



Thu., **2 May**, 4:00pm



Jukhyun Bio Auditorium(RM.121)



School of Life Sciences

Seminar Series

No.
2019-09

Korean

Stem Cells, Cell Reprogramming and Gene Editing for Neurodegenerative disease therapy



Speaker | Jongpil Kim, Ph.D.



Affiliation | Dongguk University



Host | Prof. Jihwan Park



광주과학기술원 생명과학부

Gwangju Institute of Science and Technology School of Life Sciences

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Speaker
Jongpil Kim, Ph.D.

Education/Experience

1998	B.S., Dept. of Biology, Dongguk University
2001	M.S., Dept. of Life Science, GIST
2008	Ph.D., Dept. of Neurobiology, Columbia University, NY
2008-2012	Postdoctoral Associate, MIT/Whitehead Institute (PI: Rudolf Jaenisch)
2012-present	Associate Professor, Dongguk University

Abstract

Recent advances in direct reprogramming have garnered considerable interest for human disease modelling and cell replacement strategies. We are interested in developing new technologies for the treatment of neurodegenerative diseases such as Parkinson & Alzheimer's disease using nanotechnology. Recently, we reported that electromagnetized gold nanoparticles facilitate an efficient direct lineage reprogramming into induced dopamine neurons which provide a proof of principle for lineage conversion as a potentially viable and safe therapeutic strategy for the treatment of Parkinson disease (Nature Nanotechnology, 2017). Moreover, we have reported the generation of induced neuron-based model of sporadic Alzheimer's disease, and used this system to explore the pathogenic mechanisms resulting from the sporadic Alzheimer's disease risk factor APOE 3/4. These results demonstrate in proof of principle the utility of induced neuron-based modelling of Alzheimer's disease for therapeutic discovery (Brain, 2017). Finally, I will discuss the recent updates on the in vivo gene targeting using Cas9 nanocomplexes as a novel therapeutic agent for Alzheimer's disease (Nature Neuroscience 2019).