BDR SEMINAR in Kobe

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Friday, April 19, 2019

16:00-17:00, 7F Seminar Room, DB Building A

Making Matured Cardiomyocyte from Pluripotent Stem Cells—Current Hurdles and Novel Approaches

Summary

Advances in the last decade enable us to generate cardiomyocytes efficiently from pluripotent stem cells and the first-in-human trial of iPS-derived cardiomyocytes to treat heart failure patients is starting. iPS-derived cardiomyocytes can also be used to model heart diseases and to test compound toxicity (e.g. QT elongation). However, due to lack of maturation, applications to disease modeling and toxicology have limited success. Moreover, the molecular mechanism underlying cardiomyocyte maturation in vivo is largely unknown and no quantitative method for the degree of maturity has been established. Here, we demonstrate novel maturation reporter system and transcriptome-based quantitative method. With these methods, we have identified nuclear receptor agonists that enhance cardiomyocyte maturation in vitro.

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