10 Years of

ers genomics

THE CRISPR
LICENSING
COMPANY

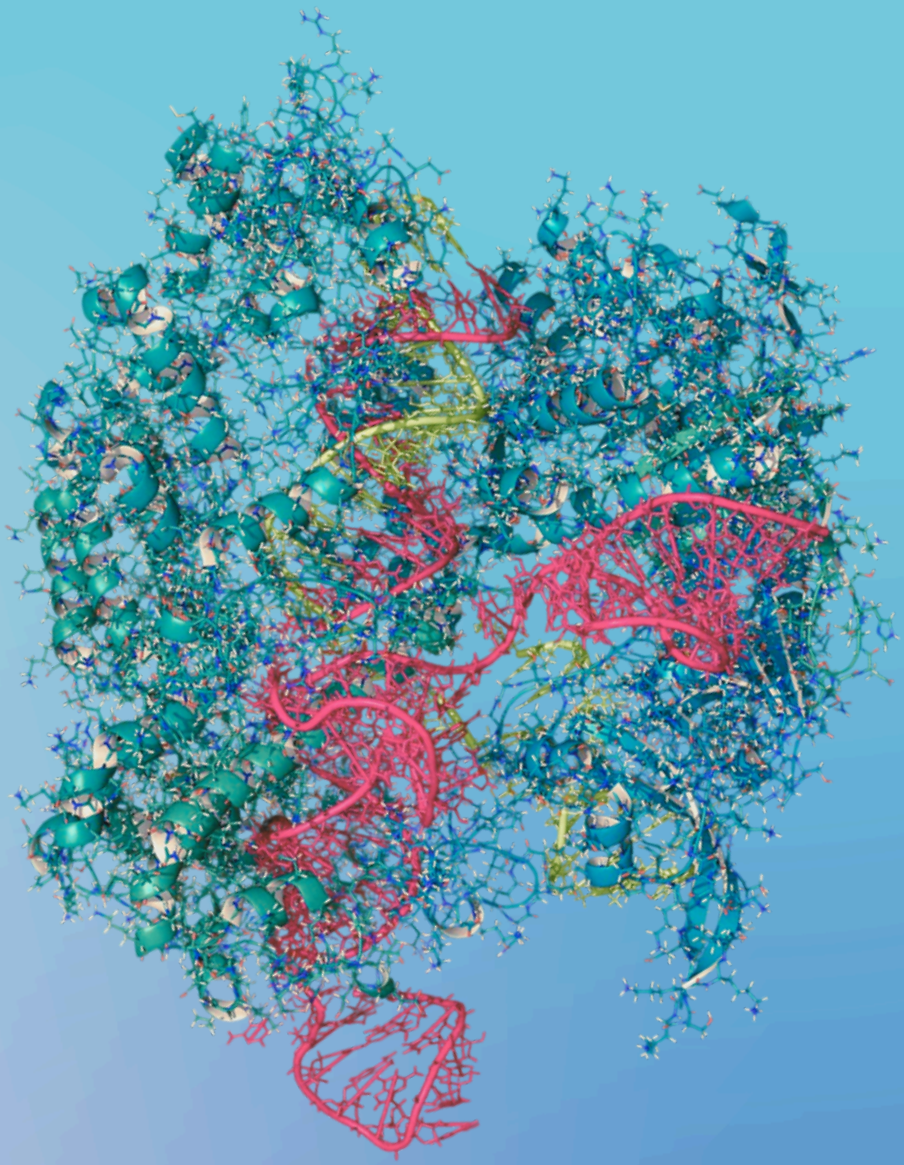


TABLE OF CONTENTS

INTRODUCTION

CRISPR/Cas9 represents a profound breakthrough in biology. What began as a naturally evolved bacterial defence system has transformed into a universal tool for precise and efficient gene editing in virtually any living cell. Elegant in its simplicity and transformative in its potential, this discovery opened new possibilities across medicine, life sciences, agriculture, and beyond.

In the last 10 years, the CRISPR landscape has evolved at remarkable speed. Applications now extend far beyond biotechnology, from agricultural and sustainable energy breakthroughs to synthetic biology. At the same time, the first clinical programmes have progressed from early research to approved therapies. These developments reflect how deeply the scientific community has embraced, refined and expanded on this foundational discovery.

But with such progress comes an important responsibility to ensure this technology is developed responsibly, used ethically and made accessible to those with the vision to drive it forward. ERS Genomics was founded to ensure that the fundamental CRISPR/Cas9 patents developed in collaboration with our colleagues at UC Berkeley and the University of Vienna, would be available under a clear and reliable licensing system. Today, we are happy to see ERS Genomics continue to provide global access to this essential intellectual property, enabling researchers and companies of all sizes to create, discover, and innovate with confidence and transparency.

The story of CRISPR is still unfolding. Over the next decade, CRISPR is poised to redefine what is possible. As it continues to evolve from a revolutionary research tool into a cornerstone of real-world innovation, ERS Genomics remains committed to ensuring thoughtful access, ethical stewardship, and broad collaboration. Our goal is to help every innovator working with CRISPR realise its extraordinary potential to tackle complex challenges, accelerate discovery, and improve lives around the world.

STATEMENT FROM THE CEO

At ERS Genomics, we see every day how CRISPR/Cas9 is reshaping the future of science and industry. What was once a groundbreaking discovery has become a foundational platform that is transforming how we approach innovation across biopharma, life sciences, agriculture, industrial biotech, synthetic biology, and beyond.

As the global leader in CRISPR licensing, ERS Genomics plays a critical role in enabling this progress. By providing access to the most essential intellectual property for CRISPR/Cas9, we ensure that researchers and companies alike can innovate with clarity and confidence. To date, we have signed licenses with over 155 organisations worldwide, from leading pharmaceutical companies to life science tools providers that depend on ERS licensing to underpin their CRISPR-enabled research and commercial programmes.

But innovation does not only come from established industry leaders. Some of the boldest advances are being driven by small teams with limited resources but extraordinary ideas. To support this next wave of pioneers, we recently introduced our Express License, a fast, affordable, and straightforward pathway for startups and early-stage research groups. Specifically designed for organisations with fewer than 15 employees and under $10 million in funding, the Express License makes it possible for smaller players to access the same world-class CRISPR/Cas9 patent portfolio relied upon by industry leaders.

This initiative reflects our broader commitment: to democratize access to CRISPR/Cas9 and ensure that the benefits of this Nobel Prize-winning technology are within reach of innovators of every scale. By lowering barriers to entry, we are empowering more researchers to test ideas, validate discoveries, and accelerate solutions that address global challenges from developing new disease models to advancing sustainable agriculture and biomanufacturing.

Looking ahead, my vision for ERS Genomics is clear. In the years to come, ERS will be recognised not only as the definitive authority on CRISPR/Cas9 licensing but also as the trusted partner that safeguards freedom to operate for an entire generation of innovators. In a crowded and contested innovation landscape, we will continue to provide clarity and confidence: if you are using CRISPR/Cas9, ERS is the partner to ensure your science moves forward with certainty. By securing rights today, companies protect the value of their science, preserve investor confidence, and position themselves for future partnerships, acquisitions, or commercial launches.

John E. Milad
CEO, ERS Genomics

We will also continue to ensure that access remains simple, transparent, and cost-effective, whether you are a global player scaling production or a start-up validating a discovery. In doing so, ERS will be the bridge between pioneering CRISPR science and durable commercial success, enabling our licensees to innovate responsibly, sustainably, and with confidence for decades to come.

TIMELINE OF CRISPR

2006-2010
The Spark of Discovery

Professor Emmanuelle Charpentier, working in Sweden, investigates how bacteria defend themselves against viruses. In Streptococcus pyogenes, she identifies tracrRNA, a small molecule that activates the CRISPR/Cas9 system.

2011
A Pioneering Collaboration Begins

Charpentier begins working with Jennifer Doudna at UC Berkeley. Together, they set out to explore whether this bacterial immune system could be repurposed as a programmable tool for editing DNA.

2012
The Breakthrough Year

May

Charpentier, Doudna, Martin Jinek and Krzysztof Chylinski file the first CRISPR/Cas9 patent application, covering use across bacteria, plants, animals, and humans.

June

Their landmark Science paper describes how Cas9 can be programmed to cut DNA with precision.

December

Several groups, including the CVC (Charpentier, Vienna, UC Berkeley) consortium, demonstrate CRISPR/Cas9 working in living cells, including humans.

2014-2017
Building the IP Foundation

CVC patents begin issuing across the US and Europe, establishing Charpentier and her collaborators as the foundational inventors of CRISPR/Cas9.

2014
ERS Genomics is Born

ERS Genomics founded to make CRISPR broadly accessible. The mission: provide global licenses to the foundational IP for all uses outside of direct human therapeutics, enabling companies of all sizes to innovate with confidence.

2017 – 2020
Expansion and Recognition

CVC patents expand worldwide, covering CRISPR/Cas9 in all cell types.

2020

Charpentier and Doudna receive the Nobel Prize in Chemistry for developing CRISPR/Cas9 as a genome-editing technology.

2023
First CRISPR Therapy Approved

The US FDA approves CASGEVY®, the first CRISPR-based therapy, for sickle cell disease and β-thalassemia. This milestone demonstrates how Charpentier's discovery has moved from the lab to life-changing treatments.

2021-2025
ERS Genomics Expansion and Democratisation

ERS grows to 100+ patents worldwide and launches its Express License to make CRISPR access fast and affordable for start-ups.

2022-2025
IP Reaffirmed Worldwide

Despite numerous patent disputes, CVC maintains its foundational CRISPR/Cas9 global leadership.

TODAY
Empowering Innovators Worldwide

ERS Genomics has licensed 155+ companies across pharma, agriculture, industrial biotech, and life sciences tools, providing secure access to the most comprehensive CRISPR/Cas9 patent portfolio to ensure innovators can advance their research and commercial programmes with clarity, protection, and freedom to operate.

The CRISPR field continues to accelerate. From next-generation therapies, broader disease approvals, and AI-driven precision tools on the horizon, new innovations are expanding what's possible.

OUR LICENSEES

With having signed over 155 licenses globally — ranging from startups to large multinationals, we support companies across Europe, the U.S., Japan, and other major markets in biopharma, life science tools, agriculture, and synthetic biology.

Across industries and around the world, ERS Genomics licensees are using CRISPR/Cas9 with confidence, translating access into real impact. Their experiences demonstrate how licensed access to this foundational technology enables freedom to innovate, collaborate, and accelerate discovery responsibly. Here are how some of our newest partners are turning licensed access into progress that matters:

CATAPULT Medicines Discovery

"This agreement with ERS Genomics opens new opportunities for entrepreneurial scientists. With access to the CRISPR/Cas9 portfolio, we can deliver more breakthroughs together." **— Professor Chris Molloy, CEO, Medicines Discovery Catapult (UK)**

JUMPCODE GENOMICS

"Our license empowers us to use CRISPR/Cas9 to enhance next-generation sequencing, improving sensitivity and uncovering deeper genomic insights."
— Mike Salter, President & CEO, Jumpcode Genomics (USA)

Université de Montréal

"Through this license, we've expanded platform services that give researchers access to genome-wide CRISPR screening and data."
— **Lynda Adam, Director of Technology Transfer, Université de Montréal (Canada)**

DEMOCRATISING ACCESS TO CRISPR

CRISPR/Cas9 has become one of the most transformative technologies of the 21st century, empowering breakthroughs in drug discovery, agriculture, synthetic biology, and industrial biotechnology. Yet for many early-stage innovators, gaining access to the foundational intellectual property (IP) behind CRISPR has often felt daunting, burdened by cost, complexity, and time.

At ERS Genomics, our mission has always been to make this technology broadly available. We hold and license the foundational CRISPR/Cas9 patent portfolio co-owned by Nobel Laureate Professor Emmanuelle Charpentier, the University of Vienna, and the University of California (the CVC portfolio) recognised globally as the essential IP for practising CRISPR/Cas9.

The Foundational CVC Portfolio

Spanning 130+ patents and over 1,400 claims across key global markets, the CVC portfolio covers:

- Core CRISPR/Cas9 compositions – use of Cas9 with guide RNA to target specific DNA sequences.
- Delivery systems for introducing CRISPR/Cas9 into all cell types.
- Genome editing mechanisms enabling knock-outs, insertions, and precise mutations.
- Mutated Cas9 ("nickase") variants for targeted DNA modification or gene regulation.
- Guide RNA innovations, including modified lengths and base compositions.

This breadth of protection allows licensees to confidently deploy CRISPR/Cas9 across all organisms and cell types, from bacteria and yeast to plant and mammalian systems, ensuring the freedom to innovate across a wide spectrum of research and commercial programmes.

Improving Access for Earlier-Stage Innovators

The ERS Express License, a platform designed to democratise access for startups and small research enterprises, was built for small organisations with fewer than 15 employees and less than $10 million in funding. Through a fast online application process, eligible companies can secure non-exclusive internal research rights at a cost-effective rate.

This streamlined approach removes barriers that have historically slowed adoption and ensures even the smallest teams can use CRISPR/Cas9 responsibly and confidently.

How It Works

Eligibility: Organisations with <15 employees and <$10M in funding.

Requirements: Applicants demonstrate scientific credentials (e.g., publications, collaborations, or patents).

Process: Applications are submitted through ERS' streamlined online portal, with rapid turnaround.

Rights: Non-exclusive license for internal research use of CRISPR/Cas9.

Opening the Door to the Next Wave of Discovery.

For founders and scientists working at the edge of discovery, whether in synthetic biology, disease modelling, or functional genomics, the Express License provides a practical way to integrate CRISPR into R&D pipelines without the delay of complex negotiations.

Empowering Established Innovators

ERS Genomics has licensed more than 155 organisations worldwide, ranging from pioneering start-ups to multinational leaders in biopharma, life sciences, and agriculture.

Across the biopharma value chain, our licensees are integrating CRISPR/Cas9 at every stage of innovation, from target validation and screening to cell-line engineering and biomanufacturing. In agriculture, companies, such as Corteva Agriscience, are developing next-generation crops with enhanced resilience and productivity. In synthetic biology and life science tools, global leaders, including Thermo Fisher Scientific, and Danaher, are using ERS-licensed CRISPR/Cas9 technologies to power advanced research platforms, enable new product development, and drive precision at scale.

These collaborations illustrate how licensed access to foundational CRISPR/Cas9 IP supports responsible, confident innovation, helping organisations of all sizes accelerate discovery while mitigating future legal or operational risk.

Trust and Responsibility

ERS Genomics is trusted by a global network of innovators who value both access and accountability. By combining accessibility with robust legal clarity, our licensing model enables organisations to innovate freely, collaborate globally, and build on a proven foundation of scientific excellence.

Innovation starts with access. By lowering barriers to CRISPR/Cas9, our Express License ensures that bold ideas are not limited by company size or funding stage. As CRISPR applications expand across industries, we believe democratised access will fuel the next wave of scientific breakthroughs, driven not only by established players but by the visionary startups shaping the future of biotechnology.

Learn more and check your eligibility at ersgenomics.com/express-license

CRISPR: ENGINEERING THE FUTURE

If CRISPR gave us the power to program life, artificial intelligence (AI) is teaching us how to do it faster, safer, and at scale. Together, they are driving a biological revolution that is redefining the 21st century.

Yet, as remarkable as the progress has been, we have only scratched the surface of what this technology can achieve. CRISPR is still in its early stages, a decade-old discovery already transforming science, but with most of its potential still ahead. As AI deepens our understanding and accelerates discovery, the possibilities for what comes next remain wide open.

AI is already accelerating nearly every stage of the CRISPR workflow. Machine-learning models now design more precise guide RNAs, predict off-target effects with remarkable accuracy, and identify novel CRISPR-associated enzymes beyond those found in nature. Deep-learning systems are mapping how edits cascade through gene networks, revealing the complex choreography of cellular systems. When AI supercharges CRISPR screens, researchers can quickly decode gene functions and biological interactions that once took years to uncover.

The fusion of digital and biological intelligence is not just improving science but redefining it. AI-powered biosensors can monitor gene edits in real time, while closed-loop systems autonomously optimise experiments, compressing R&D timelines from months to days. Large language models (LLMs) trained on genomic and proteomic data are beginning to predict how single edits can influence entire biological systems. Soon, designing a biological solution may feel as intuitive as writing code, ushering in a new era of synthetic biology, where living systems themselves become programmable platforms for innovation.

From Discovery to Design

CRISPR has already transformed biology from a science of observation to one of design. For the first time, the genome has become programmable and editable with a level of precision once thought unimaginable. This shift has already reshaped our world, giving rise to new medicines, resilient crops, and advanced diagnostics. But we are still only in the early stages of what this technology can achieve.

The approval of CASGEVY®, the first CRISPR-based therapy, was a defining milestone in human therapeutics. But this success is only the start. Drug developers are still at the ex vivo stage, where cells are edited outside the body and then re-introduced to patients. The next major leap would be achieving in vivo delivery, editing genes directly within the

body. Unlocking that capability would open the door to treating a far wider range of diseases, including solid tumours and other hard-to-reach cancers.

In laboratories across the world, the combined power of CRISPR and AI is enabling more sophisticated exploration of biology's most intricate systems from the circuitry of the brain to the immune system's defences. Disease models are becoming more accurate, discovery platforms more powerful, and therapies once out of reach are moving closer to reality. These advances are further amplified when guided by AI-driven modelling, which predicts biological outcomes before experiments even begin, improving efficiency, safety, and reproducibility. Researchers are even developing wearable CRISPR-based tools, such as microneedle patches that can track cell-free DNA in real time, hinting at a future of continuous health monitoring powered by data and biology working in sync.

Beyond Healthcare

CRISPR is beginning to change how humanity interacts with the natural world. In agriculture, CRISPR is rewriting the genetic code of crops to withstand drought, resist pests, and reduce food waste. In synthetic biology and industrial biotechnology, it is turning microbes into living factories for sustainable fuels, animal-free proteins, and biodegradable materials. AI-guided design is accelerating these developments, helping researchers model metabolic pathways, predict yield efficiency, and fine-tune production systems at impressive scale.

A Universal Technology for Every Industry

As AI and CRISPR continue to evolve together, their combined potential will extend to virtually every sector. In environmental science, engineered organisms could restore fragile ecosystems, strengthen coral reefs, and even prevent the release of ancient pathogens from melting ice. In manufacturing, precision fermentation and AI-guided bioprocessing could enable circular, low-carbon industries where waste is converted into new resources. In every field where biology plays a role, the ability to program living systems, and the data that describe them, will unlock new solutions to global challenges, powering industries from medicine to materials.

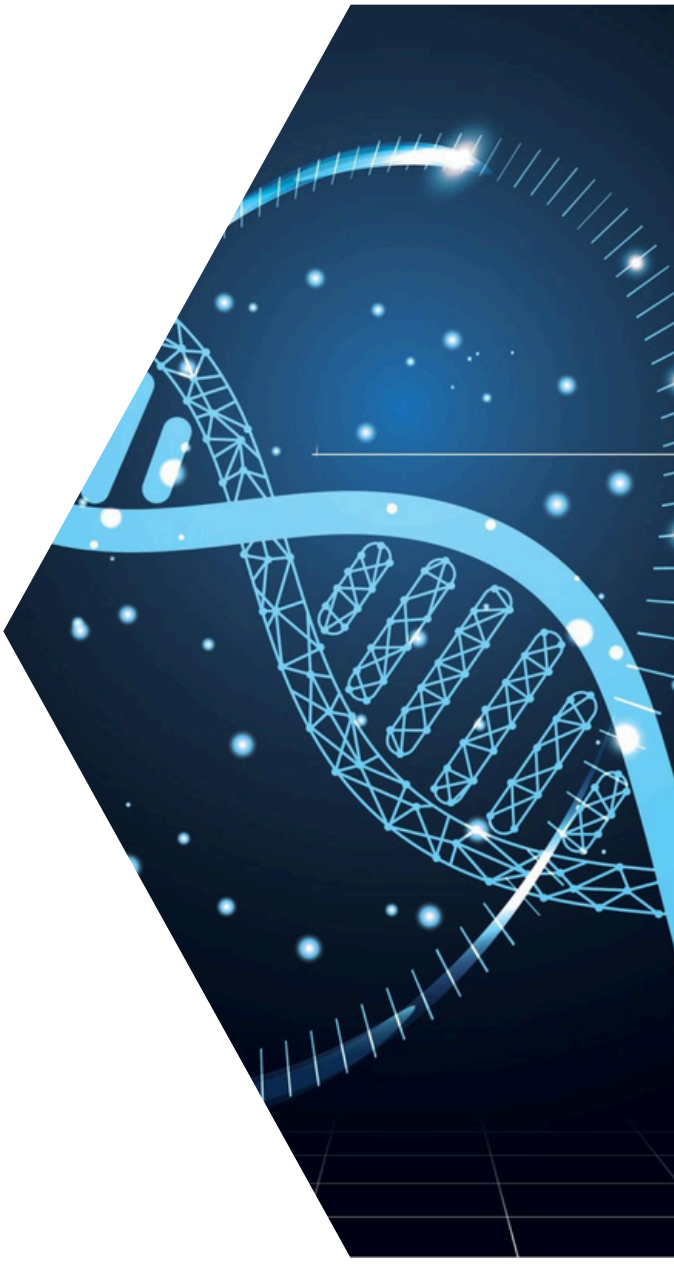
Enabling Responsible Access

At ERS Genomics, we are proud to provide the foundational intellectual property that makes this emerging biological economy possible. Built on the Nobel Prize–winning discoveries of Professor Emmanuelle Charpentier and Professor Jennifer Doudna, the CVC patent portfolio remains the cornerstone of CRISPR/Cas9 innovation. Through responsible, global licensing, ERS Genomics empowers organisations, from start-ups to established global leaders, to explore, design, and deploy CRISPR-enabled solutions with confidence and ethical integrity.

Our mission is to democratise access to this foundational technology, ensuring innovators in every field can harness CRISPR/Cas9 responsibly and securely. From pharma and life sciences tools to agriculture, synthetic biology, and beyond, ERS Genomics connects licensees to the essential IP they need to turn bold ideas into real-world impact.

The Era Ahead

The convergence of AI and CRISPR marks the beginning of a new era, one in which biological systems become the next frontier of computation, design, and sustainability. We may have achieved historic firsts, but it is all still to play for. The question is no longer whether these technologies will reshape our world, but how boldly, collaboratively, and responsibly we will build the one that comes next.



WHAT WE DO

ERS Genomics is the CRISPR/Cas9 licensing company, providing global access to the foundational intellectual property estate (the "CVC Patents") essential for the practice of CRISPR/Cas9. Co-owned by Nobel Laureate Professor Emmanuelle Charpentier, who, together with Dr Jennifer Doudna, received the 2020 Nobel Prize in Chemistry for developing CRISPR, this portfolio represents the most comprehensive and widely granted collection of foundational CRISPR/Cas9 patents worldwide.

With 130+ issued patents globally (including 50+ in the U.S.) and more than 1,400 claims spanning all cell types, the CVC portfolio forms the strongest possible IP foundation for any organisation working with CRISPR/Cas9.

Derived from a bacterial immune defence system, CRISPR/Cas9 is a precise and efficient tool for editing DNA in living organisms and has transformed research across genetics, biotechnology, and molecular biology. The CVC patents underpin this breakthrough, enabling life-changing innovations across biopharma, life sciences tools, and industrial biotechnology.

ERS Genomics offers non-exclusive licenses to the CVC patents for research and commercial applications outside the direct use of CRISPR as a human therapeutic. These licenses are essential for freedom to operate across a broad spectrum of CRISPR/Cas9 uses, including:

- Life science research tools, reagents, and services
- Discovery and validation of novel therapeutic targets
- Engineered cell lines and animal models for drug screening
- Bioproduction of antibodies and therapeutic proteins
- Agricultural and animal biotechnology
- Synthetic biology, including enzymes, food ingredients, and bio-based chemicals

We make access fast and flexible, with options tailored to start-ups, emerging biotechs, and global multinationals. Secure your license today and join the companies shaping the future with CRISPR, supported by the strongest CRISPR/Cas9 IP portfolio in the world.

ers genomics

THE CRISPR
LICENSING
COMPANY