



Amgen and Generate Biomedicines Announce Multi-Target, Multi-Modality Research Collaboration Agreement

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Companies Partner to Leverage Generate's Machine Learning-Enabled Technology Platform to Discover and Create Protein Therapeutics for Patients

THOUSAND OAKS, Calif. & CAMBRIDGE, Mass.--(BUSINESS WIRE)--Jan. 6, 2022-- Amgen (NASDAQ: AMGN) and Generate Biomedicines today announced a research collaboration agreement to discover and create protein therapeutics for five clinical targets across several therapeutic areas and multiple modalities. As part of the research collaboration, Amgen will pay \$50 million in upfront funding for the initial five programs with a potential transaction value of \$1.9 billion plus future royalties, and will have the option to nominate up to five additional programs, at additional cost. For each program, Amgen will pay up to \$370 million in future milestones and royalties up to low double digits. Amgen will also participate in a future financing round for Generate. Additional terms were not disclosed.

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"We are now at a scientific hinge point, where computational approaches can advance our knowledge of biology and further drive our ability to design the right molecule for some of the most challenging targets," said David M. Reese, M.D., executive vice president of Research and Development at Amgen. "We believe Generate Biomedicine's integrated in silico design and wet lab capabilities combined with Amgen's strength in protein engineering can accelerate our drug discovery efforts, generating novel protein sequences with optimal therapeutic properties."

Recognizing the unique discovery challenges in multispecific drug discovery, Amgen has invested over the last decade in the marriage of wet lab high throughput automation and dry lab computational biology. Amgen's generative biology strategy has led to the building of a Digital Biologics Discovery group, to harness the Company's pioneering strength in biology, automation, and protein engineering. The goal of generative biology at Amgen is to take this experience and expertise in biologics combined with emerging sequence-based drug design technologies to deliver complex multispecific medicines against a variety of difficult-to-treat diseases. Combining Amgen's biologics drug discovery expertise with the power of Generate Biomedicines Artificial Intelligence (AI) platform provides the opportunity to further facilitate multispecific drug design by shaving time off discovery timelines and generating potential lead molecules that have predictable manufacturability and clinical behavior.

Generate Biomedicines is pioneering the field of generative biology – a revolutionary approach to drug discovery and development that leverages machine learning and AI to program novel protein therapeutics. The company's machine learning algorithms analyze hundreds of millions of known proteins, looking for statistical patterns linking amino acid sequence, structure and function, and its technology platform has been enhanced by closed-loop learning on tens of thousands of computationally generated and broadly experimental characterized novel proteins over the past three years. Combined with the company's wet lab research, the platform can rapidly generate antibodies, peptides, enzymes, cell and gene therapies to potentially meet a wide variety of therapeutic needs. This has enabled the company to learn the generalizable rules by which a linear amino acid sequence encodes protein structure and function and design therapeutics for previously intractable targets at an unprecedented speed and scale.

"This agreement is a recognition of the transformative power of our generative biology platform," said Mike Nally, chief executive officer, Generate Biomedicines and CEO-partner, Flagship Pioneering. "We're proud to partner strategically with Amgen to combine their world-leading expertise in engineering protein-based therapies with our unique machine learning-enabled drug generation platform. With our technology platform, we are able to expand beyond just proteins that are found in nature – creating *de novo*, purpose-built proteins capable of performing any desired function under timelines that have not been possible through other approaches."

About Amgen

Amgen is committed to unlocking the potential of biology for patients suffering from serious illnesses by discovering, developing, manufacturing and delivering innovative human therapeutics. This approach begins by using tools like advanced human genetics to unravel the complexities of disease and understand the fundamentals of human biology.

Amgen focuses on areas of high unmet medical need and leverages its expertise to strive for solutions that improve health outcomes and dramatically improve people's lives. A biotechnology pioneer since 1980, Amgen has grown to be one of the world's leading independent biotechnology companies, has reached millions of patients around the world and is developing a pipeline of medicines with breakaway potential.

Amgen is one of the 30 companies that comprise the Dow Jones Industrial Average and is also part of the Nasdaq-100 index. In 2021, Amgen was named one of the 25 World's Best Workplaces™ by Fortune and Great Place to Work™ and one of the 100 most sustainable companies in the world by Barron's.

For more information, visit www.amgen.com and follow us on www.twitter.com/amgen.

About Generate Biomedicines

Generate Biomedicines is the first drug generation company, pioneering a machine learning-powered multimodality Generative Biology platform with the ability to generate new drugs on demand across a wide range of biologic modalities. The platform can drastically improve the speed at which targets and therapeutics are identified and validated, the specificity of target engagement by generated proteins, and the cost of identifying and developing clinical candidates. The company's platform represents a potentially fundamental shift in what's possible in the field of therapeutic development, addressing key challenges of drug discovery and drastically expanding the available search space for novel biomedicines. Generate Biomedicines was founded by Flagship Pioneering after two years of foundational research in its Labs unit and launched in 2020. Learn more about Generate Biomedicines by visiting <https://generatebiomedicines.com/> or following the company on [Twitter](https://www.twitter.com/generatebiomedicines) and [LinkedIn](https://www.linkedin.com/company/generatebiomedicines).

Amgen Forward-Looking Statements

This news release contains forward-looking statements that are based on the current expectations and beliefs of Amgen. All statements, other than statements of historical fact, are statements that could be deemed forward-looking statements, including any statements on the outcome, benefits and synergies of collaborations, or potential collaborations, with any other company (including BeiGene, Ltd., Kyowa-Kirin Co., Ltd., Generate Biomedicines, Inc., or any collaboration to manufacture therapeutic antibodies against COVID-19), the performance of Otezla® (apremilast) (including anticipated Otezla sales growth and the timing of non-GAAP EPS accretion), the Five Prime Therapeutics, Inc. acquisition, or the Teneobio, Inc. acquisition, as well as estimates of revenues, operating margins, capital expenditures, cash, other financial metrics, expected legal, arbitration, political, regulatory or clinical results or practices, customer and prescriber patterns or practices, reimbursement activities and outcomes, effects of pandemics or other widespread health problems such as the ongoing COVID-19 pandemic on our business, and other such estimates and results. Forward-looking statements involve significant risks and uncertainties, including those discussed below and more fully described in the Securities and Exchange Commission reports filed by Amgen, including our most recent annual report on Form 10-K and any subsequent periodic reports on Form 10-Q and current reports on Form 8-K. Unless otherwise noted, Amgen is providing this information as of the date of this news release and does not undertake any obligation to update any forward-looking statements contained in this document as a result of new information, future events or otherwise.

No forward-looking statement can be guaranteed and actual results may differ materially from those we project. Our results may be affected by our ability to successfully market both new and existing products domestically and internationally, clinical and regulatory developments involving current and future products, sales growth of recently launched products, competition from other products including biosimilars, difficulties or delays in manufacturing our products and global economic conditions. In addition, sales of our products are affected by pricing pressure, political and public scrutiny and reimbursement policies imposed by third-party payers, including governments, private insurance plans and managed care providers and may be affected by regulatory, clinical and guideline developments and domestic and international trends toward managed care and healthcare cost containment. Furthermore, our research, testing, pricing, marketing and other operations are subject to extensive regulation by domestic and foreign government regulatory authorities. We or others could identify safety, side effects or manufacturing problems with our products, including our devices, after they are on the market. Our business may be impacted by government investigations, litigation and product liability claims. In addition, our business may be impacted by the adoption of new tax legislation or exposure to additional tax liabilities. If we fail to meet the compliance obligations in the corporate integrity agreement between us and the U.S. government, we could become subject to significant sanctions. Further, while we routinely obtain patents for our products and technology, the protection offered by our patents and patent applications may be challenged, invalidated or circumvented by our competitors, or we may fail to prevail in present and future intellectual property litigation. We perform a substantial amount of our commercial manufacturing activities at a few key facilities, including in Puerto Rico, and also depend on third parties for a portion of our manufacturing activities, and limits on supply may constrain sales of certain of our current products and product candidate development. An outbreak of disease or similar public health threat, such as COVID-19, and the public and governmental effort to mitigate against the spread of such disease, could have a significant adverse effect on the supply of materials for our manufacturing activities, the distribution of our products, the commercialization of our product candidates, and our clinical trial operations, and any such events may have a material adverse effect on our product development, product sales, business and results of operations. We rely on collaborations with third parties for the development of some of our product candidates and for the commercialization and sales of some of our commercial products. In addition, we compete with other companies with respect to many of our marketed products as well as for the discovery and development of new products. Discovery or identification of new product candidates or development of new indications for existing products cannot be guaranteed and movement from concept to product is uncertain; consequently, there can be no guarantee that any particular product candidate or development of a new indication for an existing product will be successful and become a commercial product. Further, some raw materials, medical devices and component parts for our products are supplied by sole third-party suppliers. Certain of our distributors, customers and payers have substantial purchasing leverage in their dealings with us. The discovery of significant problems with a product similar to one of our products that implicate an entire class of products could have a material adverse effect on sales of the affected products and on our business and results of operations. Our efforts to collaborate with or acquire other companies, products or technology, and to integrate the operations of companies or to support the products or technology we have acquired, may not be successful. A breakdown, cyberattack or information security breach could compromise the confidentiality, integrity and availability of our systems and our data. Our stock price is volatile and may be affected by a number of events. Global economic conditions may magnify certain risks that affect our business. Our business performance could affect or limit the ability of our Board of Directors to declare a dividend or our ability to pay a dividend or repurchase our common stock. We may not be able to access the capital and credit markets on terms that are favorable to us, or at all.

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