Yumanity Therapeutics Announces Publication of Paper in *Cell Reports* Detailing a Potential New Therapeutic Target for the Treatment of Parkinson's Disease

Results suggest inhibiting fatty acid desaturation by blocking the enzyme stearoyl-CoA desaturase (SCD) is a potential therapeutic approach to treating neurodegenerative diseases

Findings demonstrate ability of company's proprietary discovery engine to generate previously unexplored therapeutic targets for difficult-to-treat neurodegenerative disorders

CAMBRIDGE, Mass. – December 4, 2018 – Yumanity Therapeutics, a company focused on discovering transformative therapies to treat neurodegenerative diseases, today announced the publication of study results describing a potential new target for therapeutic intervention in Parkinson's disease and other related disorders. The results were published in the peer-reviewed scientific journal *Cell Reports.* The publication, titled "Inhibiting Stearoyl-CoA Desaturase Ameliorates a-Synuclein Cytotoxicity," can be accessed at www.cell.com/cell-reports/fulltext/S2211-1247(18)31774-1.

Using Yumanity Therapeutics' discovery engine, which can identify small molecules that protect cells from degeneration caused by misfolding and accumulation of human disease proteins, the researchers identified a series of compounds that shielded cells against alpha-synuclein-induced toxicity by inhibiting the enzyme stearoyl-CoA desaturase (SCD). Reducing levels of unsaturated membrane lipids by inhibiting SCD in human neurons protected the cells from alpha-synuclein toxicity and enhanced their survival. These findings suggest that inhibition of fatty acid desaturation could be a potential therapeutic approach for treating Parkinson's disease and other synuclein-based disorders.

While the biology of SCD has been previously recognized in the context of other disease conditions, this paper establishes a connection between the enzyme and neurodegenerative diseases. Additionally, the revelation of SCD as a potential target in neurodegenerative diseases speaks to the power and promise of Yumanity Therapeutics' discovery engine to uncover multiple, attractive therapeutic targets for neurodegenerative diseases, which sorely need new therapies that do more than alleviate symptoms of these disorders.

SCD represents the first therapeutic target from Yumanity Therapeutics' discovery engine to be publicly disclosed. Based, in part, on the research disclosed in this paper, Yumanity Therapeutics anticipates it will initiate first-in-human trials of its most advanced experimental therapy, YTX-7739, for the treatment of Parkinson's disease in the fourth quarter of 2019.

"The lack of effective new disease-modifying treatments for these disorders stems largely from a scarcity of novel drug targets, and a poor understanding of disease biology," said Ken Rhodes, Ph.D., senior author of the paper and chief scientific officer of Yumanity Therapeutics. "As the global population gets older and age-related neurodegenerative disorders increase in prevalence, there is a critical need for therapies that slow disease progression and change the course of treatment outcomes. These new findings are important because they pinpoint a novel mechanism underlying alpha-synuclein toxicity and offer a potential new therapeutic approach to treating Parkinson's disease through the inhibition of SCD activity. Moreover, these new data validate the potential of the company's discovery engine to uncover novel and druggable therapeutic targets for the treatment of neurodegenerative diseases."

About Parkinson's Disease

Parkinson's disease is a progressive neurological disorder that affects the central nervous system and impacts both motor and non-motor functions. It is one of the most common age-related neurodegenerative diseases, affecting an estimated 0.5 to 1 percent of people 65 to 69 years of age, rising to 1 to 3 percent of the population over the age of 80.[1] Symptom severity and disease progression differ between individuals, but typically include slowness of movement (bradykinesia), trembling in the extremities (tremors), stiffness (rigidity), cognitive or behavioral abnormalities, sleep disturbances, and sensory dysfunction.[2] There is no laboratory or blood test for Parkinson's disease, so diagnosis is made

based on clinical observation.[3] Currently, there is no cure and available treatments only address the symptoms of Parkinson's disease, not the underlying causes.

About Neurodegenerative Diseases
Worldwide, an estimated 60 million people suffer from neurodegenerative diseases, which affect the brain and central nervous system (CNS), and this number is expected to double every 20 years. These diseases, which include Alzheimer's disease, Parkinson's disease and amyotrophic lateral sclerosis (ALS), represent one of the largest global healthcare challenges and greatest medical needs due to their devastating personal and economic consequences for patients, caregivers and society. Currently, there are no approved disease-modifying therapies or cures available.

About Yumanity Therapeutics
Yumanity Therapeutics is transforming drug discovery for neurodegenerative diseases caused by protein misfolding. Formed in 2014 by renowned biotech industry leader, Tony Coles, M.D., and protein folding science pioneer, Susan Lindquist, Ph.D., the company is focused on discovering disease-modifying therapies for patients with Alzheimer's disease, Parkinson's disease and amyotrophic lateral sclerosis (ALS). Leveraging its discovery engine, Yumanity Therapeutics' innovative new approach to drug discovery and development concentrates on reversing the cellular phenotypes and disease pathologies caused by protein misfolding. For more information, please visit yumanity.com.

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