



## **Emerald Health Pharmaceuticals' Scientific Team Publishes Evidence of Neuroprotection Using Patented Cannabinoid Derivative for Parkinson's Disease**

**Study published in *Journal of Neuroinflammation* indicates the potential of EHP-102, a new molecular entity derived from cannabigerol, to provide anti-inflammatory and neuroprotective properties**

SAN DIEGO, CA, February 6, 2018 – Emerald Health Pharmaceuticals Inc. (EHP), which is developing medicines based on cannabinoid science, announced today that key members of its scientific team demonstrated the potential of EHP-102 (previously known as VCE-003.2), a patented aminoquinone derivative of the non-psychoactive phytocannabinoid called cannabigerol (CBG), to treat Parkinson's disease. This research was done in collaboration with Professor Javier Fernandez-Ruiz (University Complutense of Madrid, Spain).

These results were published in the *Journal of Neuroinflammation* in a scientific [paper](#) entitled, "Benefits of VCE-003.2, a cannabigerol quinone derivative, against inflammation driven neuronal deterioration in experimental Parkinson's disease: possible involvement of different binding sites at the PPAR $\gamma$  receptor." Co-authors of this paper included Eduardo Muñoz, MD, PhD, EHP's Chief Scientific Officer and Mari-Luz Bellido, PhD, EHP's Vice President of European Operations.

Researchers evaluated the anti-inflammatory and neuroprotective properties of EHP-102 in two animal models of Parkinson's disease as well as in vitro cellular models. Findings showed that EHP-102 is neuroprotective against inflammation-driven neuronal damage in these models. EHP-102 is a peroxisome proliferator-activated receptor- $\gamma$  (PPAR $\gamma$ ) modulator acting on both the canonical and alternative binding sites. These data demonstrate that EHP-102 could potentially be used as a neuroprotective agent in Parkinson's disease due to its multi-target properties specific to the disease.

"More than 10 million people worldwide are living with Parkinson's disease<sup>1</sup> and many do not have access to effective therapies to treat symptoms of the disease," said Eduardo Muñoz, PhD, EHP's Chief Scientific Officer and Professor of Immunology at the University of Córdoba. "We believe these findings will help advance preclinical studies and clinical trials of cannabinoid-derived medicines and add to the experimental evidence that shows this pharmaceutical agent may preserve neuronal integrity in Parkinson's disease."

"We congratulate Drs. Muñoz and Bellido for their publication in a prominent scientific journal," said Jim DeMesa, MD, CEO of Emerald Health Pharmaceuticals. "These outstanding scientists have been pioneers in cannabinoid science for over fifteen years and we are proud to be working closely with them as we develop our two novel cannabinoid drugs targeting life-threatening neurodegenerative and auto-immune diseases."

The EHP scientific team has previously shown that many of its patented cannabidiol (CBD) and CBG derivatives are dual PPAR $\gamma$  and cannabinoid receptor type 2 (CB $_2$ ) ligand activators that also affect other disease modifying targets. EHP is currently developing two drug candidates from its portfolio of cannabinoid analogs, one derived from CBD for multiple sclerosis and scleroderma (EHP-101), and one derived from CBG for Huntington's disease and Parkinson's disease (EHP-102). Additional data were previously

published in two papers in the journal *Scientific Reports*, a *Nature* publication. EHP plans to initiate a Phase 1 human clinical study in 2018 on its lead product candidate, EHP-101.

### **About Emerald Health Pharmaceuticals Inc.**

Emerald Health Pharmaceuticals is developing its library of proprietary, synthetic cannabinoid-derivative drug candidates for the treatment of inflammatory, neurodegenerative, autoimmune, fibrotic, and metabolic diseases. The company has two families of new chemical entities, based on CBD and CBG, that it has modified through rational drug design to affect validated receptors pertinent to targeted diseases. Its first drug candidate, EHP-101, is focused on treating multiple sclerosis and scleroderma. Its second, EHP-102, is focused on treating Huntington's disease and Parkinson's disease. The company is advancing preclinical development with the intent to launch a Phase I clinical study in 2018. For more information, visit [www.emeraldpharma.life](http://www.emeraldpharma.life). Emerald Health Pharmaceuticals is part of the Emerald Health group, which comprises multiple companies advancing diverse botanical, nutraceutical and pharmaceutical products that may provide wellness and medical benefits by interacting with the body's important endocannabinoid system.

For more information, please contact: [info@emeraldpharma.life](mailto: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 these presentations 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 candidates and opportunities; (iv) our ability to develop and manufacture our product candidates and to improve the manufacturing process; (v) our ability to attract and retain key scientific or management personnel; (vi) the anticipated timing of clinical data availability; (vii) our ability to meet our milestones and (ix) 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.*

#### **Sources**

1. Parkinson's Foundation. Statistics. <http://parkinson.org/Understanding-Parkinsons/Causes-and-Statistics/Statistics>. Accessed January 18, 2018.