

Press Release

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DarwinHealth Announces Compound-2-Clinic (C2C) Scientific Collaboration with Celgene to Deploy a Quantitative Systems Biology Discovery Platform to Characterize Celgene Oncology Compounds

New York, NY – (August 29, 2019) – DarwinHealth today announced a multi-year scientific research collaboration with Celgene Corporation (“Celgene”) to use quantitative systems biology-based algorithms, technologies that also underpin NY State CLIA-approved diagnostic tests in oncology, and novel, validated approaches focused on tumor checkpoint-targeted therapy to support Celgene’s clinical development efforts with respect to certain specified compounds.

The research collaboration, the C2C (Compound-2-Clinic) initiative, will deploy DarwinHealth’s proprietary and tumor-subtype-specific compound/tumor-checkpoint matching platform, based on the VIPER, OncoMatch, and OncoTreat algorithms, and its high-throughput drug perturbation and Plate-Seq discovery platform to analyze the effects of certain specified compounds.

“The aim of this exciting collaboration,” explained Professor Andrea Califano, Clyde and Helen Wu Professor and Chair, Department of Systems Biology, Columbia University and DarwinHealth Co-founder, “is to assess, characterize, and prioritize the oncology-relevant bioactivity of certain compounds, by using our algorithmic framework with the goal of identifying their mechanism of action (MOA) against Master Regulator (MR) proteins, comprising the tumor checkpoints of selected tumor subtypes covered by the collaboration.”

As part of the C2C initiative, DarwinHealth will provide a comprehensive readout of the potential clinical value of certain compounds in a cancer tissue-specific context, including its genome-wide mechanism of action and tumor-specific biomarkers of sensitivity and resistance. Through quantitative modeling, the developmental trajectory of potential treatments can be predicted with the objective of allowing for more effective Celgene clinical trial design.

“C2C promises to be one of our most fruitful and foundational scientific collaborations,” noted Gideon Bosker, MD CEO and DarwinHealth co-founder. “Working closely with Celgene’s scientists, our goal is to delineate the full range of tumor subtypes—many of them entirely unanticipated—in which specific Celgene compounds show anti-tumor activity that can be clinically validated. Identifying compound-tumor checkpoint-biomarker alignments is the cornerstone of our technology and, therefore, this collaboration is uniquely suited to exploiting our

capabilities in the cancer drug discovery space.” This collaboration may allow Celgene to quickly mature compounds to clinical human testing and commercial development.

“With quantitative, mechanism-centric methodologies beginning to revolutionize the approach to cancer drug discovery, we are looking forward to collaborating with the team at DarwinHealth,” said Rupert Vessey, President, Research & Early Development for Celgene Corporation. “We believe these mechanism-focused insights, using DarwinHealth’s precision oncology-focused systems biology platforms, may facilitate an increased speed and likelihood of success in bringing the best treatment options to patients with cancer.”

About DarwinHealth

DarwinHealth: Precision Therapeutics for Cancer Medicine is a “frontiers of cancer,” technology-focused company, co-founded by CEO Gideon Bosker, MD, and Professor Andrea Califano, Clyde and Helen Wu Professor of Chemical Systems Biology and Chair, Department of Systems Biology at Columbia University. The company’s technology was developed by the Califano lab over the past 14 years and is exclusively licensed from Columbia University.

DarwinHealth utilizes proprietary, systems biology algorithms to match virtually every cancer patient with the drugs and drug combinations that are most likely to produce a successful treatment outcome. “Conversely, these same algorithms also can prioritize investigational drugs and compound combinations of unknown potential against a full spectrum of human malignancies, as well as novel cancer targets,” explained Dr. Bosker, “which make them invaluable for pharmaceutical companies seeking to both optimize their compound pipelines and discover mechanistically actionable, novel cancer targets and compound-tumor alignments.”

DarwinHealth’s mission statement is to deploy novel technologies rooted in systems biology to improve clinical outcomes of cancer treatment. Its core technology, the VIPER algorithm, can identify tightly-knit modules of master regulator proteins that represent a new class of actionable therapeutic targets in cancer. The methodology is applied along two complementary axes: First, DarwinHealth’s technologies support the systematic identification and validation of druggable targets at a more foundational, deep state of the cancer cell’s regulatory logic so we and our scientific partners can exploit next generation actionability based on fundamental and more universal tumor dependencies and mechanisms. Second, from a drug development and discovery perspective, the same technologies capable of identifying potentially druggable novel targets based on master regulators, and upstream modulators of those targets. This is where the DarwinHealth oncotectural approach, with its emphasis on elucidating and targeting tumor checkpoints, provides its most important solutions and repositioning roadmaps for advancing precision-focused cancer drug discovery and therapeutics.

The proprietary, precision medicine-based methods employed by DarwinHealth are supported by a deep body of scientific literature authored by its scientific leadership, including DarwinHealth CSO, Mariano Alvarez, PhD, who co-developed the company’s critical computational infrastructure. These proprietary strategies leverage the ability to reverse-engineer and analyze the genome-wide regulatory and signaling logic of the cancer cell, by integrating data from *in*

silico, *in vitro*, and *in vivo* assays. This provides a fully integrated drug characterization and discovery platform designed to elucidate, accelerate, and validate precise developmental trajectories for pharmaceutical assets, so their full clinical and commercial potential can be realized. For more information, please visit: www.DarwinHealth.com.