

BDR SEMINAR (Kobe & online hybrid)

Mechanobiology Seminar Series presents

Yusuke Toyama

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Thursday, May 29, 2025

11:00-12:00

8F Hall, Integrated Innovation Building (IIB) / Broadcast online via Zoom

*For those who wish to participate online should contact the seminar host.

Clearance of normal and senescence cells through apoptosis from a tissue

Summary

Apoptosis, or programmed cell death, is a crucial mechanism for removing unnecessary or damaged cells during embryonic development, tissue homeostasis, and certain pathological conditions. When a cell undergoes apoptosis within a tissue, it is expelled from its neighboring cells. Research from multiple laboratories, including our own, has demonstrated that this cell extrusion process is powered by coordinated actions of both dying and neighboring non-dying cells.

This presentation covers our latest understanding of how apoptotic cell expulsion process alters mechanical tension in surrounding tissue, and how these force modulations influence neighboring cell fate by triggering cell cycle progression and proliferation. I also plan to address recent findings on how senescent cells undergo apoptosis when in proximity to non-senescent cells, an intriguing phenomenon that challenges the established paradigm that senescent cells are typically resistant to cell death.



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