

INORGANIC CHEMISTRY SEMINAR



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“Advances in Genome Editing Therapeutics at Intellia and Pharma Career Opportunities for Chemists”

Abstract: Since its inception, CRISPR as a versatile and powerful genome editing tool has advanced fundamental and translational biochemical research like no other technology has. Among the progresses, its recent advances in therapeutic development are particularly exciting and intriguing. As one of the pioneers in the field, Intellia Therapeutics employs CRISPR to tackle genetic diseases, cancer, and autoimmune diseases. Both in vivo gene therapy and ex vivo cell therapy are in development at Intellia for different indications. We will focus on the in vivo gene therapy, examining how knockout, insertion, and consecutive editing are achieved. In addition, we will discuss the proof-of-concept research in animal models that has enabled clinical trials, as well as recent landmark clinical results. For the ex vivo component, we will discuss the use of CRISPR for cell engineering that produces novel cell therapy with exceeding accuracy and efficacy.

In the second part of the seminar, we will discuss career opportunities in the pharmaceutical industry for chemists. As therapeutic modalities become more complex and the research in biotech/pharma becomes even more multidisciplinary, the need for chemists has extended beyond the traditional medicinal chemistry and analytical chemistry. Lots of new opportunities have emerged, such as synthetic skills for nucleotides, lipids, and nanoparticles, biochemical skills for protein and viral engineering, and physical chemistry skills for high-resolution imaging and ultra-sensitive quantifications, contributing to the both the discovery and the manufacturing phase of drug development