X-Chem Provides Year-End Update on Partnership Achievements

Announces 40th Drug Discovery License

Nine (9) new partners and several partnership expansions in 2017

WALTHAM, Mass. – December 20, 2017 – X-Chem, Inc., a privately held biotechnology company focused on applying its innovative DNA-encoded (DEX™) library drug discovery engine to the generation of novel small molecule therapeutics, today announced that it has licensed its 40th drug discovery program to an undisclosed large Pharma partner, granting exclusive rights to novel small molecules that interact with the partner's therapeutic target of interest. As an additional achievement for 2017, the company formed 9 new partnerships including Abilita Bio, Astellas, Department of Defense/Harvard, Gilead Sciences, Ono, Otsuka, Taiho, Vertex and one undisclosed partner. This year also saw several expansions of X-Chem's pre-existing collaborations, including those with Bayer and Janssen.

The 40 drug discovery licenses have been granted to 13 partners. X-Chem has consistently increased the number of programs licensed to partners year on year due to its dedicated focus on tackling highly challenging targets, along with ongoing investments in technology improvement and capacity expansion. As an example of the challenging nature of the projects, 10 of the licenses (25%) covered protein:protein interaction targets, one of the notoriously difficult target classes in the industry. Over the past 7 years, X-Chem has partnered with many pharma and biotech companies, as well as several academic institutions. Currently, X-Chem has 22 active partnerships.

Each license is an independent external assessment of the value of the compounds in X-Chem's libraries, as the licensing partner opts to take the compounds in-house for full internal development. All X-Chem licenses carry pre-clinical, clinical and regulatory milestone payments and, in most cases, include royalties. Licensed programs cover targets such as intra- and extra-cellular protein-protein interactions, ubiquitin E3 ligases, G-coupled protein receptors, kinases and other enzymes and epigenetic targets including bromodomains, methylases, demethylases, acyltransferases and deacetylases. The average license comprises multiple distinct series of novel small molecules, each series with demonstrated structure-activity relationships (SAR). SAR within each series is predicted by X-Chem's DEX™ screening and confirmed by synthesis of compounds free of their DNA tags.

"X-Chem has been innovating and pushing the boundaries of the science of DNA-encoded libraries since day one," said Rick Wagner, Ph.D., Chief Executive Officer of X-Chem. "Our recent technology improvements are the most exciting yet, and reflect the vision, innovation and dedication of our scientists. With its technology improvements and partnership success, X-Chem is poised to become a leading engine for the discovery of small molecule preclinical candidates in the industry."

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

X-Chem's DEX™ drug discovery engine is based on a collection of DNA-encoded libraries comprising over 120 billion unique small molecules derived from iterative combinatorial chemistry processes, where the identity of each compound is recorded in a linked DNA barcode. The pooled libraries are used in low volume, affinity-based screening against biological targets, whereby ligands are 'fished out' and identified via DNA sequencing. Innovations in library design, screening methodologies, and bioinformatics underlie the exceptional performance of the DEX™ platform. The use of previously inaccessible chemical reactions and atom-efficient synthesis schemes generate maximal diversity and rule-of-five compliance. Parallel screens, either varying target concentration or including off-targets, mutants or known ligand competitors, allow for insight into the potency, mechanism of action, and specificity of putative hits. Proprietary statistical and bioinformatics tools identify multiple clusters of related molecules with emergent structure-activity relationships. These innovations underpin X-Chem's success against difficult and intractable targets that have failed in conventional screening, and have generated over 100 lead series licensed by X-Chem's partners including fragments, low molecular weight heterocycles, macrocycles, and irreversible covalent electrophiles.

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 leads against high-value therapeutic targets. X-Chem has established partnerships with AbbVie, Abilita Bio, Alexion, Astellas, AstraZeneca, Bayer, Department of Defense/Harvard, Gilead, Janssen, MD Anderson Cancer Center, Ono, Otsuka, Pfizer, Roche, Sanofi, Taiho Pharma, Vertex, 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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