



CELL DESIGN LABS ANNOUNCES ISSUANCE OF BROAD PATENT FOR CHIMERIC NOTCH (synNOTCH™) RECEPTOR TO TREAT CANCER AND OTHER DISEASES

-- synNotch™ Technology Enables the Programming of Immune Cells to Fight Disease --

EMERYVILLE, Calif. – June 07, 2017 – Cell Design Labs, Inc. today announced the issuance of U.S. Patent No. 9,670,281, entitled “Binding-triggered transcriptional switches and the methods of use thereof.” This patent, issued to UC San Francisco (UCSF) and exclusively licensed to Cell Design Labs, broadly covers composition of matter for proprietary synNotch™ constructs, cells genetically modified with synNotch receptors and methods for treating diseases.

“Using the synNotch technology, we are rewiring immune cells to create customized cells that can carry out highly specialized actions in the complex environment of the body,” said Brian Atwood, Co-Founder, President and Chief Executive Officer of Cell Design Labs. “In preclinical testing of potential anticancer applications, T cells engineered with synNotch receptors could be programmed to produce and deliver a wide range of therapeutic payloads, including checkpoint inhibitors, bispecific antibodies and custom cytokines, specifically to the tumor site. We believe our synNotch technology will play a major role in developing a new generation of more effective and safer therapeutics for cancer, autoimmune and infectious diseases.”

The synNotch technology was developed in the laboratory of Wendell Lim, PhD, Professor and Chair of the Department of Cellular and Molecular Pharmacology at UCSF and Director of the UCSF Center for Systems and Synthetic Biology.

“Dr. Lim’s lab is working on some of the most compelling and revolutionary science of our era including synNotch,” commented Todd Pazdera, PhD, Assistant Director of UCSF’s Office of Technology Management. “With Cell Design Labs advancing this important innovation, we are eager to see it fulfill its potential to improve the lives of patients battling debilitating diseases.”

About the Notch Receptor and synNotch™ Technology

Notch, a well-characterized receptor, is found in all multicellular organisms. First discovered in 1914, Notch is instrumental in how cells communicate with each other, and has both external and internal functionality. It works by first detecting a molecular partner in a neighboring cell using a part of Notch outside the cell. This interaction then “tugs” on the Notch receptor, linking it with the neighbor cell and allowing the internal portion of Notch to move into the nucleus where it activates various genes.

Both the external and internal portions of the Notch receptor have been re-engineered by Lim’s lab in various combinations to instruct immune cells to detect new molecular partners and to

turn on new genes. By modifying different aspects of the synNotch scaffold, diverse sensing/response behaviors can be achieved.

By expressing synNotch in T cells, it is possible to create a programmable immune cell. When this reprogrammed cell binds to its sole intended target (i.e., a cancer cell), it can trigger one or more specific molecular activities. These may include locally producing anticancer defenses such as a specific chimeric antigen receptor (CARs) or even delivering drugs such as checkpoint inhibitors, inducing a customized cytokine profile to supercharge the immune system, or encouraging T cells to differentiate into specific subtypes to convey long-term protection against cancer recurrence. With this approach, the synNotch receptor conveys extremely versatile sensor functionality to T cells, which are already endowed with the ability to roam throughout the body to find targets.

About Cell Design Labs, Inc.

Cell Design Labs is a biotherapeutics company pioneering breakthrough science to develop disruptive cell-based therapies. Based on innovative research from Dr. Wendell Lim's lab at UC San Francisco, Cell Design Labs leverages the power of the body's immune system to develop smart, living therapies with the capability to treat our most challenging diseases with unprecedented power, precision, safety and durability. Using its proprietary technology platform for custom cell engineering, Cell Design Labs will develop its own portfolio of anticancer therapies as well as create partnerships with leading oncology companies. Initially focused on cancer, including both hematologic and solid tumors, this broad technology may also have applications in other complex diseases such as autoimmune and degenerative disorders. To learn more about Cell Design Labs, please visit our web site at: www.celldesignlabs.com.

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