**Title: Light the Hope of Incurable Diseases**

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***Abstract***

Lack of autologous grafts leads to the development of tissue engineered small diameter blood vessels in cardiovascular repair and regeneration. Hair follicle contains multipotent progenitor cells than can be easily isolated, proliferated and subsequently differentiated into tri-lineages towards to adipocytes, osteoblasts, chondrocytes and smooth muscle cells, offering rich source of autologous stem cell in cardiovascular tissue engineering. We develop novel method for isolating smooth muscle cells from hair follicle. To this end, we construct DNA plasmid encoding EGFP under the control of smooth muscle ɑ-actin promoter (termed P-SM-EGFP), package the P-SM-EGFP into viral particles and transduce the viral particle into hair follicle stem cells(HF-SCs). When the EGFP-expressing cells appear among HF-SC, they were sort out with flow cytometer and termed as hair follicle derived smooth muscle cells (HF-SMC). The HF-SMC expressed biomarkers of vascular smooth muscle cells, such as: ɑ-actin, calponin, myosin heavy chain, ɑ-actinin, smooth muscle 22 from immunofluorescence, western blot and RT-PCR. When embedded in the fibrin hydro gel, the HF-SMC compact the fibrin hydro gel to cylindrical constructs that are 4mm in diameter and 5 cm in length.

***Biography***

Dr. Li Wang now is a professor and vice director of Pathabiology Department, the key Lab of Educational Ministry, Jilin University. He earned his B.Sc. in medicine, M.Sc. in toxicology and Ph.D. in biochemistry at Norman Bethune University of Medical Sciences. From 1992 to 2000, Dr. Li Wang worked with Professor George in skin tissue engineering and wound healing at the Zurich University Hospital., Zurich, Switzerland. In Dermatology, he developed novel bioreactor microcarrier system (Bio-MCCS) to produce autologous keratinocytes, melonocytes and fibroblasts in large scale using biodegradable micro beads as carriers for cell culture and cell delivery vehicles, and spinning bottle as fermented tank. Very promisingly he put the Bio-MCCS into clinical trials to treat hard to heal lug ulcers and stable vitiligo with great success. Since then, he moved to the States, joining Dr. Fox, working on stem cell tissue engineering and wound healing in the Chemical and Biological Engineering at State University of New York.