



Emerald Health Pharmaceuticals' Cannabinoid-Derived Drug Candidate, EHP-102, Shows Potential Disease-Modifying Activity in Huntington's Disease Models

***Translational Neurodegeneration* publication shows EHP-102 promotes neurogenesis and protects against neuroinflammation and neurodegeneration**

SAN DIEGO, CA, March 21, 2019 – Emerald Health Pharmaceuticals Inc. (EHP), a clinical-stage company developing medicines based on cannabinoid science, announced today that newly published scientific data support the potential of EHP's oral drug candidate, EHP-102, to be disease-modifying for Huntington's disease (HD). EHP-102 exhibited potent neurogenesis (regeneration of nerve cells) and protected against neurodegeneration in a murine model of HD.

VCE-003.2, the active pharmaceutical ingredient (API) in EHP-102, is a patented synthetic derivative of cannabigerol (CBG), one of the non-psychoactive molecules in cannabis, modified to enhance the activation of specific receptors and physiologic pathways associated with neuroinflammation and neurogenesis.

The data were reported in *Translational Neurodegeneration* in a publication titled, "Oral Administration of the Cannabigerol Derivative VCE-003.2 Promotes Subventricular Zone Neurogenesis and Protects Against Mutant Huntingtin-Induced Neurodegeneration." This research was led by Ismael Galve-Roperh, PhD (University Complutense of Madrid, Spain) and the publication is co-authored by Prof. Eduardo Muñoz, MD, PhD (Chief Scientific Officer) as well as other senior scientists from EHP.

"Huntington's disease causes devastating physical and psychological symptoms that get progressively worse in the years between diagnosis and death," said Jim DeMesa, MD, CEO of Emerald Health Pharmaceuticals. "There is currently no cure for HD but, based on the results of the studies conducted by our scientific team and collaborators, there may be hope for these patients in the future."

"Our cannabinoid derivative was designed for its multi-modal mechanism of action," said Eduardo Muñoz, MD, PhD, EHP's Chief Scientific Officer and Professor of Immunology at the University of Córdoba. "These results are relevant in the search for novel therapeutic strategies to stop or delay the progression of Huntington's disease by reducing nerve cell damage and promoting regeneration. These data suggest that EHP-102 could achieve disease-modification rather than only symptomatic relief."

In the publication, EHP-102, an oral formulation of VCE-003.2, is shown to improve subventricular zone (SVZ)-derived neuroregeneration in a murine model of Huntington's disease induced by bilateral intrastriatal injection of an adeno-associated virus (AAV) expressing pathogenic huntingtin protein repeats. In this model, the mutant huntingtin protein induces neurodegeneration and neuroinflammation and impairs motor coordination, which were all prevented by EHP-102.

Moreover, EHP-102 also prevented neuroinflammation and neurodegeneration in a second model of murine HD induced by the toxin 3-nitropropionic acid. The article also shows preliminary data supporting that this drug candidate has good oral bioavailability, and does not appear in vitro to be mutagenic, cardiotoxic, or to interfere with cytochrome P450 activity.

About Huntington's Disease and EHP-102

Huntington's disease is a genetic disorder that causes progressive degeneration of nerve cells in the brain. It is a devastating and disabling disease that affects middle-aged people, with typical onset between the ages of 30 and 50. There are approximately 30,000 people in the U.S. with symptomatic HD and 200,000 are at-risk of inheriting the faulty gene that causes HD. There is a 50% chance that the disease will be passed to an offspring. One of the characteristic signs and symptoms of HD is involuntary (choreaform) movements. Additional symptoms include difficulty swallowing, slurred speech and choking. As the disease progresses, activities of daily living become extremely difficult, which include getting out of bed, walking, taking a shower, dressing, using the restroom, cleaning, cooking, and eating. The severity of symptoms increases with time. Cognitive symptoms include feelings of low self-esteem, guilt, anxiety, apathy, irritability, aggression, dementia and psychosis with paranoia and auditory hallucinations. The cause of death is usually from secondary causes of the disease such as choking and infection. There is no curative treatment for HD. Treatment is mostly directed at symptomatic relief with attempts to suppress the movement disorders.

EHP is currently developing two drug candidates from its portfolio of cannabinoid derivatives, one derived from CBD for multiple sclerosis and systemic scleroderma (EHP-101) and one derived from CBG, EHP-102, for Huntington's disease and Parkinson's disease.

EHP has received Orphan Drug Designation for EHP-102 in HD from the FDA and for EHP-101 in systemic scleroderma from the FDA and EMA.

EHP is planning to advance manufacturing and formulation work on EHP-102 in 2019 in preparation for initiating the non-clinical studies required to advance to clinical development. EHP is also conducting a Phase I human study with EHP-101 to support its development for multiple sclerosis and systemic scleroderma, with initiation of Phase II studies expected by the end of 2019.

About Emerald Health Pharmaceuticals Inc.

Emerald Health Pharmaceuticals is developing product candidates derived from cannabinoids for the treatment of CNS, autoimmune, and other diseases. The Company has two families of new chemical entities, derived from synthetic cannabidiol (CBD) and cannabigerol (CBG), that it has modified through rational drug design to affect validated receptors and pathways pertinent to targeted diseases. Its first drug candidate, EHP-101, is in Phase I clinical development and is focused on treating multiple sclerosis and systemic scleroderma. Its second, EHP-102, is in preclinical development and is focused on treating Huntington's disease and Parkinson's disease.

Emerald Health Pharmaceuticals is part of the [Emerald Group](#), which comprises multiple companies focused on developing pharmaceutical, botanical, and nutraceutical products providing wellness and medical benefits by interacting with the human body's endocannabinoid system.

For more information, visit <http://www.emeraldpharma.life> or contact: info@emeraldpharma.life.

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To the extent statements contained in this news release are not descriptions of historical facts regarding Emerald Health Pharmaceuticals Inc. they should be considered "forward-looking statements," as described in the private securities litigation reform act of 1995, that reflect management's current beliefs and expectations. You can identify forward-looking statements by words such as "anticipate," "believe," "could," "estimate," "expect," "forecast," "goal," "hope," "hypothesis," "intend," "may," "plan," "potential," "predict," "project," "should," "strategy," "will," "would," or the negative of those terms, and similar expressions that convey uncertainty of future events or outcomes. Forward-looking statements contained in this news release include, but are not limited to, statements regarding: (i) the success and timing of our product development activities and clinical trials; (ii) our ability to develop our product candidates; (iii) our plans to research, discover, evaluate and develop additional potential product, technology and business candidates and opportunities; (iv) the anticipated timing of clinical data availability; (v) our ability to meet our milestones; and (vi) our expectations regarding our ability to obtain and maintain intellectual property protection. Forward-looking statements are subject to known and unknown factors, risks and uncertainties that may cause actual results to differ materially from those expressed or implied by such forward-looking statements. Undue reliance should not be placed on forward-looking statements. We undertake no obligation to update any forward-looking statements. Emerald Health Pharmaceuticals' investigational drug products have not been approved or cleared by the FDA.