *F8* at the Multicopy rDNA Locus in Hemophilia A Patient-Derived iPSCs Using TALENickases

Jialun Pang, Yong Wu, Zhuo Li, Zhiqing Hu, Xiaolin Wang, Xuyun Hu, Xiaoyan Wang, Xionghao Liu, Miaojin Zhou, Bo Liu, Yanchi Wang, Mai Feng, Desheng Liang

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Jialun Pang

Yong Wu

Zhuo Li

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Xiaolin Wang

Xuyun Hu

Xiaoyan Wang

Xionghao Liu

Miaojin Zhou

Bo Liu

Yanchi Wang

Mai Feng

Desheng Liang*

liangdesheng@sklmg.edu.cn

State Key Laboratory of Medical Genetics, School of Life Sciences, Central South University, Changsha, Hunan, China

*Corresponding authors. Address: State Key Laboratory of Medical Genetics, Central South University, 110 Xiangya Road, Changsha, Hunan 410078, China. Fax: +86 731 84478152.

Abstract

Hemophilia A (HA) is a monogenic disease due to lack of the clotting factor VIII (FVIII). This deficiency may lead to spontaneous joint hemorrhages or life-threatening bleeding but there is no cure for HA until very recently. In this study, we derived induced pluripotent stem cells (iPSCs) from patients with severe HA and used transcription activator-like effector nickases (TALENickases) to target the factor VIII gene (*F8*) at the multicopy ribosomal DNA (rDNA) locus in HA-iPSCs, aiming to rescue the shortage of FVIII protein. The results revealed that more than one copy of the exogenous *F8* could be