

New method for improving success of gene editing technique

Posted on Tuesday, Nov 28, 2017

A team of researchers led by a UW-Madison biomedical engineering professor has published a method for significantly improving the success of gene editing with CRISPR-Cas9 technology.

CRISPR has been widely adopted by geneticists because it's much cheaper and easier than previous methods for gene editing. It works in a cut-and-paste fashion, allowing scientists to target specific parts of the genome to be altered, resulting in a change in biological expression of that portion of the genetic code.

While the cutting part of the process is very consistent, making desired changes has been less so, with error rates as high as 50 percent, according to a release from UW-Madison.

The new method improves the chance of correctly rewriting the DNA sequence by a factor of 10, thanks to the addition of a glue-like molecule called RNA aptamer. Using this RNA aptamer, the team led by Krishanu Saha has created a method for delivering a complete CRISPR 'repair kit' to the target site.

"The kit provides not only the molecular scissors, but also the correct template for the cell machinery to fix the DNA cut with," Saha said. "Since the RNA aptamer is strong and very stable, everything we need is getting to the right place within the cell in one fell swoop."

See more at WisBusiness.com.