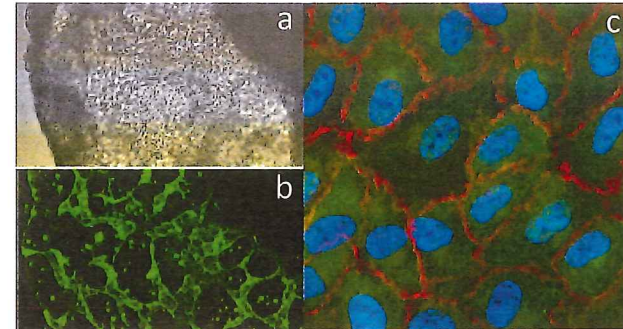


# 18th I<sup>2</sup>plus Seminar

Schedule: 16:30-17:30, July 15th, 2016

Place: Room 508 (Lecture Hall Bld. Katsushika Campus, TUS)

Speaker: Dr. Hiroshi Kohara (Institute of Medical Science, University of Tokyo)



## Mechanical dissection of blood-formation from human induced pluripotent stem cells

~possible roles of biomechanical forces in blood cell development ~

**Abstract:** The vascular endothelium is a cellular layer that acts as an interface between blood flow and the rest of the blood vessel. A striking feature of this tissue is the capability of generating blood cells presumably via hematopoietic stem cells during embryogenesis. In order to gain new insights into our understanding of how to direct functional blood cells from pluripotent stem cells, we have developed an induced pluripotent stem cells (iPSCs)-based model of endothelial-to-blood transition. In this *in vitro* model, CD45(+) blood cells emerge from CD144(+)CD45(-) vascular endothelium in specific culture condition. In the seminar, possibility of biomechanical control of human blood formation by fluid shear stress would be also discussed. a) Phase contrast image of embryoid body formed by human iPSCs. b) CD144(+) vascular network formed in embryoid body. c) Monolayer of blood-forming endothelium.



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