HYUNG-MIN CHUNG

PROFESSOR

DEPT. OF STEM CELL BIOLOGY,
SCHOOL OF MEDICINE

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Educations

1987 B.S., Konkuk University, Seoul, Korea
1989 M.S., Konkuk University, Seoul, Korea
1993 Ph.D., Konkuk University, Seoul, Korea

Professional Background

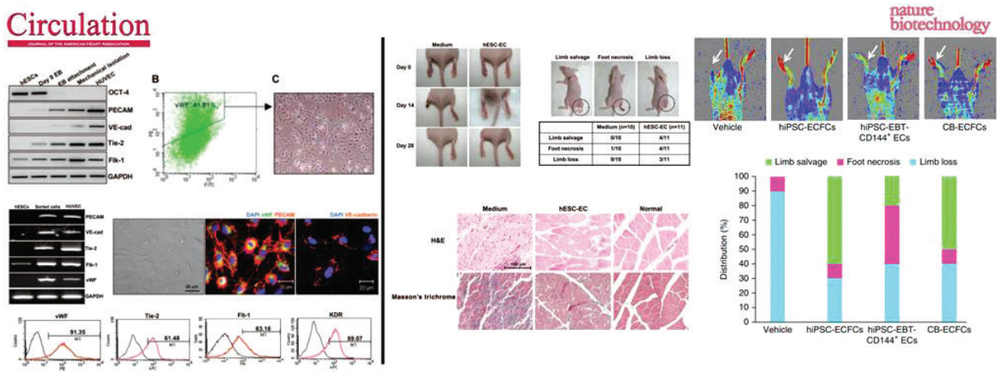
2014-Present Embryo research Senior member: National Bioethics Committee
2014-Present Central Pharmacy committee member: Ministry of Food and Drug safety
2013-Present Executive Director: Korea Society for Stem cell Research (KSSCR)
2013-Present Senior Consultant: Health policy committee, Ministry of Health and Welfare
2013-Present Professor: School of Medicine, Konkuk University
2012-Present Faculty Member: The Korean Academy of Science and Technology
2012-Present Operating committee member: National Stem Cell Bank, Ministry of Health and Welfare
2009-Present National LMO committee member: ICT and Future Planning, Ministry of Science
2006-2013 Professor: Department of Biomedical Science, CHA University
2001-2006 Associate Professor: Department of Biomedical Science, CHA University
1997-2001 Assistant Professor: Department of Biomedical Science, CHA University

Top 5 Publications

- Huang X, LeeMR, Cooper S, Hangoc G, Hong KS, **Chung HM**, Broxmeyer HE. Activation of OCT4 enhances ex vivo expansion of human cord blood hematopoietic stem and progenitor cells by regulating HOXB4 expression. Leukemia 2016 Jan;30(1):144-153
- Prasain N, Lee MR, Vemula S, Meador JL, Yoshimoto M, Ferkowicz MJ, Fett A, Gupta M, Rapp BM, Saadatzadeh MR, Ginsberg M, Elemento O, Lee Y, Voytik-Harbin SL, **Chung HM**, How E, O'Neill CL, Medina RJ, Stitt AW, Murphy MP, Rafii S, Broxmeyer HE, Yoder MC. Differentiation of human pluripotent stem cells to cells similar to cord-blood endothelial colony-forming cells. Nat Biotechnol 2014 Nov;32(11):1151-1157
- Lee MO, Moon SH, Jeong HC, Yi JY, Lee TH, Shim SH, Rhee YH, Lee SH, Oh SJ, Lee MY, Han MJ, Cho YS, **Chung HM**, Kim KS, Cha HJ. Inhibition of pluripotent stem cell-derived teratoma formation by small molecules. Proc Natl Acad Sci 2013 Aug27;110(35)E3281-90
- Joo HJ, Kim H, Park SW, Cho HJ, Kim HS, Lim DS, **Chung HM**, Kim I, Han YM, Koh GY Angiopoietin-1 promotes endothelial differentiation from embryonic stem cells and induced pluripotent stem cells. Blood 2011 Aug 25;118(8)2094-2104
- Cho SW, Moon SH, Lee SH, Kang SW, Kim J, Lim JM, Kim HS, Kim BS, **Chung HM**. Improvement of postnatal neovascularization by human embryonic stem cell derived endothelial-like cell transplantation in a mouse model of hindlimb ischemia. Circulation 2007 Nov 20;116(21)2409-2419

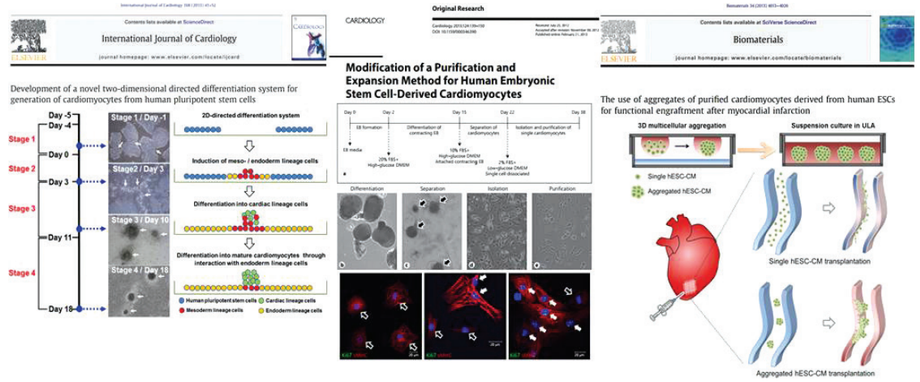
RESEARCH INTERESTS

1. Functional Endothelial Progenitor Cells Derived from Human Pluripotent Stem Cells



Our research is mainly focused on the generation of functional cardiovascular lineage cells, such as endothelial progenitor cells and cardiomyocytes. Endothelial progenitor cells (EPCs) have the ability for neovascularization and humoral angiogenic secretion in ischemic tissues. However, adult EPCs have limitations as a therapeutic cell source due to their very small numbers and the lack of an in vitro expansion technique. To overcome the limitations of insufficient cell numbers, we have developed a simple induction system for human pluripotent stem cell (hPSC)-derived EPCs, and have defined their functionality in vitro and in vivo. In the last decade, we have published over 30 SCI grade papers and have registered more than 10 patents for hPSC-EPC related studies.

2. Application of Cardiomyocytes Derived from Human Pluripotent Stem Cells



Another of our research interests is in the development of techniques for effective generation of highly purified hPSC-derived cardiomyocytes, and their application as a therapeutic cell source to treat myocardial infarction. The heart is the one of the most important organs in the body. However, the adult human heart has a restricted regenerative capacity. Thus, hPSC-derived cardiomyocytes have been considered a unique cell source for the ischemic heart. Recently, we have reported a differentiation and purification system for hPSC-derived cardiomyocytes, and demonstrated improvement in myocardial infarction following transplantation of hPSC-derived cardiomyocytes.