

X-Chem Announces Licensing of 50th Drug Discovery Program

WALTHAM, Mass. – July 26, 2018 – X-Chem, Inc., a privately held biotechnology company focused on applying its industry-leading DNA-encoded (DEXTM) library drug discovery engine to the generation of novel small molecule therapeutics, today announced that it has licensed its 10th drug discovery program to date in 2018, bringing the total number of licensed programs to 50 since it launched its first target-based drug discovery partnership in 2012.

The licensed programs cut across a wide range of the therapeutic areas and target protein classes. In each case, X-Chem identified multiple small molecule compound leads and related structures, using its proprietary >200 billion compound DEX screening platform, that met criteria pre-set by the partner, sometimes including *in vitro* DMPK parameters. The partner subsequently assessed the biochemical and/or cellular activity, novelty of the structures, and in some cases advanced properties of the compounds (such as membrane permeability or blood brain barrier penetration). Each license carries ongoing milestone and royalty commitments from the partner as the compounds advance through drug discovery and development decision gates.

X-Chem's licensing rate with its partners and spin-out companies has substantially increased over the past twelve months, following new breakthroughs with its DEX technology platform. X-Chem's industry-leading group of partners, which include AbbVie, Alexion, Astellas, AstraZeneca, Bayer, Gilead, Janssen, Ono, Otsuka, Pfizer, Roche, Sanofi, Taiho Pharma, and Vertex, together with many other leading pharmaceutical companies, biotechnology organizations, and academic centers, are the direct beneficiaries of these investments. Additionally, X-Chem has launched four spin-out companies, including Xios, X-Biotix, X-Rx, and one undisclosed company, which are advancing programs into late lead optimization and/or clinical development.

"The X-Chem DEX platform continues to deliver high quality small molecule leads against the most challenging targets," said X-Chem CEO, Rick Wagner. "This success is entirely due to the industry-leading innovations we continue to make in next-generation library design, advanced screening methodologies, proprietary informatics tools, and database

infrastructure. These innovations could not have been achieved without building a team with diverse and deep chemistry, encoded library, display technology, and drug discovery expertise, and the know-how that we have acquired over the past decade through screening a multitude of targets in collaboration with our partners.”

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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