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## News Release

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# X-Chem further expands Collaboration with Bayer to Discover Novel Medicines

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*– Second expansion adds Bayer custom libraries and additional targets to the existing Multi-Year Collaboration –*

**WALTHAM, Mass. – October 3<sup>rd</sup>, 2017** – X-Chem, Inc., a privately held biotechnology company focused on applying its innovative drug discovery capabilities to the generation of novel small molecule therapeutics based on an industry leading DNA-encoded library containing over 120 billion small molecules, and Bayer have further expanded their drug discovery collaboration across multiple therapeutic areas and target classes. The latest agreement with Bayer extends their access to X-Chem's DEX™ technology by including the synthesis of custom Bayer DNA-Encoded Libraries and expanding the number of potential programs. The collaboration is focused on the discovery of innovative small molecule leads for complex drug targets in areas of high unmet medical need.

The two partners have been working together successfully under a research collaboration established in 2012, which was first expanded in 2016. Under the collaboration, Bayer has already licensed two programs for challenging targets from X-Chem. This latest agreement will further expand the scope of the partnership.

Under the terms of this current agreement, X-Chem will receive additional research and development funding, as well as pre-clinical, clinical and regulatory milestone payments for the additional programs, consistent with the 2016 agreement. Bayer retains an exclusive option to

license compounds generated in the course of the collaboration. X-Chem will also receive sales milestones and royalties for each successfully commercialized drug derived from a licensed program.

“This latest collaboration expansion with Bayer will allow us to leverage Bayer’s chemistry competencies to improve the likelihood of finding attractive novel chemical entities against a wide array of targets, including difficult targets” said Rick Wagner, Ph.D., Chief Executive Officer of X-Chem. “We are delighted with the progress we continue to make with Bayer, and look forward to expanding this strong and successful relationship even further.”

### **About the DNA-Encoded X-Chem (DEX™) Library 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 the use of a wider range of chemical reactions 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 fragments, Lipinski-compliant heterocycles, and macrocycles. This diverse library collection, combined with a heightened ability to detect active molecules, has yielded a robust, industry-leading 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 it, and 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. High-throughput DNA sequencing methods are then used to detect molecules that are enriched. 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, representative molecules are then synthesized and tested for activity in conventional assays.

### **About X-Chem**

X-Chem is a privately-owned biotechnology company based in Waltham, Massachusetts, USA. The company’s mission is to apply its powerful DEX™ driven product engine to the discovery of drug-like small molecule leads for high-value therapeutic targets. X-Chem has proven itself to be the encoded-library industry leader with 36 licensed programs to date, and has established partnerships with AbbVie, Alexion, Astellas, AstraZeneca, Bayer, Janssen, Ono, Pfizer, Sanofi, Taiho, Vertex, and many other leading pharmaceutical and biotechnology companies. For further information on X-Chem, please visit: <http://www.x-chemrx.com/>.

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