

GAME CHANGERS FOR 60 YEARS

60 years of entrepreneurial adventure

Episode 5: Molecular biology at the heart of innovation

A human, scientific, and industrial adventure, the history of bioMérieux has been an incredible story of family and entrepreneurship since the company's creation in 1963. Embark on a 5-episode journey to discover our six decades of commitment to improving health around the world.

In 1985, scientists from a small California-based biotech company published an article in the *Science* journal describing a technique that could amplify a DNA fragment by several hundred thousand times. This was the dawn of *Polymerase Chain Reaction* also known as PCR. It was to revolutionize the world of biomedical research and healthcare, particularly in relation to diagnostics.

bioMérieux very quickly realized that this molecular biology technology had huge potential. Located on the premises of the École Normale Supérieure in Lyon, a joint research unit between bioMérieux and the French National Center for Research was already hard at work on the subject. In 1987, the unit was boosted by the arrival of scientists from API System. Philippe Cleuziat, R&D Program Director, was then a young researcher in the team. He recalls: *"Our teams were at the forefront of using these types of technologies for molecular diagnosis in microbiology. We quickly set up thematic groups, particularly specialized teams focusing on technological research into all methods useful for developing molecular tests. How do we prepare a clinical sample? How do we extract DNA and RNA to be characterized? And then, how do we amplify it? That is to say, multiply the molecules to make them detectable, using all the methods that allow a signal to be measured on a machine. All these research components were integrated into our group, giving us the ability to assess the technologies that were being developed, as well as the opportunities for potential collaboration with certain companies to accelerate our development in this area."*

At the dawn of the new millennium, the acquisition of Organon Teknika propelled bioMérieux to the rank of leader in blood culture worldwide, but also provided the Company with a high-performance molecular biology system and patents. bioMérieux thus became the first to offer a real-time viral load test, essential for monitoring HIV patients. Claude Mabilat, Director of Medical Affairs, remembers: *"With the acquisition of Organon, we took another step forward in terms of integration and automation, because what was missing from the start and where we needed to progress was having something that was encapsulated in an easy-to-use solution for the customer from the moment of extraction—put the sample in, press the button, and get the result. This is something we talked about many times in the 90s. That was our*

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vision!” Today, molecular biology ranges such as easyMAG® for the extraction of nucleic acids come from technologies inherited from Organon Teknika.

The outlook for molecular biology was very significant. And once again, bioMérieux opted to innovate. This ambition was materialized in September 2005 with the opening of the Christophe Mérieux Center in Grenoble, dedicated to molecular biology and microsystems. In 2011, the takeover of the French company ARGENE strengthened bioMérieux's offer and expertise. Today, these two sites employ more than 350 people and remain spearheads of molecular biology research, development, and production in France.

Molecular diagnosis was also of great interest to clients in the food and pharmaceutical industries, who wanted to be able to ensure the microbiological quality of their production as quickly as possible. That same year, 2011, bioMérieux entered into a partnership with Idaho Technology Inc., a company founded in 1990 in the state whose name it bears, but which later relocated to Salt Lake City. Idaho Technology developed a highly innovative process for ultra-fast DNA detection. Claude Mabilat was Director of R&D for industrial microbiology at the time: *“The goal of this first partnership with the company was to work together towards a solution for detecting food pathogens. In terms of feasibility and customer requirements, we brought our marketing know-how to really give the system the right specifications. We launched what is now called GENE-UP®—a great commercial success and our first collaboration with BioFire, actually, since Idaho Technology later became BioFire.”*

During its 50th anniversary year in 2013, bioMérieux took a major step forward with the acquisition of BioFire Diagnostics. This Utah-based biotech firm was revolutionizing the molecular diagnosis of infectious diseases with its FilmArray® multiplex system, which allows the simultaneous detection of several microorganisms in a single test. Alexandre Mérieux, Executive Chairman of bioMérieux, explains: *“What we liked about BioFire was the technology, but above all, the expertise of the people. Our goal—kind of what we do every time we make a strategic acquisition—was not to integrate the company overnight. Rather, our plan was to strengthen the teams in Salt Lake City in terms of R&D, manufacturing, and other factors. I think it was an approach perhaps somewhat different from that of potential competitors.”*

The venture was a success. The acquisition enabled BioFire to realize its fantastic potential. While 600 systems had been installed in laboratories by 2013, ten years later, the installed base stands at more than 23,000 units. And the story doesn't end there, because in 2023, bioMérieux launched SpotFire, a PCR instrument capable of delivering results in less than 20 minutes, designed for decentralized healthcare centers.

Innovation has driven bioMérieux's response to public health challenges for 60 years. It extends well beyond molecular biology, since bioMérieux has been able to meet the expectations of healthcare professionals in terms of mass spectrometry, data analysis software, and the optimization of laboratory performance.



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With the COVID-19 health crisis, the whole world now understands how essential diagnosis is for proper patient care. Its role can only become greater in the face of tomorrow's emerging or re-emerging threats.

And bioMérieux will always be on the front line to respond to them.