





The businesses of Merck KGaA, Darmstadt, Germany operate as EMD Serono, MilliporeSigma and EMD Performance Materials in the U.S. and Canada.

23 CRISPR Patents

Leading the way in genome-editing technology

CRISPR Integration: CRISPR-chrom: Compositions and use of CRISPR/Cas9 to integrate a new sequence of DNA after Fuses chromatin-modulating peptides to the cutting genomic DNA CRISPR/Cas9 protein (the DNA scissors of CRISPR), thereby increasing access to the genome **Patents Received 2**017 **2**018 **2019 Patents Pending** U.K. CANADA EUROPE SOUTH KOREA U.S. JAPAN CHINA ISRAEL INDIA O SINGAPORE BRAZIL **Patents Pending** AUSTRALIA

proxy-CRISPR:

New genome-editing technique that makes CRISPR more efficient, flexible and specific

Opens up the genome for modification of DNA, providing more experimental options, faster results

Patents Received 2019

Patents Pending

Paired Nickase:

Cleavage of Chromosomal Sequences using Dual Nickases

Compositions and use of two Cas9 nickases to cut genomic DNA, optionally followed by integration of new DNA sequence

Patents Received 2018 2019