

X-Chem and Gilead Announce Drug Discovery Collaboration

- *Agreement leverages X-Chem's DEX™ DNA-Encoded Libraries and Gilead's proprietary know-how to enable the discovery of new chemical entities*

WALTHAM, Mass. – November 28, 2017 – X-Chem, Inc. (X-Chem), a privately held biotechnology company applying its innovative drug discovery platform to the generation of novel small molecule therapeutics, announced today a drug discovery partnership with Gilead Sciences, Inc. (Gilead). Under the terms of the agreement, X-Chem will screen its proprietary DEX™ libraries, which contain >120 billion individually DNA-encoded small molecules, toward the discovery of novel, high-value therapeutic leads against targets in antiviral and additional therapeutic areas. Gilead has the option to license drug leads discovered under the collaboration, and will be responsible for further development and commercialization of the resulting programs.

“Gilead is a world leader in antiviral therapeutics,” said Rick Wagner, Ph.D., Chief Executive Officer of X-Chem. “We are eager to deploy X-Chem’s industry-leading DEX™ drug discovery platform against life-threatening diseases and identify new chemical entities toward which Gilead can apply its R&D expertise.”

Under the terms of the agreement, X-Chem will receive an upfront payment, potential licensing fees, and additional payments for the achievement of pre-defined research, development, and regulatory milestones.

About X-Chem’s DNA-Encoded (DEX™) Libraries and Platform

Due to the size and diversity of the DEX™ library, X-Chem can discover multiple series of novel, potent and selective lead compounds at an unprecedented rate of success against a wide range of targets, including some that previously failed using conventional screening methods. A number of proprietary innovations in library design, screening methodology and bioinformatics underlie the exceptional performance of the DEX™ platform. In particular, X-Chem’s approach to library construction allows for additional chemical reactions to become useable in DNA-encoded library synthesis. Together, these developments result in a much greater repertoire of diversity for small molecules, which cover a range of categories including fragment molecules, small molecular weight heterocyclic compounds, and macrocyclic structures. This diverse library, combined with a heightened ability to detect active molecules, has yielded a robust process that has been highly successful against targets categorized as difficult or intractable.

About DNA-Encoding

The X-Chem drug discovery engine is based on a library, currently in excess of 120 billion compounds and growing, generated by iterative combinatorial synthesis of small molecules tethered to DNA tags that record the synthetic history of the small molecule. Every small molecule in the library has a unique DNA barcode attached to it. The library

is screened as a mixture using affinity-based binding to a target of interest. Certain rare molecules in the library that bind to the target can be “fished out,” while the rest of the molecules are washed away. DNA sequencing methods are then used to detect molecules that are enriched when bound to the target. The diverse nature of the library produces multiple families or clusters of related molecules that bind to the target, forming a basis for emergent structure-activity relationships. Structure-activity relationships are typically used by medicinal chemists to guide iterative chemical maturation of a molecule into a drug. Based on the synthetic history encoded in the DNA sequence information, molecules are then made without the DNA tag attached, and tested for activity in conventional assays.

About X-Chem

X-Chem, Inc. is a privately-owned biotechnology company based in Waltham, Massachusetts. The company’s mission is to apply its powerful product engine to the discovery of small molecule compounds against high-value therapeutic targets. X-Chem has established partnerships with Roche, AstraZeneca, Bayer, Pfizer, Alexion, MD Anderson Cancer Center, Sanofi, Janssen, and several other leading pharmaceutical companies, biotechnology organizations, and academic centers. For further information on X-Chem, please visit: <http://www.x-chemrx.com/>.

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