

CONFIDENTIAL

**Regenerative Medicine Minnesota
Progress Report
Due: May 30, 2016**

Grant Title: Post-Doctoral Scholar in Regenerative Medicine

Grant Number: MRM 2015 PDSCH 001

Requester: Kyung-Dal Choi

Project Timeline: May 1, 2015 – April 30, 2016

Brief description:

Blood disorders are practically treated with transplant of Hematopoietic stem cell (HSC) in healthy donor's bone marrow. However, most patients face various limitations including finding genetic-matching donor, potential contaminations from diseased tissues in bone marrow, and graft failure. Recently, cell fate conversion by direct reprogramming is promising approach to generate target cells for future application in regenerative medicine. My research project aimed to discover new technology to convert somatic cells into blood cell fate and to generate transplantable hematopoietic stem cells. This research would have a significant impact to develop alternative sources for bone marrow transplantation of HSC, and will open a new treatment option that would allow a patient's own cells to be reprogrammed into hematopoietic stem cells and implanted back in their body to treat leukemia and other types of blood cancer.

Outcome:

Since I receive RMM fund, I could concentrate on my proposed researches. Especially, I could strengthen my techniques on in vitro gene transfer to somatic cells and in vivo assays for hematopoietic stem cells. During the study, I observed short-term engraftment of reprogrammed somatic cells in bone marrow, and increased engraftment by addition of specific gene, BCR-ABL. These results are promising preliminary results, and will be applied to future experiments for generation of long-term engraftable isogenic HSC from somatic cells.

My future career goal is becoming faculty in academia, and I have strong interests on regenerative medicine on hematopoietic researches. In addition to superior research accomplishment, extramural fund is also critical to be recruited for the position. Thus, I could learn to build my future research interests and skills for writing grant through RMM research program. This will be great experience to apply K awards to transit my career into next step.

I submitted abstract for this study obtained during funding periods, and will attend and present poster at the ISSCR 2016.

Responsible Spending:

Fund was used up all the fund for my salary, fringe, and travel costs.