



The Singapore Bioimaging Consortium (SBIC)
presents a seminar on

**“Rejuvenation of Skin Fibroblasts for
Tissue Repair and Age Reversal”**

Speaker: Professor Sun Yi
Translational Center for Stem Cell Research
School of Medicine
Tongji University

Host : Dr Han Weiping

Date : Friday, 6 April 2018

Time : 11.00am – 12.00pm

Venue : SBIC Seminar Room
11 Biopolis Way
Level 2, Helios Building, Singapore 138667
(Please enter via Level 1)

Abstract

Human aging occurs at the cellular level including stem cells (SCs), which greatly limits autologous SC applications in elderly individuals, unless youthful SCs were preserved at a young age. Here we report *in vitro* effective chemical conversion of fibroblasts from young and aged donors into youthful mesenchymal SC-like cells, which we called “induced and rejuvenated” MSCs (irMSCs). Our induction method appeared to erase aging properties and reset irMSCs from various aged donors to a juvenile state with lengthened telomeres, enhanced growth and tri-lineage differentiation potentials, reduced aging gene expression, as well as down-regulation of age-related DNA damage and epigenetic markers γ H2Ax and H4K20me3. IrMSCs, but not bone-marrow-derived MSCs, from aged donors are capable of bone and cartilage repair *in vivo* without tumor formation. More strikingly, intravenous transfusion of irMSCs into old-aged NOD/SCID mice led to rejuvenation of multiple organs and prolonged lifespan. Taken together, we potentially created youthful autologous cells for age-reversal.

About the Speaker

Sun Yi Eve, Professor of Tongji University, tenured professor of University of California, Los Angeles. Dr Sun was graduated from Fudan University and got the bachelor's degree, then study neurobiology at the Case Western Reserve University in the United States and postdoctoral research at Harvard University. She has been teaching at the UCLA School of Medicine, since 2001. From year 2009, she got back to Tongji University School of Medicine, as director of the department of regenerative medicine, and stem cell research center. In 2010, she set up the Translational Stem Cell Research Center at Tongji hospital affiliated Tongji University, and take the Director of the clinical center. Dr Sun focused on the study of process of intracellular signaling pathways and the mechanism of epigenetic regulation neural stem cells

differentiation into specific neurons and glial cells, also including DNA methylation, histone modification and non-coding microRNAs research. In 2010, she got the respective expert of "one thousand plan". She also work as the reviewer of Nature, Science, Cell, Cell Stem Cell and other international well-known journals. As a corresponding author, Professor Sun publishes many highlighted paper in Science, Cell, Cell Stem Cell, Nature Neuroscience, Nature Medicine, Neuron, PNAS journal, ect. She take many projects from National Science Fund Committee and 973 project as well.

--- Admission is free and all are welcome ---