DONG WOOK HAN

PROFESSOR /
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DEPT. OF STEM CELL BIOLOGY,
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Educations

2001 B.S., Konkuk University, Seoul, Korea
2003 M.S., Konkuk University, Seoul, Korea
2008 Ph.D., Konkuk University, Seoul, Korea

Professional Background

2016-Present Professor: School of Medicine, Konkuk University
2016-Present Editorial board member: Journal of Biological Chemistry
2014-Present Director: Max Planck Partnergroup, MPPG-KU
2014-Present Associate member: Korean Academy of Science & Technology (KAST)
2011-Present Director: Stem Cell Research Center, Institute of Biomedical Science & Technology, Konkuk University
2011-Present President Trust Professor: School of Medicine, Konkuk University
2011-2015 Associate professor: School of Medicine, Konkuk University
2008-2011 Post-doctoral fellow: Department of Cell and Developmental Biology, Max Planck Institute for Molecular and Biomedicine, Germany
2005-2008 Visiting scientist: Department of Cell and Developmental Biology, Max Planck Institute for Molecular and Biomedicine, Germany

Top 5 Publications

■ Lim KT, Lee SC, Gao Y, Kim K, Song Q, An SY, Adachi K, Jang YJ, Kim J, Oh K, Kwak TH, Hwang SI, You JS, Ko K, Koo SH, Sharma AD, Kim JH, Hui L, Cantz T, Schöler HR, **Han DW**. Small Molecules Facilitate Single Factor-mediated Hepatic Transprogramming. Cell Reports 2016 (in press)

■ Kim SM, Flaßkamp H, Hermann A, Araúzo-Bravo MJ, Lee SC, Lee SH, Seo EH, Lee SH, Storch A, Lee HT, Schöler HR, Tapia N, **Han DW**. Direct conversion of mouse fibroblasts into induced neural stem cells. Nature Protocol 2014 Apr;9(4):871-81

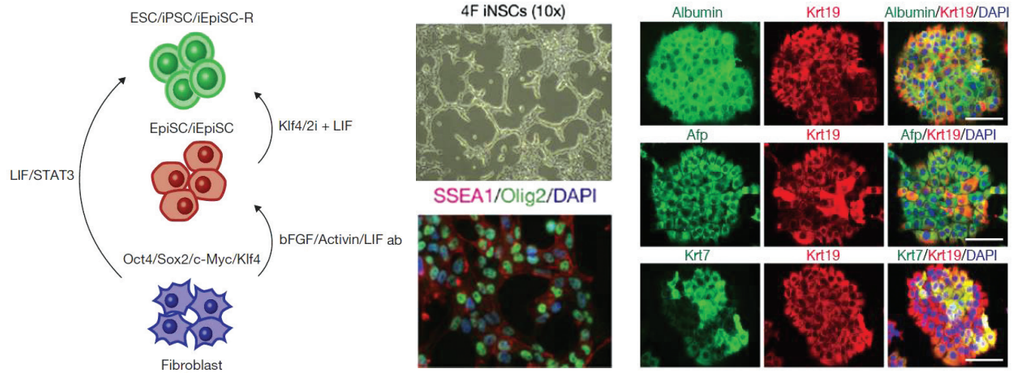
■ **Han DW**, Tapia N, Hermann A, Hemmer K, Höing S, Araúzo-Bravo MJ, Zaehres H, Wu G, Frank S, Moritz S, Greber B, Yang JH, Lee HT, Schwamborn JC, Storch A, Schöler HR. Direct reprogramming of fibroblasts into neural stem cells by defined factor. Cell Stem Cell 2012 Apr 6;10(4):465-72

■ **Han DW**, Greber B, Wu G, Tapia N, Araúzo-Bravo MJ, Ko K, Bernemann C, Stehling M, Schöler HR. Direct reprogramming of fibroblasts into epiblast stem cells. Nature Cell Biology 2011 Jan;13(1):66-71

■ **Han DW**, Tapia N, Joo JY, Greber B, Araúzo-Bravo MJ, Bernemann C, Ko K, Wu G, Stehling M, Do JT, Schöler HR. Epiblast stem cell subpopulations represent mouse embryos of distinct pregastrulation stages. Cell 2010 Nov 12;143(4):617-27

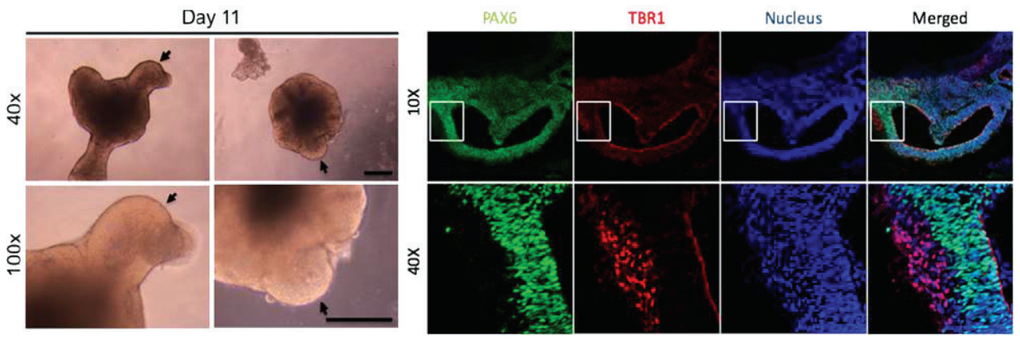
RESEARCH INTERESTS

1. Direct Conversion of Somatic Cells to Neural Stem Cells and Hepatocytes/hepatic Stem Cells



Recent studies have reported that defined sets of transcription factors can directly reprogram differentiated somatic cells to a different type of differentiated cell, without passing through a pluripotent state. However, the restricted proliferative and lineage potential of the resulting cells limits the scope of their potential applications. Recently, we successfully generated induced epiblast stem cells (iEpiSCs), neural stem cells (iNSCs) and hepatocyte/hepatic stem cells (iHep/iHepSCs) from somatic cells.

2. Generation of Brain Organoids from Pluripotent Stem Cells



Organoid models are a major technological breakthrough and have become an essential tool for many basic biological and clinical applications. In vitro modeling of physiological 3D environments facilitates accurate studies in a wide range of in vivo biological processes, including tissue renewal, stem cell/niche functions, and tissue responses to drugs, mutations or damage. Recently, we generated 3D brain organoids from human pluripotent stem cells and used them to establish neurodegenerative disease models in vitro.