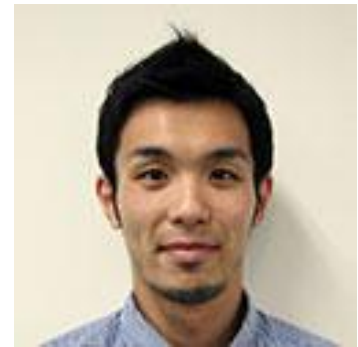


## Tsuyoshi Hirashima

Institute for Frontier Life and Medical Sciences, Kyoto University

Friday, February 10, 2017  
16:00 - 17:00 Auditorium C1F

### Adaptive Multicellular Behaviors as Mechanoresponse for Radial Size Maintenance of Epithelial Tube



#### Summary

On tissue size control, cell-cell communication via cellular behaviors is necessary to regulate maintenance and development of tissues, and a principle underlying the communication is cellular response against mechanical forces generated within the tissues. Here we employed embryonic murine epididymal tubule to study a mechanoresponse system to realize maintenance of radial size in a developing epithelial tube. Combining imaging and mathematical modeling approaches, we found that oriented cell intercalation driven by actomyosin constriction on apical junctions of epididymal cells tends to occur against cell division along the circumferential axis of the tubule. We then hypothesized that actomyosin constriction would be activated as a cellular response against pressure produced due to the circumferential cell division, and verified that the hypothesis using a compression assay. In this seminar, I will propose a possible regime where oriented cellular behaviors responding to the generated anisotropic forces within the tissues would control the radial size of epididymal tubule, and also discuss how the mechanoresponse system with directionality of tissues works in the tissue morphogenesis.

#### Host:

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