



Certara's Simcyp Division Acquires Modeling and Simulation Platform for Neurodegenerative Diseases from In Silico Biosciences, Inc.

February 25, 2020

Acquisition will spur the development of new drugs to treat complex neurodegenerative conditions, including Alzheimer's and Parkinson's disease

PRINCETON, NJ – Feb 25, 2020 – Certara®, the global model-informed drug development and decision support leader, today reported that it has acquired a range of modeling and simulation technology assets from In Silico Biosciences, Inc. The assets include a platform of multiple integrated quantitative systems pharmacology (QSP) modules of brain physiology and pathology specifically developed for the study of neurodegenerative conditions, including Alzheimer's, Parkinson's and Huntington's disease, which generally lack disease-modifying therapies.

"While scientific understanding of the brain has greatly increased, that knowledge has yet to deliver meaningful advances in pharmacological solutions for most neurodegenerative diseases," said Dr. Piet van der Graaf, senior vice president of QSP at Certara. "We are excited and confident that these newly-acquired assets, along with the appointment of former In Silico Biosciences Chief Scientist Dr. Hugo Geerts as leader of Certara's neuroscience team, will enable us to overcome the scientific challenges in this important therapeutic area and help bring efficacious therapies to patients."

"Neurodegenerative disorders involve dysregulation in multiple biochemical pathways, so successful therapies must address all those pathways, focusing on different targets in the brain," added Dr. Geerts, now head of QSP, neuroscience at Certara. "QSP is a transformative technology that combines computational and experimental methods to elucidate, validate and apply new pharmacological concepts to determine the mechanisms of action of new and existing drugs in preclinical and animal models and in patients. It is the right technology at the right time for neurodegenerative disease drug development."

Certara's Simcyp division is the undisputed leader in mechanistic modeling for QSP. Three years ago, it established a unique consortium with seven tier one pharma companies focused on using QSP to understand immunogenicity. A year later, it launched a second QSP consortium with another cohort of seven tier one pharma companies, focused on immuno-oncology. The company's QSP business model is based on its highly successful Simcyp Physiologically-based Pharmacokinetic (PBPK) Consortium, which is comprised of 37 leading biopharm companies and recently celebrated its 20-year anniversary and its enormous positive impact on drug development.

Newly-acquired Capabilities

The new neurodegenerative disease models are based on mechanisms of action and connect pharmacological target modulation with changes in membrane and synaptic currents, which are ultimately linked to biophysical neuronal networks. Simulation of the neuronal circuits produces firing patterns, and the transformed outputs are calibrated with drug effects on clinically meaningful biomarkers. Examples of modules in the platform that have been developed over many years and validated with clinical data are QSP models of amyloid/tau aggregation, cortical working memory, cortical-subcortical cross-talk and pharmaco-EEG.

Dr. Geerts will lead a new Certara QSP consortium that is being formed in 2020, focused on neurodegenerative diseases. The consortium's work will build upon the seminal paper entitled, "*Quantitative Systems Pharmacology for Neuroscience Drug Discovery and Development: Current Status, Opportunities, and Challenges*¹," which Dr. Geerts co-authored last year with Certara and a broad group of stakeholders from the National Institute of Neurological Disorders and Stroke, National Institute on Aging, National Institute of Mental Health, National Institute on Drug Abuse, National Center for Advancing Translational Sciences, FDA Center for Drug Evaluation and Research, and leading academics and pharmaceutical partners. The new consortium will also build upon Certara's current QSP platforms in immunology to address neuro-immune disorders, which are illnesses that are the result of deregulation of both the immune and nervous systems.

Reference

1. "Quantitative Systems Pharmacology for Neuroscience Drug Discovery and Development: Current Status, Opportunities, and Challenges," CPT Pharmacometrics Syst. Pharmacol. (2020) Jan;9(1):5-20. doi: 10.1002/psp4.12478.

About Certara

Certara optimizes R&D productivity, commercial value and patient outcomes through its unique portfolio of model-informed drug development, regulatory science, and market access solutions. In fact, 90+% of all novel drugs approved by the US FDA in the past six years were supported by Certara software or services. Its clients include 1,600 global biopharmaceutical companies, leading academic institutions, and key regulatory agencies across 60 countries. For more information, visit www.certara.com.

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