
YUMAB and MOLCURE Collaborate To Advance Zero-Shot AI Antibody Discovery Technology For Undrugged Targets

YUMAB GmbH (“YUMAB”), a leading antibody discovery CRO headquartered in Braunschweig, Germany, and MOLCURE Inc. (“MOLCURE”), an AI-driven drug discovery company based in Kawasaki, Japan, announced their ongoing collaboration now includes advancing the application of zero-shot AI technology for antibody discovery. The collaboration brings together complementary expertise and technologies. MOLCURE has a decade of experience in AI-design of antibodies and has accumulated over a billion proprietary experimental data points, and YUMAB has more than thirty years of technical excellence and research in antibody discovery, engineering and manufacturing.

YUMAB and MOLCURE share a common vision to push the boundaries of antibody discovery for difficult to drug protein classes that are of high therapeutic potential, such as G protein-coupled receptors (GPCRs) and ion channels. These proteins are often challenging to screen with conventional methods, including animal immunization and display screening. In these physical screening systems, many factors can result in the target protein and/or antibodies not being expressed or not in pathophysiological conformations, causing a failure to identify potentially therapeutic antibodies.

YUMAB and MOLCURE are collaborating on zero-shot AI technology to overcome the barriers of conventional screening methods for undrugged targets. Zero-shot AI technology enables the in silico de novo design of antibody sequences based on antigen sequences and/or target structures. This de novo design of antibodies, which does not require initial physical screening to identify starting points, will expand the types of targets that can be drugged and increase the diversity of antibody sequences for each target.

In the collaboration, MOLCURE is using its proprietary zero-shot AI technology to design antibody sequences and is also applying both physics-based methods, such as molecular dynamics, and additional AI algorithms for accuracy improvement. YUMAB then draws on its deep expertise and technology to express the designed antibody sequences and perform experimental measurements. The data that is generated is incorporated into the AI for further iteration and optimization of antibody design.

“We’re excited about the progress we have made in our collaboration with MOLCURE and their AI technology,” said Dr. Thomas Schirrmann, CEO, YUMAB. “Once zero-shot AI technology is fully developed, it will give clients the opportunity to explore a much larger and more diverse sequence space than can be physically generated in conventional screening, which will translate into better antibodies for more targets, and significant savings in time and money.”

“YUMAB is the ideal partner to ensure that we maximize the number of zero-shot designed antibodies that are made and tested, and we’ve been impressed by the outcomes of the collaboration” said Dr. Satoshi Tamaki, CEO/CSO, MOLCURE. “Our goal is to utilize zero-shot AI technology to deliver next-generation antibodies to as many patients as possible.”

About YUMAB

YUMAB GmbH, a leading provider of contract research, technologies, and R&D services for the development of fully human, therapeutic antibodies, was founded in 2012 by leading antibody researchers of the University of Braunschweig. A global player in human monoclonal antibody development, YUMAB is focused on the use of fully human and humanized antibodies for immunotherapies. For more information, please visit www.YUMAB.com.

About MOLCURE

MOLCURE Inc. is at the forefront of AI-powered drug discovery for antibodies and peptides. Our discovery platform integrates advanced AI models, physics-based simulations, and high-quality experimental data that are generated in our laboratory. This platform empowers the discovery of innovative biologics that are safer and more effective, and enables the pursuit of undrugged targets that are beyond the capabilities of other technologies. We partner with visionary organizations to accelerate R&D, and our team is committed to transforming patient care worldwide.

MOLCURE is headquartered in Kawasaki, Japan with a research facility at Tsuruoka, Japan. The company was founded in 2013, and has partnered with leading pharmaceutical companies. Learn more about us at www.molcure.com.

IMAGE



Caption:

Antibody specialist YUMAB GmbH and AI-driven drug discovery company MOLCURE join forces in antibody discovery for difficult to drug protein classes that are of high therapeutic potential, such as G protein-coupled receptors (GPCRs) and ion channels.

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