公開版

平成 30 年 6 月 26 日

医療分野国際科学技術共同研究開発推進事業
戦略的国際共同研究プログラム (SICORP カナダ)
事後評価結果コメント

研究開発課題名	細胞移植治療の実現に向けた細胞アイデンティティー制御
研究開発機関名	京都大学
研究開発代表者名	山田　泰広

Final Review Report (Nagy-Yamada team)

Project's Name	Directing Cellular Identity to Move towards Progenitor Cell Therapies
Comments	The goal of this team is the characterization of the epigenetic states accompanying cell identity changes during reprogramming and differentiation. This team aimed to develop the cell products better suited for disease modeling and translation to regenerative medicine applications by improving reprogramming techniques and control over cell-state changes to multiple fate destinations. Following this aim, the team has achieved excellent outcomes as described below. The Nagy group completed the Project Grandiose, which should be quite useful for not only the research group members but also all the scientists of the field. As for interrupted reprogramming, establishment of the new transgenic reprogrammable mouse lines will bring about new insights on "epigenetic memory" during reprogramming. Excellent works on the in vivo reprogramming and the relationship between the stability of genomic imprinting and autonomous developmental potential were carried out by the Yamada group. Although it is still underway, optimization of small scale ChIP by the Shinkai group seems hopeful and will be utilized by the other groups on collaboration base. The Ellis group and the Tremblay group carried out the studies on the disease models of neural system and the clinical application of myoblast transplantation, respectively. Based on these studies, the team members published excellent paper in the high rank journals such as Cell. Thus, scientific achievement is highly plausible. However, there remains a serious concern in spite of the high scientific achievement. It is the lacking of "significant value for improving reprogramming techniques and control over cell-state changes to multiple fate destinations, which in turn will result in cell products better suited for disease modeling and translation to regenerative medicine applications", which is emphasized in the research proposal.　The major reason of this concern is that the team has dealt with only the highly artificial cells, which would be quite difficult to be used in human therapeutics.

以上