

News Release

Your Contact

gangolf.schrimpf@emdgroup.com

Phone: +49 6151 72-5577

April 7, 2020

Merck KGaA, Darmstadt, Germany, Awarded Second U.S. Patent for CRISPR Gene-Editing Technology

- **CRISPR-chrom technology improves access to genome for more efficient editing**
- **Only U.S. patent holder in the CRISPR chromatin space**
- **Company driving innovation in CRISPR gene-editing technologies**

Darmstadt, Germany, April 7, 2020– Merck KGaA, Darmstadt, Germany, a leading science and technology company, today announced that the United States Patent and Trademark Office has granted the company’s patent for CRISPR-chrom technology. With this allowance, the company is the only provider with a patent covering the fusion of chromatin modulating peptides to CRISPR proteins, helping to clear chromatin out of the way, increasing access to the genome.

“This award marks our second U.S. CRISPR patent and our 23rd CRISPR-related patent worldwide, and as a leading innovator of CRISPR technology, we will continue to drive innovation and collaborate with scientists around the world to ensure that they have the most advanced gene-editing options,” said Udit Batra, member of the Executive Board, and CEO, Life Science business of Merck KGaA, Darmstadt, Germany.

Because genomic DNA in mammalian cells is wrapped tightly in protein complexes called chromatin, the genomic DNA is often inaccessible to CRISPR. The company’s CRISPR-chrom technology works by fusing chromatin modulating peptides to a CRISPR protein, Cas9 (i.e., CRISPR’s DNA scissors), allowing for more efficient gene



News Release

editing. This work was initially [published in the February 2018 issue of *The CRISPR Journal*](#) and was one of the journal's top five downloaded articles of the year.

The company's Life Science business, a leader in genome editing, conducts research and development to drive improvements in gene-editing technologies.

The company's CRISPR patent portfolio includes granted patents for CRISPR-related technologies covering foundational and alternative genome-editing methods. Patents for its CRISPR integration technology have been granted in Australia, Canada, China, Europe, Israel, Singapore and South Korea. Patents granted in Europe and pending elsewhere cover plasmid or viral vectors encoding CRISPR systems, which are necessary to perform genome modification in eukaryotic cells. Other European patents and pending applications are for protein-RNA nickase compositions.

Merck KGaA, Darmstadt, Germany received its first U.S. patent in February 2019 for its proxy-CRISPR technology, which makes CRISPR more efficient, flexible and specific. The company has successfully out-licensed its CRISPR patent portfolio and continues to license its entire CRISPR patent portfolio for all fields of use. The company is proactively and aggressively pursuing CRISPR patent out-licensing partners for therapeutics, agriculture and research and welcomes such collaboration opportunities.

CRISPR technology is a core competency for the business, which has 16 years' experience with genome editing, spanning from discovery to manufacturing. The company develops technologies in a range of genome-editing applications, including gene knockout, gene integration and CRISPR libraries for genetic screens, among others.

Merck KGaA, Darmstadt, Germany recognizes that genome editing has resulted in major advancements in biological research and medicine. At the same time, the growing potential of genome-editing technologies has opened scientific, legal and societal concerns. Merck KGaA, Darmstadt, Germany supports research with genome editing under careful consideration of ethical and legal standards, and has established an independent, external [Bioethics Advisory Panel](#) to provide guidance

News Release

for research in which its businesses are involved, including research on or using genome editing. It has developed, defined and transparently published a clear operational [position](#) taking into account scientific and societal issues to inform promising therapeutic approaches for use in research and applications.

All Merck KGaA, Darmstadt, Germany news releases are distributed by email at the same time they become available on the EMD Group Website. In case you are a resident of the USA or Canada please go to www.emdgroup.com/subscribe to register for your online subscription of this service as our geo-targeting requires new links in the email. You may later change your selection or discontinue this service.

About Merck KGaA, Darmstadt, Germany

Merck KGaA, Darmstadt, Germany, a leading science and technology company, operates across healthcare, life science and performance materials. Around 57,000 employees work to make a positive difference to millions of people's lives every day by creating more joyful and sustainable ways to live. From advancing gene editing technologies and discovering unique ways to treat the most challenging diseases to enabling the intelligence of devices – the company is everywhere. In 2019, Merck KGaA, Darmstadt, Germany, generated sales of € 16.2 billion in 66 countries.

The company holds the global rights to the name and trademark "Merck" internationally. The only exceptions are the United States and Canada, where the business sectors of Merck KGaA, Darmstadt, Germany operate as EMD Serono in healthcare, MilliporeSigma in life science, and EMD Performance Materials. Since its founding 1668, scientific exploration and responsible entrepreneurship have been key to the company's technological and scientific advances. To this day, the founding family remains the majority owner of the publicly listed company.