

# 再生医療と免疫：iPS細胞由来「他家」再生細胞に起こりうる免疫反応

Possible immune response against iPS-derived regenerated cells in allogenic transplantation

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## KEY WORDS

iPS細胞ストック, ES細胞, NK細胞, マイナー組織適合性抗原, KIR-リガンド不一致

## SUMMARY

In regenerative medicine, the main cell source is expected to be pluripotent stem cells that will be used in allogeneic setting, and therefore the issues concerning "transplantation immunology" should be considered. Although induced pluripotent stem cell (iPSC) technology has been invented in Japan by which autologous pluripotent stems can be produced, the major strategy to use this technology is to make iPSCs that can be used in allogeneic setting, because of cost and time-consumption problems in producing individual iPSCs. In this case, HLA should be matched between donor and recipient so that T cells may not reject the graft. To this end, at present HLA haplotype homozygous iPSC stock cell lines have been produced and provided for general use. However, immunological issues still remain even in this setting, which will be focused in this article. Recently, several methods have been raised to delete HLA in pluripotent stem cells, expecting that the regenerated cell will not be rejected ; however, things are not so easy. This article will introduce current status of this filed and discuss the issues to be solved.

## はじめに

再生医療の世界では、ES細胞やiPS細胞を軸に戦略が練られている。ES細胞を材料に再生組織を作製する場合は、基本的に「他家」移植になる。iPS細胞は体細胞から作製できるために、登場した当時には自家移植による再生医療が期待されたが、時間的あるいは経済的な制約が大きいことから、現在は他家移植に適用するという戦略を基本にして開発が進められている。移植片に対する免疫反応は主にT細胞によるものであるため、その免