

## News Release

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## MilliporeSigma Licenses CRISPR Genome-Editing Technology to PanCELLa and Takara Bio USA

- Licenses aim to accelerate drug discovery leading to development of new therapies
- PanCELLa agreement marks MilliporeSigma's first CRISPR license for bioproduction
- Takara Bio USA agreement gives access to MilliporeSigma's CRISPR integration and vector technologies for Takara's vector products and cell engineering services

Burlington, Massachusetts, October 12, 2020 – [MilliporeSigma](#) today announced that it has signed agreements licensing its CRISPR technology to two companies — [PanCELLa](#), a cell therapy firm based in Toronto, Canada, and [Takara Bio USA, Inc.](#), a biotechnology company based in Mountain View, California.

"MilliporeSigma's latest CRISPR licenses are the impetus for drug discovery that promises to accelerate research leading to the development of new therapies," said Chris Ross, interim CEO, MilliporeSigma. "We have been at the forefront of gene-editing innovation for 16 years and continue to work, both ethically and responsibly, with the global scientific community to solve problems by using our patented CRISPR technology."

PanCELLa plans to use MilliporeSigma's CRISPR genome-editing technology to develop novel therapeutics using genetically modified cell lines. MilliporeSigma's technology will be used alongside [PanCELLa's FailSafe™ Cell System](#) to give the manufacturing community additional and safer cellular products to fight difficult-to-treat diseases worldwide. Cell therapy involves injecting genetically modified cells from a donor or a patient's own stem cells to produce a medicinal effect.



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"MilliporeSigma's CRISPR platform allows PanCELLa's FailSafe™ and Cloaking platforms for cell therapy to bring innovative, safe cell therapy solutions to patients worldwide," said Dr. Mahendra Rao, CEO, PanCELLa.

Takara Bio plans to use MilliporeSigma's foundational [CRISPR patent estate](#) to develop vectors and other innovative products to support research using CRISPR as well as cell engineering services, particularly stem cells. Vectors are used by molecular biologists to deliver genetic material into cells, and cell engineering examines the feasibility of new approaches for modifying cellular function, such as gene expression. Both are important fields of medical and biological research. By providing services for stem cell engineering, Takara Bio will give researchers access to engineered cells to accelerate discovery programs.

"We are excited about the new opportunities that this will open up for Takara Bio and our customers," said Carol Lou, president, Takara Bio. "Takara Bio has a long history of enabling innovative research and this is another important step in supporting our customers."

MilliporeSigma's experience in the genome-editing field has led to the most comprehensive portfolio of CRISPR and other advanced genomics technologies impacting every step, from basic research to therapeutic delivery. The company uses its expertise to offer products and services for a range of applications, including gene knockout, targeted integration and mutagenesis, and genetic screening libraries to support research in immunotherapeutics, oncology and infectious disease, among other fields. MilliporeSigma's scientists continue to develop powerful, unique technologies that expand these applications and accelerate health-related research.

The company holds 28 CRISPR-related patents worldwide in methods and composition, including the foundational technology of CRISPR Cas9 for genetic integration in mammalian cells.

MilliporeSigma recognizes that the growing potential of genome-editing technologies has led to scientific, legal and societal concerns. MilliporeSigma supports research with genome editing under careful consideration of ethical and legal standards. MilliporeSigma's parent company, Merck KGaA, Darmstadt,



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Germany, 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 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 the Life Science business of Merck KGaA, Darmstadt, Germany**

The Life Science business of Merck KGaA, Darmstadt, Germany, which operates as MilliporeSigma in the U.S. and Canada, has some 22,000 employees and 59 manufacturing sites worldwide, with a portfolio of more than 300,000 products focused on scientific discovery, biomanufacturing and testing services.

Merck KGaA, Darmstadt, Germany completed its \$17 billion acquisition of [Sigma-Aldrich](#) in November 2015, creating a leader in the \$125 billion global life science industry.

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. For more information about Merck, KGaA, Darmstadt, Germany, visit [www.emdgroup.com](http://www.emdgroup.com).