December 1, 2020

Lexaria's Patented Technology Significantly Enhances Oral Delivery of Antiviral Drugs

Demonstrates Improved Delivery of Two Classes of Drugs in Use Against HIV/AIDS and under investigation Against SARS-CoV-2/COVID-19

KELOWNA, BC / ACCESSWIRE / December 1, 2020/ Lexaria Bioscience Corp. (OTCQX:LXRP)(CSE:LXX) (the "Company" or "Lexaria"), a global innovator in drug delivery platforms, today announces that its DehydraTECH^{TM} technology significantly improved delivery in study animals of representative drugs from two classes of antiviral therapies (a Protease Inhibitor and a Reverse Transcriptase Inhibitor) under investigation against SARS-CoV-2/COVID-19 and already in use against HIV/AIDS. These are the first two of a series of antiviral drugs to be tested using Lexaria's DehydraTECH technology.

Drug	**Drug Class**	**AUClast* Delivery & Improvement** (hr·ng/mL)	**Control** (hr·ng/mL)	**AUC∞** Delivery & Improvement** (hr·ng/mL)	**Control** (hr·ng/mL)
Darunavir	Protease Inhibitor	721 ± 332 **54%** (p=0.036)	469 ± 252	726 ± 211 **35%** (p=0.062)	536 ± 223
Efavirenz	Non-nucleoside Reverse Transcriptase Inhibitor	752 ± 203 **16%** (p=0.11)	650 ± 148	1072 ±40 **42%** (p=0.028)	757 ±103

Improved Delivery of Both Protease Inhibitor and Reverse Transcriptase Inhibitor Drugs Exhibited Improved Bioavailability Rate as High as 54%

"We are very pleased to have demonstrated improvements in DehydraTECH's delivery of antiviral drugs in animal bloodstream in our very first attempt to do so," said Chris Bunka,

Chief Executive Officer of Lexaria. "DehydraTECH is a powerful technology that has now been shown effective through animal testing with antiviral drugs, nicotine, and cannabinoids, demonstrating its versatility to enhance delivery of lipophilic drugs to the bloodstream."

All animals demonstrated excellent safety and tolerability upon dosing with the DehydraTECH formulations, displaying normal activity and behaviour throughout the study with no adverse effects. Lexaria plans to conduct expanded investigations into antiviral drug delivery enhancement and effectiveness beginning in January 2021. These plans include additional antiviral drugs that have already demonstrated usefulness in the fight against HIV/AIDS and are being investigated for use against COVID-19.

This pilot study included DehydraTECH-formulated drugs administered via oral gavage to male Sprague-Dawley rats compared to concentration-matched controls of the same drugs without DehydraTECH formulation. The study was conducted in a total of 40 rats, broken down into four groups of 10 rats per test article. The drugs evaluated were a protease inhibitor (darunavir), and a non-nucleoside reverse transcriptase inhibitor (efavirenz); each administered to the rats in a single dose of 10 mg/Kg in either the DehydraTECH formulation or the control formulation under fed study conditions. The study evaluated total drug delivery into the rodent bloodstream (i.e., Area Under the Curve or "AUC"), whereby the rats were evaluated over a period of 24 hours post dosing to derive the measured AUC over the period (i.e., "AUClast"*), as well as the extrapolated theoretical maximum AUC expected to be achieved thereafter (i.e., "AUC∞"**).

The study's positive outcomes may have relevance both for the original antiviral therapeutic indications of the drugs that were studied as well as for additional antiviral drugs within their classes for indications including COVID-19. Drugs like darunavir and efavirenz are mainly used for treatment of HIV/AIDS, although their bioavailability alone in oral form is low at 37% and 45%, respectively. If confirmed through additional expanded testing, DehydraTECH could, in theory, improve this bioavailability rate to as high as 64% (i.e., darunavir 37% x 154% = 57%; or efavirenz 45% x 142% = 64%) which could greatly enhance outcomes thus warranting continued investigation.

Furthermore, other types of reverse transcriptase inhibitors like the nucleotide variant remdesivir have already been approved in some jurisdictions for treatment of patients with COVID-19, albeit presently limited to injectable administration due to poor oral bioavailability. Researchers worldwide are also actively evaluating various protease inhibitors that specifically target the main protease associated with SARS-CoV-2 infection in pursuit of additional COVID-19 therapeutic options. If DehydraTECH demonstrates effectiveness in enhancing oral deliverability for compounds in these subclassifications of protease and reverse transcriptase inhibitors, it may hold promise for COVID-19 applicability as well, also warranting further investigation.

About Darunavir
Darunavir is an antiretroviral medication that was approved by the FDA for use in the US in 2008 and in the EU in 2007 and is on the World Health Organization's ("WHO") list of essential medicines. It is primarily used to treat HIV/AIDS and is commonly used with cobicistat or ritonavir and is usually dosed by pill or capsule. Darunavir is a nonpeptidic inhibitor of protease (PR) effected through a number of hydrogen bonds. Protease Inhibitors include many subgroups of molecules that inhibit the breakdown of protein enzymes (proteases).

About Efavirenz
Efavirenz is also an antiretroviral medication approved for use in the US and the EU in 1998 and 1999, respectively, and is now available in generic format. It is also on the WHO list of essential medicines and is most commonly used to treat/prevent HIV/AIDS. Efavirenz is a non-nucleoside reverse transcriptase inhibitor that inhibits activity of reverse transcriptase, which is otherwise required for viruses such as HIV to replicate.

Chris Bunka, CEO, is responsible for the accuracy of this news. The Company is not making any express or implied claims that its products have the ability to eliminate, cure or contain the Covid-19 pandemic (or SARS-CoV-2 or novel Coronavirus) or any other virally induced diseases at this time.

About Lexaria
Lexaria Bioscience Corp.'s (OTCQX:LXRP)(CSE:LXX) proprietary drug delivery technology, DehydraTECH™, improves the way active pharmaceutical ingredients (APIs) enter the bloodstream by promoting healthier oral ingestion methods and increasing the effectiveness of fat-soluble active molecules, thereby lowering overall dosing. The Company's technology can be applied to many different ingestible product formats, including foods, beverages, oral suspensions, tablets, and capsules. DehydraTECH has repeatedly demonstrated since 2016 with cannabinoids and nicotine the ability to increase bio-absorption by up to 5-10x, reduce time of onset from 1 - 2 hours to minutes, and mask unwanted tastes; and is planned to be further evaluated for orally administered bioactive molecules, including anti-virals, cannabinoids, vitamins, non-steroidal anti-inflammatory drugs (NSAIDs), and nicotine. Lexaria has licensed DehydraTECH to multiple companies including a world-leading tobacco producer for the development of smokeless, oral-based nicotine products and for use in industries that produce cannabinoid beverages, edibles, and oral products. Lexaria operates a licensed in-house research laboratory and holds a robust intellectual property portfolio with 18 patents granted and approximately 60 patents pending worldwide. For more information, please visit www.lexariabioscience.com.

INVESTOR CONTACT:
ir@lexariabioscience.com
Phone: 866-221-3341

FORWARD-LOOKING STATEMENTS
This press release includes forward-looking statements. Statements as such term is defined under applicable securities laws. These statements may be identified by words such as "anticipate," "if," "believe," "plan," "estimate," "expect," "intend," "may," "could," "should," "will," and other similar expressions. Such forward-looking statements in this press release include, but are not limited to, statements by the company relating the Company's ability to carry out the antiviral research initiatives, receive regulatory approvals or experience positive effects from any antiviral research or study. Such forward-looking statements are estimates reflecting the Company's best judgment based upon current information and involve a number of risks and uncertainties, and there can be no assurance that the Company will actually achieve the plans, intentions, or expectations disclosed in these forward-looking statements. As such, you should not place undue reliance on these forward-looking statements. Factors which could cause actual results to differ materially from those estimated by the Company include, but are not limited to, government regulation and regulatory approvals, managing and maintaining growth, the effect of adverse publicity,

litigation, competition, scientific discovery, the patent application and approval process, potential adverse effects arising from the testing or use of products utilizing the DehydraTECH technology, the Company's ability to maintain existing collaborations and realize the benefits thereof, and other factors which may be identified from time to time in the Company's public announcements and periodic filings with the US Securities and Exchange Commission on EDGAR. There is no assurance that existing capital is sufficient for the Company's needs or that it will be able to raise additional capital. There is no assurance the Company will be capable of developing, marketing, licensing, or selling products containing any active ingredient. There is no assurance that any planned corporate activity, scientific research or study, business venture, letter of intent, technology licensing pursuit, patent application or allowance, consumer study, or any initiative will be pursued, or if pursued, will be successful. There is no assurance that any of Lexaria's postulated uses, benefits, or advantages for the patented and patent-pending technology will in fact be realized in any manner or in any part. No statement herein has been evaluated by the Food and Drug Administration (FDA). Lexaria-associated products are not intended to diagnose, treat, cure or prevent any disease.

Any forward-looking statements contained in this release speak only as of the date hereof, and the Company expressly disclaims any obligation to update any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise, except as otherwise required by law.

The CSE has not reviewed and does not accept responsibility for the adequacy or accuracy of this release.

SOURCE: Lexaria Bioscience Corp.

View source version on accesswire.com:
https://www.accesswire.com/618876/Lexarias-Patented-Technology-Significantly-Enhances-Oral-Delivery-of-Antiviral-Drugs