



Delivery of Biomacromolecules for Therapeutic Genome Editing



Professor Ping Yuan
Qiushi Distinguished Professor
College of Pharmaceutical Sciences
Zhejiang University

Date : 5 August 2026 (Wednesday)
Time : 11:00 am
Venue : Room 1122, William M W Mong Engineering Building, CUHK

Abstract

The clustered, regularly interspaced, short palindromic repeat (CRISPR)-associated nuclease 9 (CRISPR/Cas9) is emerging as a promising genome editing tool to treat diseases in a precise way, and now it has been applicable to a wide range of research in the areas of biology, genetics, and medicine. In vivo delivery of therapeutic genome-editing biomacromolecules provides a promising platform for the treatment of genetic disorders. In this flash talk, I will shortly discuss the barriers in the delivery process and the application of CRISPR/Cas9 system for the treatment of genetic disorders, show several viral and non-viral systems for the targeted delivery of CRISPR/Cas9 and RNA editing system, and how we mitigate off-targets effects at the tissue level. Finally, I also highlight several representative types of non-viral vectors, including polymers and lipid nanoparticles for the intracellular delivery of CRISPR/Cas9. The future prospects of delivery of CRISPR/Cas9 in treating genetic and other disorders will also be briefly discussed.

Biography

Dr. Ping Yuan is a Qiushi Distinguished Professor at the College of Pharmaceutical Sciences, Zhejiang University. His research focuses on biomacromolecular drug delivery, gene editing, gene therapy, and nanomedicine. He is internationally recognized for pioneering work in biomacromolecular drug delivery and the development of delivery platforms for CRISPR-based genome editing. His research has significantly advanced the delivery of nucleic acid medicines and genome-editing systems, accelerating the clinical translation of next-generation therapeutics for cancer and other major diseases.

Dr. Ping has published more than 100 peer-reviewed papers and, as corresponding author, over 40 research articles in leading journals, including Nature Biotechnology, Nature Nanotechnology, Science Translational Medicine, and PNAS during the past five years. He serves as the associate editor of Journal of Controlled Release, sitting on editorial board of Asian Journal of Pharmaceutical Sciences, and Synthetic and Systems Biotechnology. His contributions have been recognized by numerous honors and awards, including the Journal of Controlled Release Emerging Leader Award, the IAAM Scientist Medal, and the National Science Fund for Distinguished Young Scholars of China.

*** ALL ARE WELCOME ***

For enquiries, please contact Ms. Joyce Chan, Department of Biomedical Engineering at 3943 8278