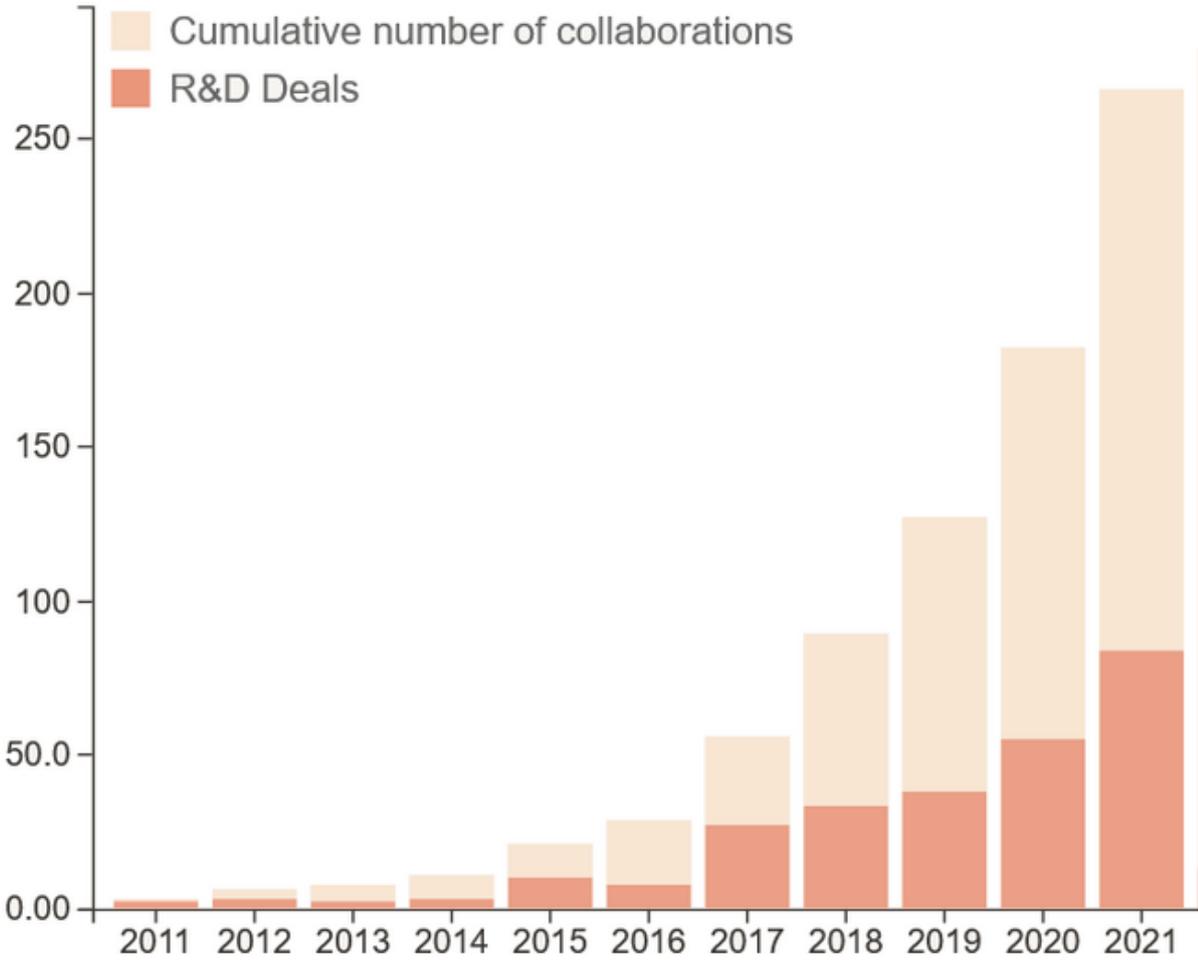


# 9 Notable AI-powered Biotech Companies Founded in 2021

May 4, 2022 by Bohdana Sokolova

Ever since the early 2000s, Artificial Intelligence (AI) has become a useful tool in various fields, from game design and speech recognition to powering driving cars and military applications. No wonder that big pharma companies are striving to keep up with technological progress and implementing AI in their internal R&D and business workflows. Pharmaceutical giants are actively recruiting machine learning and AI experts: for instance, from January 2020 to June 2021 AstraZeneca had 676 job vacancies for AI tech specialists, being followed by Johnson & Johnson and Takeda Pharmaceuticals with 616 and 545 positions respectively. Another source of technological and artificial intelligence expertise comes from external vendors by collaborating with AI-powered startups and more established companies. The cumulative number of such collaborations has increased significantly over the 2016-2021 timeframe, from 29 to 266, and continues to grow. For instance, in 2022 Merck launched a collaboration with Absci Corporation in order to produce enzymes tailored to Merck's biomanufacturing applications with help of artificial intelligence, and Janssen partnered with a French startup Aquemia aiming to predict the potency of small molecules for a given target based on quantum physics-based calculations for datasets selected by Janssen.

Below is a chart illustrating the increasing number of R&D collaborations involving "big pharma" and AI-driven drug discovery companies (mostly startups and scaleups).



The world of AI-driven startups in biotech is rapidly evolving, according to 'The Landscape of Artificial Intelligence (AI) in Pharmaceutical R&D' number of AI-driven companies in drug discovery and development increased from 45 in 2010 to 343 firms in 2021. Some companies in this list offer AI-driven computational tools and services for the key stages of a drug discovery pipeline — from finding consumables and reagents for chemical synthesis to clinical development and biomarker discovery. Others are building internal drug discovery pipelines using advanced AI-driven drug design platforms.

In this post I have summarized an alphabetically-ordered list of 9 biotech companies that were founded in 2021 and are developing innovative AI-powered solutions either for internal use, or as a part of service offering to clients.

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### Celeris Therapeutics

This Austria-based company is designing novel proximity-inducing compounds (PICs™) that give scientists a unique opportunity to control biological function, to treat diseases with high unmet medical need. Their patent-filed approach uses active machine learning (ML) to predict biomolecular interactions and generate new chemical entities.

The wholly-owned pipeline is focused on degrader development in oncology and central nervous system disorders.

### Congruence Therapeutics

This biotech startup with Clarissa Desjardins as a CEO, who was the founder and former chief executive of Montreal-based Clementia Pharmaceuticals, is working at the interface of computational and experimental drug discovery to design novel small molecules for diseases of protein misfolding. Combining the power of structural bioinformatics, computational chemistry, and machine learning, the company deploys an in silico platform that enables the design of new pharmacological stabilizers, a validated class of small molecules, at an unprecedented speed and scale.

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In February 2022 Congruence Therapeutics succeeded to secure \$50M in the Series A round of funding led by Amplitude Ventures and Fonds de solidarité FTQ.

## Isomorphic Labs

This startup is a subsidiary of Alphabet Inc. created in November 2021. According to the founder and CEO of Isomorphic Labs (and DeepMind) Demmis Hassabis, this commercial venture has a mission to “reimagine the entire drug discovery process from first principles with an AI-first approach and, ultimately, to model and understand some of the fundamental mechanisms of life”.

## Non Exomics

This US-headquartered startup aims to diagnose and cure diseases emanating from the NonExome. Company’s researchers have identified mutations in nonexomal regions that are strongly associated with poorly diagnosed, poorly treated, or currently deemed incurable diseases. Integrating proteomics, transcriptomics and genomics data in the firm’s platform, NonExomics has identified nonexomic disease-specific targets for 150 rare diseases, schizophrenia and bipolar neuropsychiatry disorders, and 22 types of cancer.

## Omnia Biosystems

Omnia Biosystems’ is a London-based biotech startup whose goal is to create a smart peptide therapeutics discovery system driven by neural networks to optimize time & financial spends. Inspired by computer-aided drug design, Omnia develops AI-based molecular drug design and currently has four candidates in the pipeline — three of them against various types of cancer and one designed to activate T cells. Company’s platform BioPATH AI™ leverages the power of enabling technologies such as artificial intelligence and machine learning to improve prediction accuracy on therapeutic outcomes, and offer Omnia’s partners the opportunity to diversify drug pipelines using a cost-effective model.

## Perspix Biotech

Germany-based company Perspix Biotech is radically changing the development of multi-functional biotherapeutics bridging end-to-end automation of lab unit operations with AI driven protein engineering. The proprietary Perspix Platform accelerates the development and optimization of novel biomolecular drug candidates to several months instead of years. In the process, massive data sets are created and are used to train Perspix's AI core. It is this combination of in-silico solutions with fully automated wet lab processes which leads to heavily increased efficiencies and which delivers substantial reductions in development cost and time.

## RECEPTOR.AI

The startup company has created an AI-driven drug discovery platform for pharma, biotech and academia that covers the whole drug discovery pipeline in a flexible and scalable manner. Our AI solutions are tailored to discover novel drug candidates for the most challenging diseases with high success rates in clinical trials.

Receptor.AI's mission is to create superior drugs, which are safe, efficient and successful in clinical trials by developing a next generation drug discovery platform based on the synergy of AI, computational chemistry and biomimetic technologies, such as organs-on-a-chip.

## Tandem AI

TandemAI is an advanced technology company dedicated to reinventing drug discovery infrastructure. To deliver turnkey drug discovery solutions, the company is integrating proprietary AI-powered, high-performance computation with its efficient, large-scale in-house wet lab operations. TandemAI has built its networked platform from the ground up in the United States and China to increase the speed of drug discovery and deliver cost-effective opportunities to its partners and to the global scientific

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community.

## Zephyr AI

Zephyr AI is a high-growth healthcare technology company committed to radically rebuilding drug discovery and precision medicine from the ground up. By harnessing the power of next-generation artificial intelligence and machine learning to sort through massive data sets, Zephyr AI empowers the healthcare system with the advanced analytical tools to redefine drug development, streamline clinical trials, and revolutionize the treatment of cancer, diabetes and other diseases.

And the company continues working towards their goals in 2022, as Zephyr AI has already raised \$18.5 M in seed funding and announced a strategic partnership in oncology with Next-Immune this year.

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- Congruence Therapeutics
- RECEPTOR.AI