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Strategies for controlling off-target effects and biological variations in CRISPR/Cas9 genome editing experiments

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The CRISPR/Cas9 system has enabled efficient modification of genes in a variety of cellular systems for studying phenotypic effects of genetic perturbations. However, various levels of off-target effects (OTEs) have been reported. It can be difficult to conclusively determine that the observed phenotypic changes are in fact due to the intended modification of the target gene and not from unintended mutations elsewhere in the genome. In addition, biological variations observed within cultured cells can also confound results and need to be addressed. In this poster, designing and experimental strategies for minimizing and controlling OTEs and biological variations in CRISPR genome editing experiments are summarized, together with orthogonal approaches used to confirm on-target KO effects.

Biography

Michelle Kimberland has her background experience in molecular biology and genetics. She has worked on a variety of diseases/disease areas including hemophilia A, hepatitis C viral replication and womens' health issues. She is currently working at GlaxoSmithKline where her work is focused on genome editing for target selection, target validation and phenotypic assay development.

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