# 2023 年度　第 1 回　生命科学技術国際卓越講義

東京大学 THE UNIVERSITY OF TOKYO

*World-leading Innovative Lectures in Life Science & Technology The University of Tokyo*

WINGS LST Life Science & Technology

# Peptides for Drug Delivery


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**Date: Friday, 12th, May, 2023**

**Time:**
**10:00AM-10:45AM Lecture (including Question and Discussion)**
**10:45AM-11:00AM Refresh**
**11:00AM-12:00PM Interview Session with Students and Young Researchers**
(Attending an interview session needs another registration (see your e-mail))

**Venue: Zoom** (meeting URL will be sent after registering)

**Participants: Up to 500 participants**

Please register by this QR code or clicking the following link
Registration Form


## Abstract:

There are many strategies developed for the delivery of pharmaceuticals to target tissues sites in high efficiency and specificity. Among them, peptide-based delivery systems are considered to have many advantages over other delivery systems because they are capable of simple and systematic synthesis by both chemical and biological methods, high biocompatibility due to naturally originated amino acid–based structures, versatile combination with other delivery systems. In this lecture, I will introduce some examples of drug delivery systems based on peptides developed by my group: 1) cell penetrating peptides for overcoming the eukaryotic membrane barriers, 2) antibiotic-potentiating peptides for boosting antibiotic efficacy against drug-resistant bacteria, and 3) pH-intein as a peptide linker for selective protein drug delivery.


References:


[1] ***Angew. Chem. Int. Ed.*** 2014, 53, 10086 “Cell penetrating, dimeric α-helical peptides are nanomolar inhibitors of HIV-1 transcription”

[2] ***Adv. Sci.*** 2018, 5, 1800240 “Multimeric amphipathic α-helical sequences for rapid and efficient intracellular protein transport at nanomolar concentrations”

[3] ***J. Med. Chem.*** 2020, 63, 14937-14950 “Proline hinged amphipathic α-helical peptide sensitizes gram-negative bacteria to various Gram-positive antibiotics”

[4] ***Chem. Eng. J.*** 2023, 457, 141229 “Self-cleaving protein linkers with modulated pH-responsiveness: a new platform for selective control of protein drug function”



Organizer: World-leading Innovative Graduate Study Program for Life Science and Technology
Cooperation: Graduate Program for Leaders in Life Innovation, The University of Tokyo
Clinical Research Promotion Center, The University of Tokyo Hospital


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