

Almirall and X-Chem Announce Dermatology-Focused Drug Discovery Collaboration

WALTHAM, Mass. – December 12, 2018 - 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 Almirall, S.A. (Almirall) to discover lead compounds for innovative and challenging targets with dermatology applications.

Under the terms of the agreement, X-Chem will utilize its industry-leading DNA-encoded library (DEX™) screening platform and proprietary informatics tools to search for novel hits for Almirall targets. X-Chem's DEX libraries enable the screening of vast areas of drug-like chemical space, and support Almirall's goal of identifying drug-like leads with shorter development timelines. Almirall will assess the biochemical and/or cellular activity, novelty, and in some cases advanced properties of the leads identified under the collaboration. Almirall has the option to license these drug leads, and will be responsible for further development and commercialization of the resulting programs.

Bhushan Hardas, M.D., MBA, Chief Scientific Officer of Almirall, commented, "This agreement takes us one step further in our goal of becoming a leading medical dermatology company. With the cutting edge technology offered by X-Chem and our strong knowledge of the area of dermatology, we will be able to broaden our pipeline and provide further medical solutions for the physicians and patients, specially designed for dermatological diseases with unmet medical needs."

"The treatment of dermatological diseases is an important field of research with unmet medical needs. We are delighted to align with Almirall, a leader in the field, to apply our DEX platform to the discovery of new treatments for patients worldwide," said Rick Wagner, president and CEO of X-Chem.

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, 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 drug-like library design, screening methodologies, and cheminformatics underlie the industry-leading 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 60 programs and over 150 lead series, which include fragments, low molecular weight heterocycles, macrocycles, and irreversible covalent electrophiles, licensed by X-Chem's partners.

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, 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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