InVirtuoLabs Secures €2.85 Million: AI Accelerates Drug Discovery

Swiss biotech startup revolutionizes pharmaceutical research with artificial intelligence and aims to halve development time and costs

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InVirtuoLabs, a biotech startup founded in Lugano in 2024, has closed its first funding round of €2.85 million, marking a decisive acceleration in pharmaceutical research. Leveraging generative artificial intelligence and advanced molecular simulations, the startup aims to drastically reduce the time and cost of drug development, making treatments more accessible.

At the heart of InVirtuoLabs' innovation is the Next Generation Virtual Lab, a proprietary platform that uses AI and molecular modeling to identify and optimize drugs with proven precision. This approach allows for doubling success rates compared to current research methods, drastically reducing both costs, currently exceeding €2.4 billion per drug, and development times, currently averaging 12 years.

"The integration of artificial intelligence, chemistry, and molecular biophysics is radically changing the way we develop drugs," says Gianvito Grasso, Founder and CEO of InVirtuoLabs, and Researcher & Lecturer at IDSIA–Dalle Molle Institute for Artificial Intelligence (USI-SUPSI). "Our system is not limited to analyzing existing data, but generates and tests billions of new molecules, identifying the best ones for efficacy and safety. In particular, we want to accelerate the development of treatments for rare diseases, an area still lacking adequate solutions."

"The company is positioned at the crossroads of artificial intelligence, pharmaceutical innovation, and biotechnology," adds Sertac Yeltekin, Founder and COO of InVirtuoLabs. "This ambitious project rests on three fundamental pillars: attractiveness to investors, ability to recruit and retain global talent in AI, and potential to generate concrete social impact."

The platform's first major achievement was the development of an innovative protocol for drugs targeting nuclear receptors, key proteins in regulating fundamental processes such as metabolism, cell growth, and inflammatory response. These receptors are involved in over 100 diseases, including metabolic disorders and some cancers. InVirtuoLabs is already applying this protocol to a receptor involved in high-incidence metabolic diseases, with the aim of accelerating the discovery of new treatments.

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InVirtuoLabs is available for interviews and speaking engagements

The InVirtuoLabs team brings together experts with over 50 years of experience in the pharmaceutical industry, with backgrounds in leading companies such as Pfizer, Novo Nordisk, Baxter, and Helsinn Healthcare, as well as researchers specializing in machine learning. In the next 18 months, the startup plans rapid expansion, with the goal of strengthening the team, initiating strategic collaborations, and expanding the capabilities of the platform.

InVirtuoLabs has partnered with prominent investors worldwide, from London to Zurich, Milan, and Lugano, to Istanbul, Athens, Singapore, and Seattle, building a strong international network.

The startup won the first prize at the Boldbrain Startup Challenge, an acceleration program for innovative ideas organized by the Agire Foundation in collaboration with the Startup Centre of the University of Italian Switzerland (USI), and with the support of the Department of Finance and Economy and BancaStato.InVirtuoLabs is also supported by the USI Startup Center within its incubation programs.

“Since inception, we’ve been adjusting our models while engaging with biotech and pharmaceutical companies of all sizes.” adds Demet Olesen, InVirtuoLabs’ CCO. “These early conversations not only help us sharpen our technology but also ensure we’re addressing real-world industry needs. Staying closely connected to potential partners keeps us at the forefront of innovation and accelerates our ability to deliver transformative solutions.”

"Our vision is clear: to democratize access to innovative therapies, making drug discovery faster, more precise, and economically sustainable," concludes Grasso. "With this investment, we are transforming AI into a revolutionary tool against rare diseases, offering new hope to millions of patients."

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