"Deciphering Disease Mechanisms: CRISPR-Cas9 Strategies for Genome Manipulation in Mice"

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***Abstract*:**
The mouse, as genetic model, has significantly contributed to our understanding of biological systems. For decades, manipulation of the mouse genome has relied on expensive and complicated technologies such as transgenesis and gene targeting in embryonic stem cells. The recent advent of CRISPR-Cas9 technology has simplified the way we perform genome manipulation in mice and allows us to use reverse genetics in ways that were unimaginable before. I will discuss the advent of CRISPR-Cas9 technology for genome manipulation in the mouse, strategies commonly used in our laboratory for the generation of genetically modified mice and the use of CRISPR-Cas9 to gain mechanistic insights into motor neuron degeneration associated with the loss of SCYL1, a novel motor neuron disease gene.

Brief Bio:
Stephane Pelletier obtained his Ph. D. from the University of Montreal in 2003 before joining the laboratory of Dr. James Ihle in the department of biochemistry at the St. Jude Children's Research Hospital in Memphis, TN. In 2010, he joined the department of immunology as head of the Embryonic Stem Cell and Genome Editing Laboratory, a facility that generates genetically modified mice for the study of various biological systems. His group works on the pathogenic mechanisms leading to motor neuron demise associated with the loss of SCYL1, a novel motor neuron disease gene.