

Merck receives Canadian CRISPR Nickase Patent

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Patent covers paired Cas9 nickase technology to advance gene therapy and research, reduce off-target effects



Merck, a leading science and technology company and leader in genome editing, has announced that the Canadian Patent Office has allowed Merck's patent application directed to the use of paired CRISPR nickases in eukaryotic cells. The patent provides an important and more specific solution for scientists who need accurate methods when developing treatments for difficult-to-treat diseases that ultimately reach the patient.

This Canadian patent marks Merck's second in Canada and the 13th worldwide. Similar patents were granted in Australia and Europe in late 2018. This latest patent covers paired nickases, which drive specificity through a highly flexible and efficient approach to reduce off-target effects.

Paired nickases are two CRISPR nickases targeted to a common gene target that work together by nicking or cleaving opposite strands of a chromosomal sequence to create a double-stranded break. This process can include an exogenous or donor sequence for insertion in the same manner as Merck's CRISPR integration technology. The requirement of two CRISPR binding events greatly reduces the chances of off-target cutting at other locations in the genome.