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What does the new year hold for the biotechnology industry?

The biotechnology sector is one of the most promising and dynamic fields in scientific innovation. Its impact on our life is undeniable (opportunities for recovery, quality of life and life expectancy improvements,...) and it is also an interesting investment opportunity. According to a survey by France Biotech, France's life sciences industry includes **720 biotech companies**, **73 biocleantech companies**, **886 companies** specialized in medical devices and diagnostics (1).

Un écosystème français dynamique

2019

720

entreprises biotech



La France se classe au

3^e rang
européen

60

nouvelles entreprises
chaque année



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For the entire biotech industry, 2023 was a challenging year. Global economic uncertainty, rising interest rates and inflation have taken a toll on the sector (2). This sector has been impacted by :

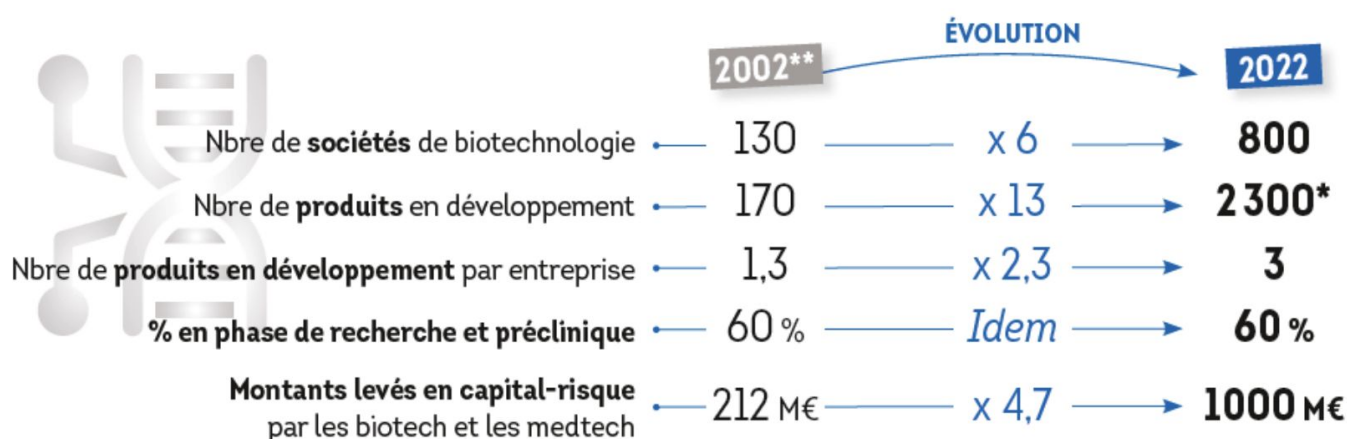
➤ **Financing struggles:** after a strong enthusiasm thanks to the Covid-19 pandemic, various forms of biotech financing, including venture capital, IPOs (post-initial public offering) and debt financing, decreased significantly of 40% in 2023 compare to previous years (3).

➤ **Impending Patent Expirations:** big pharma biotech companies are especially concerned by this phenomenon corresponding to the moment when the patents (issued over twenty years) of many of their major drugs will expire in the next few years leading to a huge loss in turnover because of a production cheaper generics by competitors (4)

➤ **Regulatory pressure:** in 2022, regulatory constraints have had a strong impact on the sector and are in second place among the concerns of entrepreneurs. Moreover, a wave of important legislative changes in the EU in 2023 have made this year one of the biggest for the EU regulatory landscape governing the life sciences industry in recent times (5)

What does the new year hold for the biotechnology industry?

In France, despite financial tensions and an uncertain macro-economic context, the healthtech sector continues to demonstrate a strong entrepreneurial dynamic. Indeed, there have been significant increases over the past two decades in the number of biotechnology companies, products undergoing development, and funds raised.



* Estimation du pipeline global des biotech françaises.
 ** Source : Panorama France Biotech / Deloitte (2002)

From “Panorama France HealthTech 2022” by France Biotech, feb 2023

French biotech companies are active in a wide range of scientific fields and applications, especially in diagnostics and analytical services, therapeutics, and contract research and manufacturing.

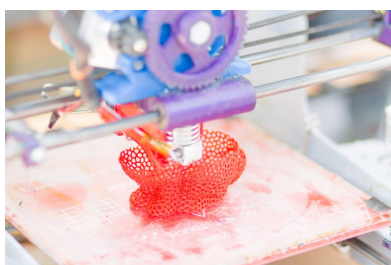
A detailed list with a description of all sectors and sub-sectors are provided by French life sciences database and can be found [here](#).

Sector	
AgroBio	3.4 %
Bioinformatics and Bioelectronics	4.9 %
Contract Research and Manufacturing	16.1 %
Cosmetics	4 %
Diagnostics and Analytical Services	20 %
Drug Delivery	3.7 %
Environment	1.8 %
Food and Nutraceuticals	5.3 %
Genomics and Proteomics	6.4 %
Industrial Biotechnology	2.5 %
Other Services and Suppliers	11.7 %
Therapeutics	17.2 %
Veterinary	3 %

From French life sciences [database](#)

What does the new year hold for the biotechnology industry?

After a slump, investment in biotechs could pick up. According to Nasdaq, as of November 2023, the global biotechnology market is valued at \$1.22 trillion and is expected to grow to \$3.21 trillion by 2030. What can we expect to see in 2024?



➤ **Innovative therapies** : gene editing, personalized medicine and 3D bioprinting and tissue engineering are redefining healthcare. Especially, CRISPR technology opens doors to a future where genetic diseases could be treated at their root.

Biotech companies are poised to utilize the transformative power of gene editing and CRISPR technology to revolutionize drug development. At the end of 2023, Vertex Pharmaceuticals was first to bring one to regulators for approval with its CRISPR/Cas9 Gene-Edited Therapy for the treatment of sickle cell disease and transfusion-dependent beta thalassemia (6).



➤ **Biotech in sustainable development** : The fusion of biology and engineering in synthetic biology is opening doors to engineered organisms for sustainable manufacturing and customized therapeutic purposes.

Precision agriculture, genetically modified crops, and sustainable farming practices are addressing global food security challenges, increasing yields, and creating nutrient-enriched foods.

What does the new year hold for the biotechnology industry?



➤ **Artificial intelligence (AI), Machine learning and Big data** : The year 2023 marked a watershed moment in the evolution of technology, with generative AI becoming mainstream. Machine learning and AI have found increased applications

into biotechnology, especially in drug development, clinical trial design and personalized medicine domain. Predictive analytics models contribute to public health by forecasting and monitoring disease outbreaks, allowing proactive interventions.

Big Data is revolutionizing a number of industries, not least of which is Biotechnology. In 2024, Big Data will emerge as a driving force in biotechnology, transforming analysis and innovation. Its impact spans genomics, accelerating drug discovery, aiding biomarker discovery, and providing crucial insights for personalized treatment regimens.



References:

- [1] "[French Healthcare Biotech companies take over BIO Digital](#)", French Healthcare. June 2020
- [2] "[Pour les biotechs, après l'euphorie, le brutal coup d'arrêt des investissements](#)", by Zeliha Chaffin. Le Monde. Feb 2023
- [3] "Navigating The Biotech Landscape: Insights Into Clinical Trials, Funding Trends, Challenges, And Transformations Amidst Covid-19 And Beyond (2023)", Novotech. Oct 2023
- [4] "[Après des levées de fonds record, les biotechs de retour sur Terre](#)", by AFP. Nov 2022
- [5] Article "[Five potential EU regulatory changes impacting the life sciences industry in 2023](#)", by Elizabeth Anne Wright, Edward Turtle, Jessica Koffel. European pharmaceutical review. Feb 2023
- [6] [CRISPR's Vertex therapy](#), January 2024



By [Eka Putra Gusti Ngurah Putu](#)

Genopole stands as a pioneer among french bioclusters, representing a convergence of academic research, technological advancements, and innovative companies, and fostering a vibrant ecosystem dedicated to scientific research and groundbreaking innovation. Located at Évry-Courcouronnes, which is 30 km away south of Paris, Genopole includes 65 companies, 25 shared technological platforms and 17 academic laboratories - including two national reference centers in genomics operated by CEA (the University of Évry Val d'Essonne-Paris Saclay and the Centre Hospitalier Sud Francilien).

A key feature of Genopole is its ability to bring together a diverse community of researchers, entrepreneurs, educators, and students, constituting a critical and unparalleled entity in the biotechnology sector. Its significance extends beyond mere infrastructure; the efforts of 2,400 skilled individuals contribute to the economic development of the southern Ile-de-France region.

Genopole spans five campuses within a 3 km radius and provides offices, shared desks such as Open Lab, common areas to foster collaborations, fully equipped laboratories and a 2500 sqm2 business incubator dedicated to biotechnology startups. Genopole is closely involved in higher education in applied sciences and technologies, digital sciences and management. With over 20,000 students, including doctoral candidates, Genopole plays a significant role in both initial and continuing education, and runs specialized training programs such as Shaker and Gene.iO. Genopole also partners with prestigious institutes such as Paris-Saclay University, major engineering schools including École Polytechnique, Centralesupelec, Ensta, Télécom SudParis, ENSIIE, etc., and a management school (IMT-BS) specializing in biotechnology and drug bioproduction professions.



Furthermore, Genopole is part of an international network that encompasses companies, startups, research laboratories, and educational institutions. The biocluster aims to provide innovative therapies, industrial biotechnologies, and digital genomics solutions. Genopole is thus an embodiment of both human creativity and joint creation providing not only cutting-edge R&D, but also a favorable environment for education and the exchange of ideas within the fast-paced world of biotechnology.

The good news is that Genopole opens a 3rd call for applications for the ApogeeBio Program, funded by the European Union's Horizon 2020 research and innovation program under the Marie Skłodowska-Curie grant. This is a unique opportunity tailor-made for postdoctoral researchers who aspire to escalate their careers in an environment brimming with dynamism and innovation.

Important Dates to Remember:



Submission Deadline: February 28, 2024







Start of Fellowships: at the latest Nov 1, 2024



Selection of Candidates: June 2024








Key Highlights of the Program:

-  **Location:** Join the program at Genopole, the Paris Region's premier biocluster.
-  **Stipend:** Receive a net monthly stipend of up to €3000 for a 24-month term.
-  **Research Areas:** Dive into diverse fields like gene and cell therapies, environmental genomics, molecular biology, computational biology, and much more.
-  **Career Development:** Benefit from comprehensive training, expansive networking opportunities, and specialized workshops in partnership with ABG Asso and Science-Accueil.

Embark on this journey to work in one of the world's most vibrant scientific hubs and be an integral part of an international research community. For detailed eligibility criteria and application instructions, please visit our [website](#).

Don't miss out on this incredible opportunity and [APPLY](#) before February 28, 2024, and elevate your research career!

For more details, reach out to us at **Genopole**:

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The Newsletter teams hope to acknowledge **Victor Kreis** for his support in providing the content and information needed for this article.

Join the Réseau Biotechno!

Volunteers welcome!

Being a member of the Réseau Biotechno association will allow you to develop skills in communication, project management, logistics, writing and to develop your network especially in biotech sector!

Whether you are interested in organising a forum, webinars or participating in communication or newsletter of the Réseau

Biotechno, don't hesitate to contact us at

bureau@reseau-biotechno.com



We are looking for newsletter volunteers

Join the team and help write articles, find insightful content, chat with interviewees, advertise events and more!

Suggestions welcome, answer our newsletter poll!

Have 5 minutes for a questionnaire? Tell us what you'd like to see in our newsletter in 2024!

  **Reply here**  [link](#)

The **REAL** section (for **Read** – Analyze – Listen) highlights our recommendations of the month.



What you can **READ** this month ?

- ***Getting scooped, crafting sustainable work habits: Science's top personal essays of 2023*** by Katie Langin for Science
Find the best of Science's personal essays of 2023 on a variety of topics ranging from facing racism, nurturing relationships to building sustainable work habits in academia. Read the article [here](#)
- ***Start 2024 by asking: Why do Science ?*** by By Mirko Treccani & Laura Veschetti for Nature
This short article suggests you start 2024 by asking yourself and your colleagues this important question! Read it [here](#)



What you can **ANALYZE** this month ?

- ***Euraxess Career development resources***
You may have used the Euraxess portal (from the European Commission) for searching funding and academic job offers, but have you checked out its numerous career tools? Browse useful resources for your career development, be it in academia, industry or entrepreneurship [here](#)!



What you can **LISTEN** to this month ?

- ***Dr What Now? Podcast***
The Dr What Now? Podcast was launched in 2023 to showcase the many career opportunities available to PhDs. Discover the day-to-day job and career path of life science PhD graduates [here](#)!

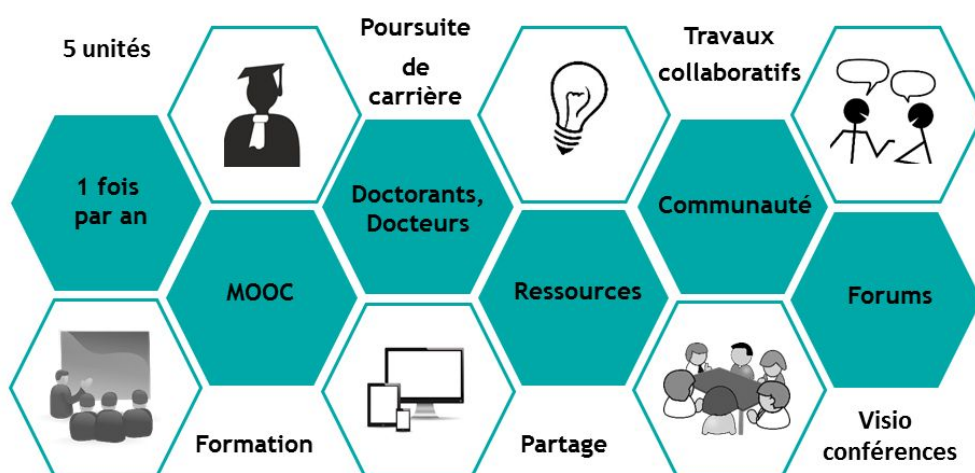


SPECIAL EVENTS

16th January - 2:00 am : PhDOOC

The PhDOOC association, one of our partners, presents the 8th edition of its free MOOC, available in French and in English, dedicated to career paths after a PhD. Get ready for your career development with fellow attendees!

Find more information and registration [here](#)



From 22th January to 17th March : CV coaching



Need help with your CV ? PhD Talent proposes a new service of personalized advice, with CV correction and optimization and follow-up. For a limited time, sessions will be available to advise you on the creation of your CV. It is a personalized service that takes place in 3 steps at a total price of €69 including :

- Analysis of your CV before the online interview
- An 1-hour videoconference session via Microsoft Teams
- Possibility to send us your corrected and optimized CV for validation and final advice in writing.

[!\[\]\(b792654f2cef9719eabeb6c5be00811e_img.jpg\) Click here for more details and reservation](#)



Jan

13-16th

Rencontres Montagnes & Sciences 2024

When: 13 & 14 January for hikes, 16th for the film festival

Where: Clermont Ferrand

Les Rencontres Montagnes & Sciences proposent pour leur 10ème édition des randonnées dans le Puy-de-Dôme et un festival de films d’aventures scientifiques en montagne. Pour le programme complet, consultez le site de l’association [ici](#)



Jan

18th

HelloBio Lab Life Conference

When : 18th January at 14h00 CET

Where : Fully online

This half-day event is a fully virtual, free conference to support early career scientists in life science. Invited scientists will share insights about life inside and outside the lab and provide valuable career advice. More information and registration [here](#)



Jan

23th

PhD job day - Collège doctoral de l’université de Lille

When: from 23rd January to 9th February 2024

Where: Online

Free digital job forum for master students, PhD students and PhD graduates. Check out the program and dates for CV workshops, job dating, job offers, conferences, roundtables and more! You can also sign up for the **recruitment day**, which will be held on the **9th February**. Find out more [here](#).





Mar

31^{ts}

Curious2024 – Future Insight™

When : Submission deadline 31. March 2024, the conference will be held on July 10–11, 2024

Where : On-site (Germany) and Online participation

The Curious – Future Insight™ Conference brings together some of the world's brightest scientists and most accomplished innovators to present their work and explore the future of science and technology, solving the challenges of today and enabling the dreams of a better tomorrow. Check more details [here](#)



The Réseau BioTechno family wishes

you all the very best for 2024!

