

August 31, 2020



XORTX Files U.S. FDA Pre-IND Meeting Request for XR_x-101 (Oxypurinol) COVID-19 Program and Pre-IND Meeting Submission

Potential of Acute Kidney Injury Emerging as a Serious Consequence of COVID-19

CALGARY, Alberta, Aug. 31, 2020 (GLOBE NEWSWIRE) -- XORTX Therapeutics Inc. (CSE : XRX) (OTCQB : XRTXF) (FRANKFURT : ANU1) (the “**Company**” or “**XORTX**”) a late clinical stage pharmaceutical development company focused on kidney disease, is pleased to announce that the Company has filed its pre-IND (Investigational New Drug) meeting request with the U.S. FDA. This filing initiates formal communications with the U.S. FDA regarding development of the Company’s proprietary formulation of XR_x-101 (Oxypurinol) for the treatment and prevention of acute kidney injury (AKI) associated with COVID-19 coronavirus infection. The request for a pre-IND meeting was accompanied by the complete pre-IND briefing document.

The application includes discussion of the clinical development plan and requests for guidance regarding the novel proprietary formulation of Oxypurinol specifically designed to treat individuals at risk of AKI associated with COVID-19 coronavirus infection.

This application with the U.S. FDA, opens discussions regarding the critical path plan to bring XR_x-101 to patients with COVID-19. The pre-IND package presents current data showing that:

1. COVID-19 is frequently accompanied by pneumonia, acute kidney injury, proteinuria, and hematuria^{1,2} which can lead to multiple organ failure and death.
2. Though early reports suggested a low incidence (between 3% to 9%) of AKI in those with COVID-19 infection^{2,3,4}, data from the U.S. indicates that 25-35% of patients hospitalized with COVID-19 develop AKI.⁵⁻⁷
3. Up to 20% of those need renal replacement therapy (RRT), and the mortality rate in patients that experience AKI in the setting of COVID-19 is several-fold higher than patients without AKI.⁶
4. AKI has been identified as an independent risk factor for patients’ in-hospital mortality due to COVID-19².

5. In a study of hospitalized patients with AKI, a hypercatabolic phenotype in a significant proportion of patients with AKI, manifested by extremely high serum uric acid levels⁸.

“This submission is an important step for the Company and the XR_x-101 program and we move forward with a strong belief, verified by human data, that XR_x-101 (Oxypurinol) may be an effective treatment for acute kidney injury that accompanies coronavirus (COVID-19),” stated Dr. Allen Davidoff, CEO of XORTX Therapeutics, who added, “The focus and dedication of the XORTX team and our clinical development partners made the rapid development of this pre-IND package and meeting request possible. We will provide updates regarding discussions with the U.S. FDA.”

Currently, the US has accounted for nearly 6 million COVID-19 infections, with an estimated 330,000 hospitalizations, close to 180,000 deaths, 65,000 individuals that are now permanently on dialysis, and nearly 44% (~80,000) of those released from hospital have ongoing acute kidney injury. In the absence of a viable vaccine, during the next 12 months these numbers could grow two to three-fold, and could give rise to a kidney disease crisis with substantial future socio-economic cost. A therapy to decrease the risk of acute kidney injury due to COVID-19 infection would address the rapidly growing medical need.

The Company is not making any express or implied claims that it has the ability to eliminate, cure or contain the COVID-19 coronavirus at this time.

About XR_x-101 (Oxypurinol)

XORTX Therapeutics has developed XR_x-101 (active ingredient Oxypurinol) a xanthine oxidase inhibitor for the treatment of COVID-19 induced AKI. Two key studies (one in a mouse model of influenza and another in herpes infection) have shown that XR_x-101’s active ingredient, Oxypurinol, can act as (1) an anti-viral, (2) uric acid lowering treatment, and (3) organ-protective therapy. Specifically, in the setting of serious viral infection and tissue damage, XR_x-101 can act to inhibit xanthine oxidase expression due to hypoxia, or tissue destruction, thereby preventing increased serum uric acid (SUA) concentration from reaching saturation levels at which uric acid crystals could trigger acute organ injury. Additionally, excipients in the formulation such as L-arginine, a basic amino acid and nitric oxide source, can increase the aqueous solubility of uric acid, thereby also decreasing uric acid crystal formation associated with tumor lysis-like syndrome due to COVID-19 infection. L-arginine is also reported to protect against kidney injury, in the setting of ischemia reperfusion injury. In concept, XR_x-101 may ameliorate the severity of COVID-19 infection comorbidity, mortality, and damage to kidneys. This, in turn, could increase COVID-19 survival rates, especially in vulnerable populations such as the elderly and those with underlying medical conditions, while also lessening dependence on medical infrastructure and medical services.

References:

1. Naicker, S., Yang, C.-W., Hwang, S.-J., Liu, B.-C., Chen, J.-H. & Jha, V. The Novel Coronavirus 2019 epidemic and kidneys. *Kidney Int.* 97, 824–828 (2020).
2. Cheng, Y., Luo, R., Wang, K., Zhang, M., Wang, Z., Dong, L., Li, J., Yao, Y., Ge, S. & Xu, G. Kidney impairment is associated with in-hospital death of COVID-19 patients. *medRxiv* 2020.02.18.20023242
3. Wang, D., Hu, B., Hu, C., Zhu, F., Liu, X., Zhang, J., Wang, B., Xiang, H., Cheng, Z.,

- Xiong, Y., Zhao, Y., Li, Y., Wang, X. & Peng, Z. Clinical Characteristics of 138 Hospitalized Patients with 2019 Novel Coronavirus-Infected Pneumonia in Wuhan, China. JAMA - J. Am. Med. Assoc. 323, 1061–1069 (2020).
4. Guan, W., Ni, Z., Hu, Y., Liang, W., Ou, C., He, J., Liu, L., Shan, H., Lei, C., Hui, D. S., Du, B., Li, L., Zeng, G., Yuen, K.-Y., Chen, R., Tang, C., Wang, T., Chen, P., Xiang, J., et al. Clinical characteristics of 2019 novel coronavirus infection in China. N. Engl. J. Med. 2
 5. Hirsch JS, Ng JH, Ross DW, et al. Acute Kidney Injury in Patients Hospitalized with Covid-19. Kidney Int. 2020.
 6. Chan L, Chaudhary K, Saha A, et al. Acute Kidney Injury in Hospitalized Patients with COVID-19. medRxiv. 2020:2020.2005.2004.20090944.
 7. Mohamed MM, Lukitsch I, Torres-Ortiz AE, et al. Acute Kidney Injury Associated with Coronavirus Disease 2019 in Urban New Orleans. Kidney360. 2020:10.34067/KID.0002652020.
 8. <http://www.xortx.com/2020/08/04/xortx-partners-with-mount-sinai-icahn-school-of-medicine-on-us-based-clinical-trial-in-covid-19/>

About XORTX Therapeutics Inc.

XORTX Therapeutics Inc. is a biopharmaceutical company with three clinically advanced products in development – XRx-008 for Autosomal Dominant Polycystic Kidney Disease (ADPKD), XRx-101 for Coronavirus / COVID-19 infection and XRx-221 is a clinical stage program for Type 2 Diabetic Nephropathy (T2DN). The Company has strong intellectual property rights and established proof of concept through independent clinical studies. XORTX is working to advance its clinical development stage products that target xanthine oxidase to inhibit production of uric acid. At XORTX Therapeutics, we are dedicated to developing medications to improve the quality of life and future of patients. Additional information on XORTX Therapeutics is available at www.xortx.com.

**For further information,
please contact:**

Allen Davidoff, CEO
adavidoff@xortx.com or +1
403 455 7727

Bruce Rowlands, Chairman
browlands@xortx.com or +1
416 230 7260

The CSE has neither approved nor disapproved the contents of this news release. No stock exchange, securities commission or other regulatory authority has approved or disapproved the information contained herein.

This news release includes forward looking statements that are subject to assumptions, risks and uncertainties. Statements in this news release which are not purely historical are forward looking statements, including without limitation any statements concerning the Company's intentions, plans, estimates, beliefs or expectations regarding the future. Although the Company believes that any such intentions, plans, estimates, beliefs and expectations in this news release are reasonable, there can be no assurance that any such intentions, plans, beliefs and expectations will prove to be accurate. The Company cautions readers that all forward looking statements, including without limitation those relating to the Company's future operations and business prospects, are based on assumptions none of which can be assured, and are subject to certain risks and uncertainties that could cause

actual events or results to differ materially from those indicated in the forward looking statements. Readers are advised to rely on their own evaluation of such risks and uncertainties and should not place undue reliance on forward looking statements. Any forward looking statements are made as of the date of this news release, and the Company assumes no obligation to update the forward looking statements, or to update the reasons why actual events or results could or do differ from those projected in the forward looking statements. The Company assumes no obligations to update any forward looking statements, whether as a result of new information, future events or otherwise.



Source: XORTX Therapeutics Inc.