

Elix, an AI Drug Discovery Company, and Tohoku University Enter Joint Research Agreement to Advance AI Drug Discovery

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/EINPresswire.com/ -- Elix, Inc. (CEO: Shinya Yuki / Headquarters: Tokyo; hereinafter "Elix") and the Graduate School of Life Sciences at Tohoku University (Dean: Kouki Hikosaka / Headquarters: Miyagi; hereinafter "Tohoku University") are pleased to announce the signing of a joint research agreement aimed at advancing drug discovery using AI technologies.



elix_tohokuuniversity-logo

Traditional drug discovery processes require considerable time and cost to identify promising compounds from among a vast number of candidates, yet still face low success rates as a major challenge. Against this backdrop, the introduction of AI is drawing attention as a transformative approach to improving the efficiency of drug discovery research. In particular, the application of AI to molecular design and property prediction makes it possible to more accurately design drug candidates and narrow down synthesis and evaluation targets, thereby accelerating development and reducing costs from the early discovery stage onward.

Elix (<https://www.elix-inc.com/>) is a Japan-based AI drug discovery company with the mission of "Rethinking Drug Discovery." To reduce the immense costs and time associated with drug development while enhancing success rates, Elix leverages AI and machine learning in collaborations with pharmaceutical companies, universities, research institutes, and biotech startups. Its business model consists of two main pillars: providing pharmaceutical companies with the integrated AI drug discovery platform Elix Discovery™, developed under the concept of "medicinal chemists can truly use it," and advancing collaborative drug discovery projects with strategic partners using Elix's latest AI technologies and extensive expertise.

Elix Discovery™ offers an intuitive graphical user interface (GUI) that can automatically construct predictive models for optimal compound profiles. It also features diverse structure generation functions, with a unique strength in "proposing structures that humans would not conceive." By

combining curated structure generation models, including proprietary ones, with predictive models and parameters built on the GUI, researchers can rapidly and intuitively optimize molecular design. The platform also supports both ligand-based drug design (LBDD) and structure-based drug design (SBDD), the latter utilizing docking simulations and other methods, thus enabling exploration across a broader range of approaches.

Beyond providing technology platforms, Elix actively promotes joint research projects with biotech ventures and academia*1. By combining its vast knowledge of pharmaceutical research with cutting-edge AI, Elix continues to pursue the discovery of innovative drug candidates.

The Laboratory of Bioactive Molecules at the Graduate School of Life Sciences, Tohoku University (<https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45409.html>) is engaged in the development of novel approaches for small-molecule drug discovery and chemical biology, rooted in organic chemistry and cell biology. The lab focuses on small-molecular PROTACs (proteolysis targeting chimeras) that induce degradation of intracellular target proteins, and on targeted protein degradation (TPD), which can selectively degrade specific proteins. These efforts aim to propose new drug discovery strategies against “undruggable” proteins that have traditionally been difficult to target.

In this joint project, Elix will collaborate with the research group led by Professor Minoru Ishikawa, a leading pioneer of TPD research in Japan. By integrating Elix’s strengths in compound profile prediction and molecular generation AI with Professor Ishikawa’s proprietary technologies and unique expertise, the partners aim to develop compounds that act on targets critical to cellular homeostasis. The compounds generated through this collaboration are expected not only to provide valuable insights into biological functions but also to expand possibilities for next-generation therapies.

Comment from Professor Minoru Ishikawa, The Laboratory of Bioactive Molecules at the Graduate School of Life Sciences, Tohoku University

TPD research has been attracting global attention, and we have been seeking ways to shorten the time required to identify small-molecule ligands for relevant proteins. Elix’s AI drug discovery technology is highly attractive as a means to achieve this, and I am delighted to collaborate with them. Through this joint research, we will accelerate ligand discovery for TPD, advance TPD research together with Elix, and work toward proposing new therapeutic strategies for intractable diseases.

Comment from Shinya Yuki, CEO of Elix, Inc.

We are very pleased to accelerate the creation of novel compounds for difficult-to-target proteins by combining Elix’s AI drug discovery technologies with the unique methods and deep expertise of Professor Ishikawa, a leader in TPD research. By applying our strength in structure generation AI to TPD, a new modality, we aim to open new frontiers in drug discovery research that could not be achieved by Elix alone, in partnership with Tohoku University.

Reference:

*1 April 15, 2025 press release: "Elix and PRISM BioLab Join Forces to Accelerate AI-Driven Drug Discovery for Challenging Protein-Protein Interaction Targets"

URL: <https://www.elix-inc.com/news/news-release/2117/>

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