Insights

CRYSTAL CLEAR

THE RARE DISEASES

Interview with Nicolas Lévy, professor of medical genetics, chief scientist rare diseases at Servier

SCIENCE CALLING

Digital Twins and AI revolutionize the pharmaceutical industry

FUTURES FORUM

Challenges and opportunities for mid-size pharma

SOUNDING OUT PATIENTS

Patients share their experience with illness in a series of exclusive podcasts

TELL ME A STORY

Meeting with Palm Therapeutics, a start-up awarded from an incubation program

Un magazine proposé par SERVIER

Table of CONTENTS

01
CRYSTAL CLEAR
THE RARE DISEASES
Interview with Nicolas Lévy, professor of medical genetics, chief scientist rare diseases at Servier

02
SCIENCE CALLING
DIGITAL TWINS
AI to revolutionize the pharmaceutical industry

03
FUTURES FORUM
MID-SIZE PHARMA: CHALLENGES AND OPPORTUNITIES
Joint interview of two experts

04
TELL ME A STORY
ARE INCUBATORS INNOVATION BOOSTERS FOR START-UP?
Palm Therapeutics tells us more

05
SOUNDING OUT PATIENTS
Patients share their experience with illness in a series of exclusive podcasts

EDITORIAL

How can we address the major scientific issues that are both current and fascinating and in the most accessible way possible? How can we provide our (future) readers with a comprehensive overview of healthcare innovations and the challenges facing medicine now and in the days to come? How can we incorporate the viewpoints and convictions of our industry's stakeholders?

This is, in fact, precisely the raison d'être of Insight, our new magazine devoted to the main issues facing the pharmaceutical industry, presented from the point of view of a variety of people within the industry.

For this first issue, we interviewed Nicolas Lévy, clinician and professor of medical genetics, Chief Scientist Rare Diseases at Servier, about rare diseases. We asked questions like: What progress has been made in this field? What are patients' expectations and what major challenges do researchers face? This passionately committed scientist tells us how the field of rare diseases holds some of the greatest potential for medical innovation.

Perhaps you've heard of those "Digital Twins" that replicate human diseases in order to treat them more effectively? Colin Hill, CEO and co-founder of the start-up called Aitia, explores the topic in a video.

We also hear from patients, who share their experience with illness in a series of exclusive podcasts.

Lastly, you'll find a joint interview on the challenges and opportunities for "mid-size Pharma," as well as a first-hand account from Palm Therapeutics, a start-up awarded from an incubation program in the United States.

We hope you enjoy reading it!

« Research in rare diseases holds some of the greatest potential for medical innovation for patients.»

Interview with Nicolas Lévy, professor of medical genetics, chief scientist rare diseases at Servier

Insights : Hello Nicolas, and welcome to the first issue of Insight. Before going into more detail about the research and challenges associated with rare diseases, could you first tell us what rare diseases are — if such a definition exists?

Nicolas Lévy There are many ways to define rare diseases, including the use of quantitative thresholds. Although, in my opinion, the characterization of a rare disease should not depend on numbers alone. It's important to remember that there is no consensus on a universal definition of a rare disease. To give you an example, in Europe, we consider a rare disease to be one whose prevalence is less than one case in 2,000[i] , which means it affects less than one person out of two thousand at any given time. This is the definition accepted and validated by the European Medicines Agency (EMA). In the United States, a disease is said to be rare when it affects less than 200,000 people in the country[ii]. Overall, the consensus is that rare diseases affect between 3.5% and 5,9% of the world's population[iii]. In all, more than 9,000 rare diseases are currently registered[iv], corresponding to 260 to 450 million patients worldwide[v].

Nowadays, rare diseases are increasingly being defined as "ultra-rare" (fewer than 50,000 patients worldwide[vi]), "micro-rare" (fewer than 300 patients), and even "nano-rare" (fewer than 30 patients[vii]). But none of these definitions are official in the eyes of the authorities.

More than 9,000 rare diseases are currently registered [iv], corresponding to 260 to 450 million patients worldwide.[v]

i : Qu'est-ce qu'une Maladie Rare ? - Portail SLA (portail-sla.fr)

ii **FDA :** https://www.fda.gov/patients/rare-diseases-fda#:~:text=on%20rare%20diseases%3F-,What%20is%20a%20rare%20disease%3F,drugs%20to%20treat%20rare%20diseases.

iii **ncbi :** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9632971/

iv **Adapted from N.Lévy, 2021; Les maladies rares et les espoirs de la médecine du futur. Eds Buchet-Chastel**

v **ncbi :** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9632971/

vi **ncbi :** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9287598/

vii **Crooke S. Progress in molecular biology and translational science addressing the needs of nano-rare patients - ScienceDirect**

Apart from the thresholds you mentioned, what other criteria do you use to describe these diseases?

N.L It is generally agreed that rare diseases are pathologies associated with unmet medical needs for which there are no approved treatments[viii]. This is true in most cases, as less than 5% of rare diseases currently have a treatment. And we're talking about treatments for the most "common" of rare diseases, if I may put it that way. Whereas most are "ultra-rare" or "micro-rare" diseases.

80% of all rare diseases are genetic[x].

It's also worth noting that rare diseases account for 30% of infant mortality[xi]. Some only affect adults, but those are generally diseases with congenital factors that can be identified before the first signs of the disease manifest.

How are things progressing in terms of new rare disease identification?

N.L Well, in my view, there are two main scenarios. The first involves diseases whose clinical characteristics have already been described but for which the cause and biological mechanism have not yet been determined. In the second, it may so happen that when faced with a clinical presentation, the symptoms do not match a disease that has already been described.

And so, a combined approach (clinical, biological, genetic, etc.) can detect a genetic or chromosomal abnormality, or a biological signal and link it simultaneously with the anomaly that causes it.

So, new diseases are being discovered on a fairly regular basis, and there may still be some surprises in store. But overall, I'd say that most of the diseases that fall within this area correspond to a known genetic cause, either one that has already been discovered or is yet to be discovered, for which the underlying condition has been documented. For example, it is possible to establish a direct genetic determination of the disease in 80% of cases[x]. In addition, when diseases are genetic in origin, they can be diagnosed in just over 60% of cases.

Finally, we have observed the great strides being made in how patient organizations, foundations, and national, European and global networks of experts are organizing. Because of the difficulties identifying patients and their distribution worldwide, enhancing the structure of these networks is a vital step in identifying and making progress in research, to serve patients all over the world.

viii : https://alliance-maladies-rares.org/nos-combats/

ix : https://www. scienceaujourlejour.fr/pages/maladies-rares/les-notions-de-base.html

x : Qu'est-ce qu'une Maladie Rare ? - Portail SLA (portail-sla.fr)

Let's talk now about diagnosis. How can patients be properly diagnosed when there are so many rare, or even micro-rare and ultra-rare, diseases that may elude a proper diagnosis?

N.L Things have come a long way, and a lot of progress has been made in terms of diagnosis. As I mentioned earlier, for around 60% of rare diseases, a diagnosis now exists. However, this does not mean that 60% of those affected have been diagnosed! And then there's the question of organization. Today, when a patient goes to see a doctor at an expert medical center, it's specifically because he or she has been referred there. The patient already has a hunch that they may have a somewhat complicated, potentially incapacitating disease, which may progress over the course of their life, and yet they want to know the exact diagnosis — and I insist on this last word.

95% of diseases have no treatment. [viii]

The fact remains, however, that there is still a great deal of misdiagnosis. Patients can wait a very long time — sometimes several years — for a diagnosis that health care professionals have trouble establishing. That said, once a precise diagnosis of a disease has been made, with a genetic or biological mechanism of some kind, quite a bit of ground has already been covered. From there, it's possible to start pinpointing certain components of the disease mechanism, develop strategies for patient care and then begin to see how a therapeutic approach can be elaborated in order to move closer to creating a molecule that will be more effective and have less side effects.

You just touched on the subject of therapeutic approaches, but could you also describe the current situation with regard to research in rare diseases?

It's impossible to separate research in rare diseases from research and innovation in the fields of genetics, genomics, and cell biology. I believe that the majority of major technological advances have come from research focusing on genetic diseases and, more broadly, on rare diseases. When we refer to cellular therapies, RNA-based therapies, gene therapies, and antisense oligonucleotides (ASOs), these are all advances linked to two fields: rare diseases and cancer.

There have been many very significant innovations in these areas. And for a discovery to become an innovation, it has to have become standard practice. Such transformations are linked to the potential of the individual compounds. Hopefully, these approaches will become innovations in the near future.

viii: https:// alliance-maladies-rares.org/nos-combats/

Speaking of developments, could you give us a few examples of major advances?

N.L As far as gene therapy, antisense oligonucleotides, and pharmacological therapies are concerned, there are hundreds of clinical trials in various phases around the world, with some significant developments in progress. For example, one of the most effective, innovative gene therapies is for infantile spinal muscular atrophy, a terrible disease. There are now three innovative treatments for this particular condition, thanks to work carried out in recent years. So, the outlook for patients is significant.

In more general terms, many clinical trials are currently underway for adult and childhood diseases, neurodegenerative diseases, and neurodevelopmental disorders. I would also like to mention the considerable progress being made in genetic, metabolic, and neuromuscular kidney diseases. Most stakeholders in the fields of care, research or therapeutic development agree that we have never been so close to identifying high-potential molecules.

More specifically, advances in molecular genetics and cell biology are, in my view, ones that have made the greatest contribution to advances in therapeutics. As I see it, these are undoubtedly the therapies of tomorrow. Had the genome not been decoded, developing antisense or gene therapies would be impossible today. High-throughput sequencing is also one of the incredible tools of life and health sciences research. It has enabled us to make unprecedented progress, both as a means of exploring disease mechanisms and as a screening tool – that is, for testing compounds with therapeutic potential.

Does a patient with a rare disease have to live with this "sword of Damocles" for the rest of his or her life? Or, to put it another way, is it possible to cure a rare disease?

N.L I think it is possible to cure a rare disease, even though, as I said, it's a very complex question. It can be very complex to respond without more subtle information if we consider the numbers, the diversity among patients and the complexity of the biological mechanisms at play.

There's a difference between curing and controlling disease. We need to keep these two notions separate. Earlier, I was talking about the innovative treatments that have been developed recently through advances in research, some of which do indeed provide a cure for certain diseases in certain patients. Other treatments, on the other hand, provide effective disease control over time.

For example, stabilizing a neurodegenerative disease at an early stage, and managing to control it — I think that can be considered a real achievement.

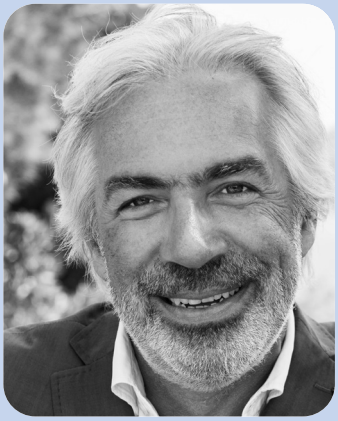
Many thanks, Nicolas, for your insights and explanations. It's time to bring our interview to a close with a final question: What do you see as constituting the major challenges that lie ahead in this area?

N.L There are both opportunities and challenges. The first challenge relates to the geographical dispersion of patients in very different locations and countries, which can complicate clinical study recruitment, for example. Another challenge is the collection of data, clinical information, and biological samples — what we call natural history studies — over the course of these patients' lives or care.

Finally, I believe that when 95%[viii] of diseases have no treatment in a particular field, then it is bound to hold one of the greatest potentials for medical innovation and research innovation in the life and health sciences. And that makes it one of the greatest opportunities not only for Research players, but also for the whole of society.

Against this backdrop, it is essential to ensure that development procedures are aligned with regulatory agencies, and to reflect collectively on an economic model for market access and pricing for certain medicines. For patients and families, it's a question of fair access to medicine and care.

viii: https://alliance-maladies-rares.org/nos-combats/



Nicolas Lévy

Nicolas Lévy is a physician and researcher in medical genetics. He has been committed to caring for patients with rare diseases for over 30 years. He was head of the Medical Genetics Department at the Timone Hospital (Marseille, France) and head of the Marseille Medical Genetics Research Center (Inserm). Founder and first Director of Fondation maladies rares (Rare Disease Foundation), Dr. Lévy has also forged a number of partnerships between the academic and private sectors, to pool expertise and accelerate therapeutic innovation. Passionately committed to research and driven by the desire to transform his academic work into therapeutic solutions, he has also founded several biotech start-ups. Since 2022, Nicolas Lévy has held the position of chief scientist rare diseases at Servier Group.

Digital Twins: When AI drives progress for the pharmaceutical industry

Well-known in other sectors like the automotive industry, digital twins[i] are also bringing groundbreaking innovations to human health. As their name indicates, these “twins” are the digital representations of a disease, built using real-life data from clinical trials carried out with patients. They are then transformed into computerized models to create a digital duplicate.

Their objective?

To offer a quicker and more innovative solution to test the efficacy of therapeutic solutions.

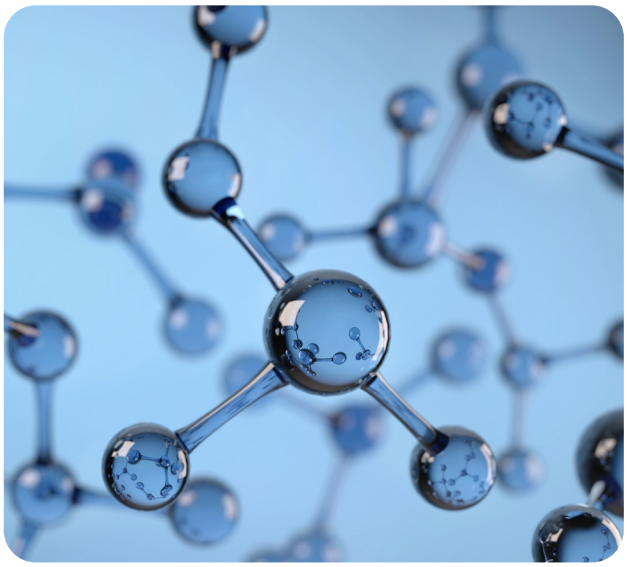
[i] Article Le jumeau numérique d’un humain en santé : https://journals.openedition.org/cdst/7170

Using Digital Twins to better understand diseases and their changes

These digital copies can reproduce the mechanical, chemical, electrical, and organic processes that occur within the body. For instance, they can highlight causal relationships and connections between the different organs.

They also simulate the behavior of drugs and reveal what works and what does not work at the individual patient level. Digital twins have a real value added for discovering new therapeutic targets and identifying associated biomarkers. Thanks to this technology, pharmaceutical industry players hope to provide patients with increasingly personalized therapeutic solutions.

One of this technology's pioneers, the US company Aitia has launched "Gemini," its proprietary Digital Twins model. Colin Hill, CEO and co-founder, presents the stakes involved with this technology for health.



What are this technology's benefits for patients?

By combining AI technologies and digital twins with industrial capabilities, the aim is to accelerate research and development phases as well as the process for identifying new targets.

This technology offers a range of benefits such as:

- *Quicker testing of drug candidates on digital patient profiles and therefore, ultimately, accelerating the research and discovery of targeted therapies.*
- *A better understanding of the connections and causal relationships between various mechanisms, assessing disease progression and identifying patient subgroups.*
- *Reducing the risk of errors failure during development phases.*

What is a biomarker?

A biomarker is a measurable biological characteristic relating to a normal or pathological process. A biomarker can be measured based on different biological fluids, such as blood, as well as patient biopsies (tissue samples). Biomarkers can also be identified using imaging techniques (scanners, radiography). They make it possible to track or predict the product's efficacy and safety during development or to select responder patients.[ii]

[ii] Acobiom : https://www.fda.gov/drugs/biomarker-qualification-program/about-biomarkers-and-qualification#what-is / https://www.niehs.nih.gov/health/topics/science/biomarkers

AITIA in bref

Aitia is a Boston-based company specialized in the development and application of causal AI and Digital Twins to discover the next generation of therapies for patients, by creating digital replicas of human diseases based on multi-omic patient data and causal AI.

Gemini Digital Twins are being used to discover novel therapies and accelerate R&D in a few diseases, including multiple myeloma, prostate cancer, Alzheimer's disease, Parkinson's disease and Huntington's disease. Several other digital twins are in development in the fields of oncology, neurodegeneration and immunology.

Aitia is a leader in the development and application of digital twins and causal AI technology for the discovery of new therapeutic solutions in oncology and neurodegenerative diseases.

Retrouvez la vidéo sur servier.com

Scanner le QRcode pour accéder à la vidéo.

Multi-omic data: Data mapping the characteristics of all 37,000 billion human cells[iii]

The "multi-omic" approach enables omic data to be analyzed and compared simultaneously. These data sets are "omes": genome, proteome, transcriptome, epigenome, metabolome and microbiome. Objective: better understand the complexity of human cells and their mechanics, with a focus on developing ultra-personalized therapeutic solutions, particularly for cancer [iv].

"We believe our Gemini Digital Twins, which are created from large quantities of multi-omic patient data and causal AI, have the potential to bring significant disruption to the field of oncology and pave the way for breakthrough discoveries,"

Said Colin Hill,
CEO and co-founder of Aitia.

In May 2023, Aitia and Servier signed a multi-year agreement which aims to discover, validate and strives to develop novel drug targets and drug candidates for pancreatic cancer, the world's 7th most deadly form of cancer [v].

This partnership is built around Aitia Digital Twins combined with Servier's industrial expertise.

[iii] : https://www.science-et-vie.com/article-magazine/quest-ce-que-la-multiomique-reel-espoir-contre-le-cancer

[iv] NIH : https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4959511/

[v] International Agency for Research on Cancer, Globocan 2020, WHO / https://www. sante.fr/les-facteurs-de-risque-du-cancer-du-pancreas

Can a medium-sized pharmaceutical company be competitive and resilient in such a competitive and constantly evolving environment?

To answer this question, Insights' editorial team interviewed Mathieu Lamiaux, managing director and senior partner at Boston Consulting Group, and Jérôme Klein, head of corporate strategy at Servier.

Mathieu Lamiaux, good morning. By way of an introduction, could you remind us what the term "medium-sized" or "mid-size" pharmaceutical company refers to?

M.L While there is no official definition of what the definition of a mid-size pharma company is, such company profiles display major similarities with one other.

We could just look at sales, which are generally between €1 and €5 billion, but this would be simplistic. Mid-size pharma companies may have different profiles - local or global player, specialist or "multi-business," but what really distinguishes them from Big pharma and biotech instead lies in their capital structure. The majority of these are family-run or heritage companies, often governed by a foundation. Most of them are not listed on the stock exchange.

This last point gives them a very different relationship to time from that of the Big pharma players. Without shareholder pressure, they adopt an approach that is adapted to the long-term development process for a medicine. Unfettered by market fluctuations, their strategy is based more on a rationale of "transmission."

Another point that all mid-size companies have in common is that they aspire to control the value chain of a medicine and of R&D activities, via production, marketing, and distribution. Through greater control over the drug chain, they aim to strengthen their credibility and independence, but also to capitalize on operational excellence and their knowledge of this value chain as a point of differentiation.

Conversely, biotech companies tend to master a single stage, preferring to specialize in 'early stage' research. Lately, Big pharma companies have shown a certain willingness to divest themselves of their research activities, in favor of strategies for acquiring high-potential assets in the final stages of development, in order to generate a faster return on investment.

In your opinion, what are the major challenges facing a "mid-size pharma" company?

M.L I would say that the first challenge confronting such a company is its size. This is because the pharmaceutical industry is a globalized sector, in which needs are generalized. Scale effects are significant, particularly in terms of production, distribution, as well as research for conducting clinical trials or use of new technologies. In this context, size becomes a significant competitive advantage - particularly when compared with the budgets that, for example, big pharma devotes to R&D, which are of the order of €10 billion a year. These amounts are higher than the sales of most mid-size players!

« In this environment the rules of the game are the same for everyone, even though not everyone starts out with the same advantages or the same opportunities. »

Due to their extensive pipeline, the probabilities of success of the "big" players are potentially higher than those of a mid-size player. With a pipeline that is generally smaller, these mid-size players have no room for error in their investments.

It's important to understand that in this environment the rules of the game are the same for everyone, even though not everyone starts out with the same advantages or the same opportunities. This is why mid-size players need to be able to maximize every opportunity that comes their way.

Jérôme Klein, what is your opinion on the subject?

J.K For a medium-sized company like Servier, this kind of environment means that we have to play a smart game in order to continue to innovate in a sustainable way.

We find ourselves at the heart of a number of challenges: the urgent need to innovate, the obligation to navigate a complex geopolitical context, the need to adjust our industrial footprint, but also an ever-greater number of players.

In order to stand out from our competitors, the Servier 2030 strategy is based on our strengths, which allow us to meet the challenges ahead and take advantage of every opportunity that comes our way.

In order to achieve this:

- We draw on our global geographic presence to meet the needs of patients around the world, not only in cardiometabolism and venous diseases (CMVD), areas in which we are a historic leader, but also in oncology.

- We are working to make our pipeline more specialized, in order to become more resilient. We invest almost 70% of our R&D budget in oncology, where we intend to become an innovative and leading player, particularly in precision oncology.

- We are focusing on open innovation in R&D, and rely on collaborative and external growth, which is an essential lever for accelerating research and development. By virtue of this strategy, our oncology portfolio now includes seven drugs for hard-to-treat cancers. Our pipeline is particularly robust, with no fewer than 35 projects in R&D (as of January 2024).

- Lastly, we draw on our specific characteristic of being governed by a Foundation. Our independence is attractive factor as we are committed to the long term. Because the patient is the ultimate beneficiary of our actions, our projects are meaningful.

In your opinion, what opportunities should a mid-size company seize in order to increase its chances of success?

M.L The opportunities lie in the capacity of a mid-size player to dare to go where others won't go.

Mid-size players will find opportunities for success by targeting smaller patient groups whose needs are not yet covered. But also by investing in geographical areas where other players are not yet present. This approach allows them to maximize their impact, not only on patients, who may sometimes finally see a treatment emerge, but also on their partners, by distinguishing themselves in a niche market. In order for this strategy to be successful, you obviously need to excel at executing it.

Servier is a good example of this, because the group has been able to swing into action and find winning solutions. For example, it has drawn on the geographical footprint of its historical portfolio to develop new activities in markets that are sometimes difficult to penetrate, which other competitors do not enter because of the high risk of failure.

Lastly, in the hunt for assets, a biotech firm is often more inclined to transfer its assets to a mid-size company with which it has had the opportunity to talk directly to top management, and where it is

convinced that the value of the asset will be enhanced. For a start-up, parting with an innovation is a form of giving up. Because of their "human-sized" structure and their long-term vision, mid-size companies offer assurance that their asset will be in good hands.

«We find ourselves at the heart of a number of challenges: the urgent need to innovate, the obligation to navigate a complex geopolitical context, the need to adjust our industrial footprint, but also an ever-greater number of players. »

Jérôme Klein, could you explain to us how this translates in practical terms for Servier?

J.K As you mentioned, Servier has been able to draw on its historical pillars to develop its expertise in oncology.

In 2017, we began our transformation to become a recognized player in this therapeutic area, which is particularly dominated by big pharma. By virtue of our global footprint in cardiometabolism, our scientific leadership, our boldness and our resolutely patient-focused approach, we have succeeded in successfully launching onto this competitive oncology market, focusing on hard-to-treat cancers for which patient needs are sub-optimally met, or still unmet.

Finally, I'd like to pick up on an important point raised by Mathieu: our attractiveness. I'm convinced that because we are governed by a Foundation, the ultimate beneficiary of our action is the patient. I am also convinced that not being quoted on the stock market and the fact that we are structured on a human scale are considerable advantages for our capacity to attract and develop talent. It's also a key factor in enabling employees to plan for the long term within the Group.

Mathieu Lamiaux

Mathieu Lamiaux is a graduate of HEC Paris. He began his career with the Agence Française de Développement (AFD) in Africa. He joined the Boston Consulting Group (BCG) in 1997 as a consultant to players in the pharmaceutical industry and is the current director of the firm's health care practice. Over the course of his career, he has acquired in-depth knowledge advising clients in the health care sector on commercial issues, market access, positioning and strategic orientation. He also leads the firm's global health initiatives in Europe, working in close collaboration with the World Health Organization, the Global Fund, and a number of public-private partnerships to combat AIDS, tuberculosis, and malaria. He is also a member of the social impact, marketing and sales, & pricing, and global advantage practices.

« The opportunities lie in the capacity of a mid-size player to dare to go where others won't go. »

Jérôme Klein

Jérôme Klein is a graduate of HEC Paris. After four years as a strategy consultant with Roland Berger, Jérôme Klein joined the Ipsen group, where he spent 15 years in various positions at international and local level. He began in corporate strategy and then joined the US subsidiary as director of financial planning. On returning to the head office in France, he took charge of business excellence activities for all specialty care businesses at the international level, with heavy involvement in this role in the launch of external growth partnerships. He then joined the group's French subsidiary, where he was initially director of BI & customer excellence and was subsequently responsible for the Neuroscience and Rare Diseases Business Unit. In October 2023, he joined Servier as Group director of corporate strategy and secretary to the Executive Committee.

Thank you both for this rich and enlightening interview. A final word?

M.L The size of mid-size companies is both a challenge and an opportunity. They are certainly as profitable as big pharma, starting at the time when they find the "blind spot" where size is no longer a disadvantage.

Are incubators innovation boosters for start-up?

California, the "El Dorado of innovation," is known as the country's leading economic powerhouse. Start-ups in all fields flourish there, attracted by the proximity of Silicon Valley's big names, such as Google and Meta. This hub of innovation, home to some 15,000 companies[i], is a breeding ground for a multitude of collaborations, particularly with two of the country's most prestigious universities - Berkeley and Stanford. This is a tremendous boon for the young life sciences start-up Palm Therapeutics, which has just joined California Life Science's FAST Fall cohort (FAST CLS).

Palm Therapeutics, the start of a promising adventure in targeted therapies for fighting cancer

The mission of Palm Therapeutics is to develop targeted cancer therapies in areas with unmet patient needs.
The company is focusing on a hitherto little-explored area of biology called protein palmitoylation[ii]. This is a natural biological process by which certain proteins are modified so that they can bind to the cell membranes where they fulfill their biological function.

Certain DNA alterations can affect such membrane proteins, however, transforming healthy cells into cancerous ones. Blocking palmitoylation, and thus inhibiting defective proteins from anchoring to cell membranes, would make it possible to effectively suppress their deleterious effects and limit (or even neutralize) their pathogenic potential.

By combining their extensive knowledge of the mechanisms of palmitoylation with an innovative technological platform, the Palm Therapeutics team has succeeded in developing the first platform capable of directly targeting palmitoylation.

"Our approach allows us to access traditionally unattainable targets, such as NRAS, which are at the root of many cancers," said Andrew Rudd, CEO and co-founder of Palm Therapeutics.

"Our approach allows us to access traditionally unattainable targets, such as NRAS, which are at the root of many cancers," **said Andrew Rudd, CEO and co-founder of Palm Therapeutics.**

Andrew Rudd,
CEO et co-fondateur
de Palm Therapeutics.

Did you know?

Ras proteins[iii] family play a regulatory role in cell proliferation, division and growth. One out of four tumors has a mutation in this gene.

i **CNRS :** https://lejournal.cnrs.fr/articles/silicon-valley-un-sociologue-au-royaume-de-la-tech

ii **Abstract :** The mechanism and functional roles of protein palmitoylation in the nervous system: https://pubmed.ncbi.nlm.nih.gov/9151315/

iii **Abstract :** Involvement of Autophagy in Oncogenic K-Ras-induced Malignant Cell Transformation: https://www.jbc.org/article/S0021-9258(20)51673-6/fulltext

The FAST program: A fast-track for disruptive innovations

Helping Californian biotech companies raise capital successfully

The FAST program, offered by California Life Sciences, provides innovative biotech entrepreneurs with customized support. The goal? Coaching select start-ups on how to perfect their business models, strategies, and medium- and long-term business plans for successful entry onto the market.

> The mission of the California Life Sciences Institute is to support innovation in California by offering programs in the fields of education, employee development, and entrepreneurship.

The fortunate hand-picked candidates benefit from twelve intensive weeks of coaching, during which they prepare to pitch to an audience of investors in view of future fundraising, a step that is essential to their success and survival.

> *"Since joining the program, we have successfully launched our pre-seed round, made exceptional progress on our core project, and refined our business strategy,"* **said Rudd.**

For start-ups: an opportunity to enhance their professional standing

In addition to coaching, start-ups also receive guidance in the administrative aspects of their project, particularly in securing the intellectual property of their technology.

What's more, daily contact with other players in the sector affords them an additional opportunity to generate valuable synergies and pool their strengths in a collaborative effort.

> *"This program is a fantastic opportunity to rub shoulders with industry experts. We benefited from a comprehensive assessment of our scientific strategy, as well as advice on how to strengthen all facets of our business. This hands-on support was crucial in preparing us for our current fundraiser,"* **said Rudd.**

Did you know?

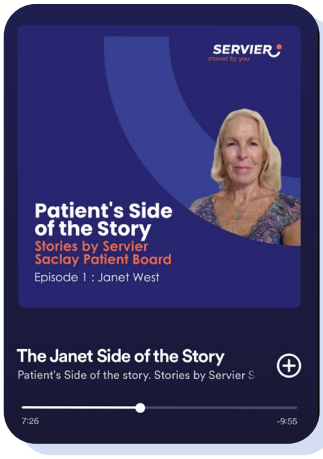
Servier has been sponsoring start-ups to support their integration to the FAST program since 2022. Firmly committed to open and collaborative innovation in R&D to meet patient needs, Servier is committed to fostering scientific innovation in oncology, neuroscience, and immuno-inflammation by pursuing innovative approaches to research and early clinical development.

"We are a Group committed to therapeutic progress to meet patient needs. As such, we take an open and collaborative approach to R&D at every stage of the product life cycle, including the early stages. We are proud to team up with CLS FAST on this initiative. Together, we want to support the new generation of start-ups in life sciences and biotechnology that will drive scientific innovation."

Christophe Thurieau,
Executive Director of Research, Servier.

New podcasts make patients' voices heard

In the "The Patient's Side of the Story" series, several patients make their voices heard, sharing their personal experiences with us. Janet, Linda, Tamás, Oriana, Begonya, Thomas, Estelle and Veerle look back on when they first learned of their diagnosis and their daily battle with disease. They describe the ups and downs, their worries and their hopes... but also provide practical advice and explain how research contributes to their story. And vice versa.



Episode 1: Janet West

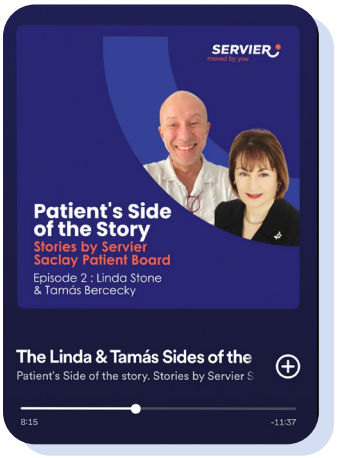
In 2019, Janet West was diagnosed with tongue cancer and underwent an eleven-hour operation. Her story that is presented in the first episode of "The Patient's Side of the Story."

Janet West's podcast is available in its original version on all platforms:
https://smartlink.ausha.co/patient-s-side-of-the-story-stories-by-servier-saclay-patient-board/the-janet-story

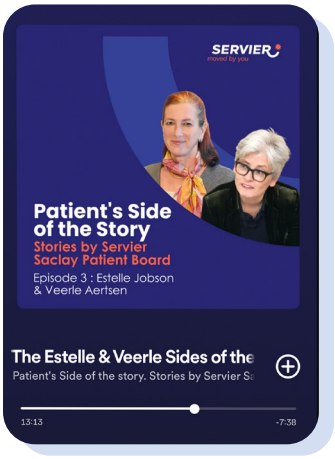
Episode 2: Linda Stone & Tamás Bercecky

Although Linda Stone has Sjögren's syndrome, and Tamás Bercecky was diagnosed HIV-positive and suffers from depression, their two stories share many similarities.

The podcast is available in its original version on all platforms:
https://smartlink.ausha.co/patient-s-side-of-the-story-stories-by-servier-saclay-patient-board/the-linda-tamas-sides-of-the-story



> *"It's important to see that all of us go through very different experiences in life. It's something that happens to you, that's thrown at you by life. So that's why I think it is important that whoever works in research and development or even in pharmaceutical marketing, actually listens to patients and that these different experiences are taken into account."*
>
> Tamás Bercecky, participant in the "Patient's Side of the Story" project.



Episode 3: Estelle Jobson & Veerle Aertsen

Estelle Jobson has endometriosis, while Veerle Aertsen has been diagnosed with Parkinson's disease. Estelle and Veerle: two women, two stories and two inspiring, engaging journeys!

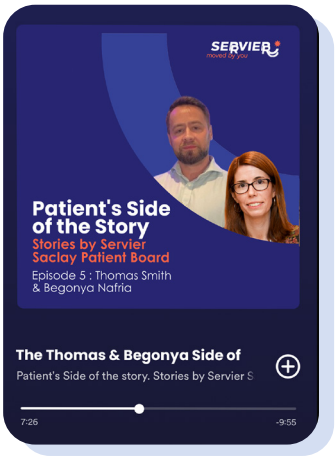
The podcast is available in its original version on all platforms:
https://smartlink.ausha.co/patient-s-side-of-the-story-stories-by-servier-saclay-patient-board/the-estelle-veerle-sides-of-the-story

Episode 4: Oriana Sousa

Oriana was diagnosed with a rare form of ovarian cancer at the age of 22. Thanks to her ingenuity, perseverance – and despite relapses, she is on the path to recovery. Oriana has been in remission for eight years.

The podcast is available in its original version on all platforms:
https://smartlink.ausha.co/patient-s-side-of-the-story-stories-by-servier-saclay-patient-board/the-oriana-side-of-the-story

> *"[When I was diagnosed with cancer,] I was shocked and felt all kinds of emotions thinking about everything that was going to happen. It was crazy to be an ordinary person and then suddenly have my life threatened by a fatal illness. It all happened so quickly. To top it all off, I learned of the diagnosis on December 24th. I walked into the operating room knowing only that I had a large tumor in my ovary. It could be benign. That's what I was hoping for. On the 24th, when the doctor told me the bad news, I was devastated."*
>
> **Oriana Sousa, participant in the "Patient's Side of the Story" project**



Episode 5: Begonya Nafria & Thomas Smith

For the fifth and final episode of the series "The Patient Side of the Story," Begonya Nafria and Thomas Smith look back on their commitment to patients, especially younger ones.

The podcast is available in its original version on all platforms:
https://smartlink.ausha.co/patient-s-side-of-the-story-stories-by-servier-saclay-patient-board/the-begonya-thomas-sides-of-the-story

Find all the episodes – and many others – on the "Patients Ensemble" channel:
https://www.patients-ensemble.fr/universe/6509aeef213a2f9da88c86de

Did you know?

This series of podcasts is a project that came about from the collaboration between Servier and the Saclay Research & Development Patient Board. Made up of 18 patients representing ten different diseases(1), the Board works with Servier's R&D teams to better integrate the patient viewpoint into the research and development of new drugs.

Find out more: https://servier.com/newsroom/lancement-podcasts-visite-patient-board-paris-saclay/

(1) Patient volunteers who applied to the European Patients' Academy on Therapeutic Innovation (EUPATI), an innovative pan-European initiative involving 33 organizations, led by the European Patients' Forum with partners from patient associations, universities and non-profit organizations, as well as a number of European pharmaceutical companies.