PAGE MORTON HUNTER DISTINGUISHED SEMINAR SERIES

Young-sup Yoon, MD, Ph.D

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Dr. Young-sup Yoon is a Bruce R. Logue Professor of the Department of Medicine, Division of Cardiology, School of Medicine, Emory University. He received his M.D. in Medicine from Yonsei University and earned his Ph.D. in Cardiovascular Biology, Yonsei University. Thereafter, he completed internal medicine residency, cardiology fellowship at Yonsei. He then came to the US and completed post-doctoral training at Tufts University and became an Assistant and Associate Professor at the same place. He then moved to Emory University as a Director of Stem Cell Biology and became Professor and Endowed Chair. Dr. Yoon is a member of American Society for Clinical Investigator (first among Korean graduates) and a Fellow of American Heart Association. His pioneering research focuses on innovative regenerative therapies for cardiovascular disease. He employs a multifaceted approach involving stem cells, directly reprogrammed cells, and engineering techniques to generate cardiac and vascular cell types. Dr. Yoon is widely acknowledged as a highly prolific and esteemed researcher and educator. He has authored over 132 research articles including Nature Medicine, Nat Cell Biol, Nat Biomed Eng, Circulation, Circ Res, ACS Nano, and contributed to 9 book chapters. He has been continuously funded by NIH since 2004. His lab produced 19 professors, 39 PhD and post-doctoral trainees, and 120 undergraduate researchers.

Cardiovascular Regeneration with iPSCs, direct reprogramming and engineering

Ischemic cardiovascular disease is the most common health burden worldwide. The discovery of stem or progenitor cells has provided new hope for many patients with advanced diseases, because cell therapy could alleviate ischemia by forming new vessels. Over the last decade, two new developments have emerged for cell-based therapy for cardiovascular disease: human pluripotent stem cell-derived endothelial cells (ECs) and directly reprogrammed or induced endothelial cells. I will present the recent development on these two types of cells in terms of preclinical development. Moreover, we have also been working on simultaneous reprogramming of somatic cells into a tissue-like structure, referred to as reprogrammed cardiovascular tissue (rCVT), which includes ECs, smooth muscle cells, and cardiomyocyte,. Implantation of this rCVT onto the infarcted mouse heart reduced regional cardiac strains and improved cardiac function via direct cellular contribution, paracrine effects, and scaffolding effects.

September 19, 2024 • 3:30 p.m.

Location:

111 Rhodes Annex, Clemson University

Department of BIOENGINEERING
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