

Maruho and X-Chem Announce Drug Discovery Collaboration

WALTHAM, Mass. – September 4, 2019 - X-Chem, Inc. (X-Chem), a privately held biotechnology company focused on applying its next-generation, industry-leading DNA-Encoded library (DEX™) drug discovery platform to the generation of novel small molecule therapeutics, announced today a drug discovery partnership with Maruho Co., Ltd. (Maruho) to discover lead compounds for novel and challenging targets with applications for human diseases.

Under the terms of the agreement, X-Chem will utilize its DEX screening platform, which takes advantage of advanced DEX library designs and proprietary informatics tools, to search for novel drug-like leads for human disease related targets identified by Maruho. X-Chem's DEX libraries enable fast and efficient screening of vast areas of drug-like chemical space, and the collaboration will help support Maruho's continued global growth. Maruho will be responsible for conducting clinical trials with licensed drug candidates, and has the exclusive global rights to commercialize any products resulting from the collaboration.

X-Chem received an upfront payment from Maruho upon the signing of the agreement, and is eligible for future payments based on the achievement of pre-defined research, development, and regulatory milestones. X-Chem could additionally receive royalties on sales of products identified under the collaboration.

"X-Chem is very pleased that Maruho, a dermatology leader, has chosen to join our group of highly regarded partners in Japan. This is X-Chem's 5th partnership in Japan, and is a clear result of the strong record of success that X-Chem has achieved over the past decade of drug discovery partnerships focused on challenging targets. The end result of these partnerships is well over 50 licensed programs to date," said Rick Wagner, president and CEO of X-Chem. "This partnership with Maruho demonstrates that X-Chem can customize our business models to suit the needs of a wide variety of pharma and biotech companies, so as to enable the discovery of novel chemical equity with the goal of helping patients worldwide."

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

X-Chem's DEX drug discovery engine is based on a collection of drug-like DNA-encoded libraries derived from iterative combinatorial chemistry processes in which the identity of each compound is

recorded by a linked DNA barcode. The pooled libraries are used in low volume, affinity-based screens 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 unparalleled success against difficult and intractable targets that have failed in conventional screening, and have generated over 50 programs and 150 chemical 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, Alexion, Amirall, Bristol-Myers Squibb, 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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