

Development and Evaluation of Novel Tools for Genome and Transcriptome Engineering

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Genetically encoded information in the cell can be permanently or transiently altered at the DNA or RNA level respectively. In recent years, there has been tremendous interest in harnessing RNA-guided CRISPR-Cas nucleases for various genome and transcriptome engineering applications. However, existing technologies often suffer from shortcomings that may hamper their widespread adoption in basic and translational research. In this talk, I will describe our efforts to evaluate the performance of different Cas nucleases in mammalian genome and transcriptome engineering. I will also describe new strategies developed by our laboratory to overcome some of the limitations faced by current technologies and experimental systems.