

2026

9.30 (wed.) 12:10
12:50

12:10-12:15

◆ Introduction

12:15-12:40

◆ Seminar
(Presentation)

12:40-12:50

◆ Q&A

Online
(Zoom)Scan here for
Registration ▶▶https://us02web.zoom.us/webinar/register/WN_3qXjeo95QjaM8XeYkhRpFQ

Supported by Kyushu University, Q-AOS

Cellular responses to mechanical stimuli



Key Words

Mechanical stimuli**Mechanobiology****Spatiotemporal distribution of protein****Professor Susumu KUDO**

Faculty of Engineering, Department of Mechanical Engineering, Kyushu University

After graduating from the Department of Mechanical Engineering, School of Science and Technology, Keio University, he completed the required coursework for the doctoral program at the Graduate School of Science and Technology, Keio University, and subsequently received a Ph.D. in Engineering. He joined the Department of Mechanical Engineering at Shibaura Institute of Technology as a Research Associate and was promoted to Professor in 2010. Since 2012, he has been a Professor in the Department of Mechanical Engineering, Faculty of Engineering, Kyushu University. His research focuses on how cells respond to mechanical forces and how this knowledge can be applied in medicine. He also spent one year as a Visiting Scholar at the University of California, San Diego. He served as Director of the Research Center for Biomedical Engineering at Kyushu University from 2021 to 2024.

Cells regulate a wide range of biological activities in response to chemical stimuli, and the underlying signaling mechanisms have been extensively studied. In contrast, cells in vivo are constantly exposed to mechanical stimuli generated by tissue stretching and contraction, blood flow, and other physical forces. However, compared with chemical signaling, the mechanisms underlying cellular responses to mechanical stimulation remain incompletely understood.

In this seminar, I will introduce intracellular signaling mechanisms activated by mechanical stimulation, with a particular focus on Protein Kinase C (PKC). By presenting our visualization and analysis of the dynamics of PKC and related proteins in cells subjected to mechanical forces, I will highlight the characteristic features of mechanically induced cellular responses and their differences from those elicited by chemical stimuli.