



TARA

Life Science Center for Survival Dynamics
Tsukuba Advanced Research Alliance

From Metalloproteinases to Endocytic Receptor LRP1:

A Journey Through My Time in the UK

12:00 – 13:30, Friday., October 3rd, 2025

Conference room, Building A, TARA Center

***Language: English**

TARA Seminar



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Abstract

Receptor-mediated endocytosis is a key mechanism that controls which molecules enter cells, shaping the extracellular environment and influencing essential biological processes. Our work focuses on low-density lipoprotein receptor-related protein 1 (LRP1), a widely expressed receptor that drives clathrin-dependent uptake of diverse extracellular molecules. In this seminar, I will share our discovery that LRP1 mediates endocytosis of proteolytic enzymes, a process critical for regulating matrix turnover in articular cartilage. I will also highlight recent insights into LRP1's broader roles in cartilage and bone development, intestinal homeostasis, and pulmonary fibrosis, revealing its surprising versatility across tissues and disease contexts.

***Key words: Extracellular matrix turnover, Osteoarthritis, Tissue homeostasis, Bone development, Lung fibrosis.**

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