

## News Release

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# The Life Science Business of Merck KGaA, Darmstadt, Germany to Receive Two More Patents for CRISPR Technology

- **Patents in South Korea and Israel cover integration of an external DNA sequence into the chromosome of eukaryotic cells**
- **Merck KGaA, Darmstadt, Germany continues to support research with genome editing under careful ethical and legal standards**
- **Life Science business to license its CRISPR-related patents to interested parties**

Darmstadt, Germany, February 20, 2018 – Merck KGaA, Darmstadt, Germany, a leading science and technology company and leader in genome editing, today announced that the Korean Intellectual Property Office and the Israel Patent Office have each issued notices granting patent applications for the company's CRISPR technology used in a genomic-integration method for eukaryotic cells.

"These decisions mark the fifth and sixth patent allowances for our unique CRISPR technology to find new treatments for some of the toughest medical conditions faced today, including cancer, hereditary and rare diseases," said Udit Batra, Member of the Executive Board and CEO, Life Science, at Merck KGaA, Darmstadt, Germany. "These foundational integration patents recognize our significant contributions to the genome-editing field and reinforce our commitment to evolving CRISPR technology globally."

The Life Science business of Merck KGaA, Darmstadt, Germany also has patent filings for its insertion CRISPR method in the U.S., Brazil, China, India and Japan. In December 2017, the Intellectual Property Office of Singapore awarded the



business a patent for this technology. Earlier, in June 2017, it was awarded a similar patent by the Australian patent office. The business has also received related patent awards by the European and Canadian patent offices. The Life Science business of Merck KGaA, Darmstadt, Germany is licensing these patents for applications including basic science research, agricultural biotech and therapeutic use.

Merck KGaA, Darmstadt, German recognizes the potential benefits of conducting properly defined research with genome editing because of the breakthrough therapeutic potential. Therefore, the businesses of Merck KGaA, Darmstadt, Germany support research with genome editing under careful consideration of ethical and legal standards. The company has established a [Bioethics Advisory Panel](#) to provide guidance for research in which its businesses are involved, including research on or using genome editing.

These forthcoming, fundamental patents in South Korea and Israel cover chromosomal integration, or cutting of the chromosomal sequence of eukaryotic cells (such as mammalian and plant cells) and insertion of an external or donor DNA sequence into those cells using CRISPR. Scientists can replace a disease-associated mutation with a beneficial or functional sequence — a method important for creating disease models and gene therapy. Additionally, the method can be used to insert transgenes that label endogenous proteins for visual tracking within cells.

CRISPR genome-editing technology, which allows the precise modification of chromosomes in living cells, is advancing treatment options for a variety of medical conditions. CRISPR applications are far-ranging — from identifying genes associated with cancer and rare diseases to reversing mutations that cause blindness.

With a 12-year history in the genome-editing field, the Life Science business of Merck KGaA, Darmstadt, Germany was the first to offer custom biomolecules for genome editing globally (TargeTron™ RNA-guided group II introns and CompoZr™ zinc finger nucleases), driving adoption of these techniques by researchers all over the world. It was also the first to manufacture arrayed CRISPR libraries covering the entire human genome, accelerating cures for diseases by allowing scientists to explore more questions about root causes.

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**About Merck KGaA, Darmstadt, Germany**

Merck KGaA, Darmstadt, Germany, is a leading science and technology company in healthcare, life science and performance materials. Around 50,000 employees work to further develop technologies that improve and enhance life – from biopharmaceutical therapies to treat cancer or multiple sclerosis, cutting-edge systems for scientific research and production, to liquid crystals for smartphones and LCD televisions. In 2016, Merck KGaA, Darmstadt, Germany, generated sales of € 15.0 billion in 66 countries. Founded in 1668, Merck KGaA, Darmstadt, Germany, is the world's oldest pharmaceutical and chemical company. The founding family remains the majority owner of the publicly listed corporate group. Merck KGaA, Darmstadt, Germany, holds the global rights to the „Merck“ name and brand. The only exceptions are the United States and Canada, where the company operates as EMD Serono, MilliporeSigma and EMD Performance Materials.