The 126th iCeMS SEMINAR

Mon 26 Nov 2012
17:00-18:00

Human ESC-Derived Cardiomyocytes Integrate and Suppress Arrhythmias in a Guinea Pig Infarct Model

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Venue: 2nd Floor Conference Room
iCeMS West Building, Kyoto University

Transplantation studies in mice and rats have provided exciting proof-of-concept for the use of hESC-derived cardiomyocytes (hESC-CMs) in cardiac repair, but two critical issues related to their electrophysiological behavior in vivo remain unresolved. First, it has not be determined whether hESC-CMs are capable of undergoing hESC-CMs appropriate electromechanical integration following transplantation in injured hearts, as would be necessary for them to provide new force generating units during systole. A second, related uncertainty is whether their transplantation will increase or decrease the incidence of arrhythmias. Here we use a novel guinea pig model to show that hESC-CM grafts can indeed couple with host muscle in both intact and injured hearts and that their transplantation substantially enhances the electrical stability of injured hearts.

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