

PharmaDrug Forms Research Collaboration with Terasaki Institute for Novel Ocular Drug Formulation Program to Deliver DMT and Other Tryptamines to Treat Eye Disease

- *Unlocking the potential of psychedelics, including DMT, and other tryptamines to treat the significant unmet medical needs of glaucoma patients*
- *Partnering with world-renowned research institution brings validated drug delivery expertise in novel, controlled drug-release technologies*

Toronto, Ontario--(Newsfile Corp. - August 5, 2021) - PharmaDrug Inc. (CSE: PHRX) (OTC Pink: LMLLF) ("**PharmaDrug**" or the "**Company**"), a specialty pharmaceutical company focused on the research, development and commercialization of controlled-substances and natural medicines such as psychedelics, cannabis and naturally-derived approved drugs, is pleased to announce that PharmaDrug has entered into a sponsored research agreement with the Terasaki Institute to develop a novel ocular drug delivery platform that aims to deliver psychedelic and tryptamine-based pharmaceuticals, such as N, N-dimethyltryptamine ("DMT"), for eye diseases.

PharmaDrug will focus on developing a novel ocular drug delivery platform to deliver DMT and other undisclosed tryptamines as a potential therapeutic solution in treating the significant unmet medical needs of glaucoma patients. Glaucoma is a disorder of the optic nerve that results in irreversible vision loss and is the second leading cause of blindness in the world, according to the World Health Organization. Glaucoma impacts more than 2.7 million people aged 40 or older in the United States and current treatments are known to have poor rates of compliance of up to 80% of patients. The global market for glaucoma was estimated by Market Scope at \$4.8 billion in 2019 with the U.S. market representing \$1.9 billion.

Although the exact etiology of primary open angle glaucoma remains poorly understood, and may be variable across patient subsets, it is generally accepted that the observed increase in intraocular pressure (IOP) correlates with progressive vision loss¹. As such, currently available glaucoma treatments, most commonly formulated into eye drops, are designed to lower IOP. While these approaches provide partial improvement, they often result in side effects such as redness and stinging and require multiple daily applications; all of which diminish patient compliance.

Key regions of the eye that regulate fluid dynamics, including maintenance of healthy IOP, are known to be richly decorated with various serotonin receptor family members. Previous research has highlighted the role of serotonin receptor signaling in the regulation of IOP²⁻⁵. Tryptamines, often hallucinogenic above certain threshold concentrations, constitute a large collection of molecules that selectively act on multiple different serotonin receptors including 5-HT1A and 5-HT2A. Topical application of several different tryptamines have shown early promise in preclinical models of elevated IOP, however formulation, delivery, the potential for undesirable hallucinogenic side effects, and the controlled substances act of 1970 have all contributed to a lack of development of tryptamines to treat this serious threat to vision. PharmaDrug, working with the renowned Terasaki Research Institute, has entered into a sponsored research agreement that will evaluate multiple candidate tryptamines, including DMT in various preclinical models of glaucoma. Studies will include cell-based basic research, active pharmaceutical ingredient formulation, and exploitation of novel delivery technologies aimed at improving patient outcome by delivering the optimal drug in a convenient format that improves compliance and diminishes side effects.

The Terasaki Institute for Biomedical Innovation is a biotechnology institute which develops medical devices and cutting-edge protocols for a variety of diagnostic, monitoring and treatment applications.

Their research platforms include work in biomaterials, cellular and tissue engineering, wearable biosensors and organs-on-a-chip, with specific expertise in novel polymer development.

"We are very excited to partner with the Terasaki Institute, a leader in the design and development of novel drug delivery technologies. This relationship will expedite our development plan and move us meaningfully closer to our goal of evaluating DMT and other tryptamines for various types of eye disease which require both a pharmacological and delivery solution to fill the significant treatment gap in glaucoma," said Daniel Cohen, Chairman and CEO of PharmaDrug. "By aligning ourselves with thought leaders in the space we aim to tackle the worthy challenge of developing a novel delivery device that will provide sub-psychedelic quantities of candidate tryptamines to the front of the eye."

Dr. Ali Khademhosseini, CEO of the Terasaki Institute commented: "At the Terasaki Institute we have a number of core competences in developing next generation medical technologies such as polymer-based formulations and wearables for drug delivery purposes. We have partnered with various pharmaceutical and biotechnology companies seeking to evolve their product offerings in treating significant unmet medical needs. PharmaDrug's unique proposed solution to the challenges that are present in eye diseases is what motivates the Terasaki team to answer the call in developing a drug delivery system that would positively affect the millions of people who suffer with impaired vision and compromised quality of life. We are excited to be working with PharmaDrug and be a part of their journey in their quest to develop therapeutic solutions for eye disease."

About PharmaDrug Inc.

PharmaDrug is a specialty pharmaceutical company focused on the research, development and commercialization of controlled-substances and natural medicines such as psychedelics, cannabis and naturally-derived approved drugs. The Company owns 80% of Pharmadrug Production GmbH, a German medical cannabis distributor, with a Schedule I European Union narcotics license and German EuGMP certification allowing for the importation and distribution of medical cannabis to pharmacies in Germany and throughout the EU. The Company also owns 100% of Super Smart, a Dutch company building a modern adult use psychedelic retail business with an elevated and educational focus. PharmaDrug recently acquired Sairiyo Therapeutics, a biotech company that specializes in researching and reformulating established natural medicines with a goal of bringing them through regulatory and research driven clinical trials.

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A description of additional risk factors that may cause actual results to differ materially from forward-looking information can be found in the Company's disclosure documents on the SEDAR website at www.sedar.com. Although the Company has attempted to identify important factors that could cause actual results to differ materially from those contained in forward-looking information, there may be other factors that cause results not to be as anticipated, estimated or intended. Accordingly, readers should not place undue reliance on forward-looking information. Readers are cautioned that the foregoing list of factors is not exhaustive. Readers are further cautioned not to place undue reliance on forward-looking information as there can be no assurance that the plans, intentions or expectations upon which they are placed will occur. Such information, although considered reasonable by management at the time of preparation, may prove to be incorrect and actual results may differ materially from those anticipated.

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