IMEG Seminar Series

The road to global science

Dr. Alpha Yap

Professor, Institute for Molecular Bioscience, **University of Queensland, Australia**

July 4th, 2022, 14:00~15:00

Mechanotransduction and epithelial homeostasis: sensing tension in neighborhood watch

This seminar series is open to all students and researchers in Kumamoto University.
The Zoom ID and passcode were sent via email. Check your inbox!

Epithelia constitute many of the principal barriers in metazoan bodies and are also common sites for disease, notably cancer and inflammation. Yet, the incidence of epithelial disease is remarkably low, given their constant exposure to injurious agents. Therefore, epithelia must have ways to detect potential disturbances and deal with them. It is now apparent that one path for detection is through tissue mechanics and mechanosensing. Cells constantly exert contractile forces on their neighbors through their cell-cell junctions and possess mechanotransduction pathways at those junctions that detect changes in force. Importantly, altered contractility is a hallmark of many forms of cellular disturbance from apoptosis to transformation. Mechanosensing may then be an early-warning system that allows epithelia to detect, and respond to, homeostatic challenges. Conversely, defects in mechanotransduction may predispose epithelia to disease. I will discuss these ideas in the context of how epithelia use mechanotransduction for cell-cell communication.

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