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May 11, 2020

Merck KGaA, Darmstadt, Germany Announces Grants of U.S. Patents for Foundational CRISPR-Cas9 Technology

- **Technology provides more tools to fight difficult-to-treat diseases**
- **Life Science business actively licensing its CRISPR-Cas9 technology for therapeutic and other uses**
- **Committed to ethical use of genome-editing technology**

Darmstadt, Germany, May 11, 2020 – Merck KGaA, Darmstadt, Germany, a leading science and technology company, today announced that two of its Life Science business' CRISPR-assisted genome-editing patents have been allowed in the United States. These allowances provide the company with the opportunity to support scientists and researchers in their work to advance and protect gene therapy development programs. The company's Life Science business is in active discussions to license its foundational technology for therapeutic and other uses and is seeking collaboration partners for research and product development.

"This is important news for researchers, as CRISPR-based DNA cleavage and integration are fundamental needs for many genome-editing applications and can be used to develop personalized therapies," said Udit Batra, member of the Executive Board and CEO, Life Science business of Merck KGaA, Darmstadt, Germany. "As a leading innovator of CRISPR technology, we will license this technology to collaborate with scientists to ensure that the full potential of this powerful tool is realized, responsibly and ethically throughout the scientific community. We look forward to continuing our work with academic and industrial



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partners to bring the best of our collective innovations to fight the toughest diseases and improve human health.”

These latest allowances cover the Life Science business’s CRISPR-Cas9 cleavage and integration technology, which allows researchers to replace a disease-associated mutation with a beneficial or functional sequence, or delete such a mutation, commonly referred to as “knock in” and “knock out,” critical methods for the creation of disease models and development of gene therapy.

These grants mark the 25th and 26th CRISPR patents worldwide and third and fourth in the U.S. for the Life Science business of Merck KGaA, Darmstadt, Germany. It has CRISPR patents granted in Australia, Canada, China, Europe, Israel, Singapore and South Korea with related patent filings in Brazil, India and Japan.

CRISPR technology is a core competency for the Life Science business of Merck KGaA, Darmstadt, Germany, which has 16 years’ experience with genome editing, spanning discovery to manufacturing. The company’s Life Science business develops technologies in a range of genome-editing applications, including gene knockout, gene integration and CRISPR libraries for genetic screens. The company’s Life Science business received its first U.S. patent in February 2019 for its proxy-CRISPR technology, which makes genome editing more efficient, flexible and specific.

The Life Science business considers that now is the time for the key CRISPR intellectual property stakeholders to come together to simplify technology access for companies conducting CRISPR-based research via patent pooling agreements. The Life Science business and The Broad Institute announced their collaboration agreement for CRISPR patent licensing in July 2019.

The company 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 led to scientific, legal and societal concerns. Merck KGaA, Darmstadt, Germany supports research with genome editing under careful consideration of ethical and legal standards. It has established an independent, external [Bioethics Advisory Panel](#) to provide guidance for research in which its businesses are involved, including research on or using genome editing and has

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developed, defined and transparently published a clear [Genome-Editing Technology Principle](#) taking into account scientific and societal issues to inform promising therapeutic approaches for use in research applications.

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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.