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XORTX Announces Positive Topline Results from XRX-OXY-101 Clinical Trial

Safe and Effective Dosing of XORLO™

CALGARY, Alberta, Jan. 19, 2023 (GLOBE NEWSWIRE) -- XORTX Therapeutics Inc. ("**XORTX**" or the "**Company**") (NASDAQ: XRTX | TSXV: XRTX | Frankfurt: ANU), a late-stage clinical pharmaceutical company focused on developing innovative therapies to treat progressive kidney disease, is pleased to announce positive topline results from the XRX-OXY-101 – Bridging Pharmacokinetics Clinical Trial (the "**Study**") characterizing the pharmacokinetics of the Company's proprietary formulation of oral oxypurinol, XORLO™. Results from the Study showed that XORLO™ was well tolerated across the various dosing regimens. No safety issues were identified in any of the four parts of the Study on the 88 subjects who received drug. Results from the four parts of the Study showed (i) a substantial increase in the bioavailability of oxypurinol with the XORLO™ formulation platform; (ii) increased dose proportionality compared to non-formulated oxypurinol; (iii) a multiple dosing regimen that achieved therapeutic target values; and (iv) confirmation of the innovations claimed in the recently granted US and EU patents regarding the Company's unique proprietary formulations of oxypurinol.

Each of these results will provide key data to facilitate precise dosing recommendations for upcoming late stage Phase 3 registration trial in individuals with progressing kidney disease due to autosomal dominant polycystic kidney disease ("**ADPKD**").

Dr. Allen Davidoff, CEO of XORTX, stated, "We are pleased to have achieved this important milestone in the development of XORLO™, the Company's proprietary oral formulation of oxypurinol. The comprehensive characterization of this drug and its unique proprietary formulation provides a substantial understanding of how the XORLO™ formulation behaves pharmacokinetically in individuals. Importantly, the compiled data set from the four parts of this Study demonstrates an innovative and substantial improvement on the drug product that can now be used to guide development of population pharmacokinetic models to inform dosing in individuals with ADPKD in our upcoming late stage Phase 3 registration trial."

About the XRX-OXY-101 Clinical Trial and Positive Results

Part 1 **–** Characterized the improvement in bioavailability of XORLO™ compared to oxypurinol free acid alone, using a single dose of drug in 32 individuals. Results of the Study demonstrated increased bioavailability of 100% or more could be achieved with test formulations compared to non-formulated oxypurinol alone;

Part 2 **–** Characterized the effect of food on bioavailability of oxypurinol, when a single dose of XORLO™ was administered in 12 individuals, when taken with a high fat meal. Results

from this part of the Study showed that when taken with food, an average increase of exposure of ~40% in oxypurinol compared to the fasted state.

Part 3 – Assessed the exposure to oxypurinol following low, moderate, and higher dose strengths of the XORLO™ selected for phase 3 clinical development in 32 individuals. Tablets were administered once to individuals and pharmacokinetics were determined, including peak circulating concentrations of drug and total exposure to drug in the circulation. This confirmed the increased bioavailablility seen in Part 1 and provided clear evidence of a substantial improvement in dose related bioavailability compared to oxypurinol alone. Results from this part of the Study provided evidence of a substantial improvement in dose related exposure across the range of doses tested compared to oxypurinol alone. These results were encouraging as limited dose proportionality severely limited other formulations of oxypurinol.

Part 4 – Tested the XORLO™ formulation in a multi-dose regimen intended to achieve steady state circulating concentrations of drug at therapeutic concentrations of oxypurinol, in 12 individuals. This formulation, selected for future clinical and commercial development, was administered over a 14 day period and aimed to further characterize the effect of fasting versus a low fat meal on steady state concentrations. The results of this part of the Study showed that steady state concentrations of oxypurinol at the relevant therapeutic range were achievable within several days of administration of XORLO™ and the food effect on exposure under steady state was minimal. Part 4 of the Study stands out in that XORTX was able to demonstrate with the XORLO™ formulation the highest ever reported systemic exposure of oxypurinol in healthy normal individuals using an oral oxypurinol-based drug product.

With respect to safety observations in the Study, individuals in Parts 1 through 4 were administered drug in single or multiple doses, as well as fasted or fed or with varied dose strengths. Though dosing was widely varied throughout test groups, subjects showed minimal adverse effects and the range of AE's observed was as expected.

About the XRx-008 Program

Oxypurinol is a purine based XOI with important pharmacologic characteristics ideal for administration to individuals with ADPKD. Key pharmacologic attributes include:

1/ The ability to act in the circulation, kidney and cardiovascular tissue and inhibit the production of uric acid and so attenuate the mechanism of injury and accelerating effect of XOI on progressing diseases.

2/ XORTX's proprietary formulation of oxypurinol, XORLO™, provides substantially increased absorption of oxypurinol. This approach provides an effective, well tolerated drug with an extensive clinical safety experience suggesting the Company's XRx-008 program has the capacity to provide superior XOI to slow the accelerating decline kidney function during ADPKD progression.

About ADPKD

ADPKD is a rare disease that affects more that 10 million individuals worldwide.[1,2] ADPKD

is typically diagnosed based upon expansion of fluid-filled cysts in the kidneys. Over time, the increasing number and size of cysts can contribute to structural and functional changes to kidneys and is frequently accompanied by chronic pain which is a common problem for patients with ADPKD.[3] Expansion of cysts is thought to compress healthy functioning tissue surrounding the cysts and contribute to further loss of kidney function, fibrosis, impaired nutrient exchange and impaired kidney function, accompanied later by end-stage renal disease.[1] For individuals with progressing ADPKD, treatment recommendations include anti-hypertensive treatment, dietary restrictions, and, for a limited percentage of suitable patients, pharmacotherapy.[4] New, more broadly applicable therapies to effectively slow decline of kidney function in ADPKD are needed.

About XORTX Therapeutics Inc.

XORTX is a pharmaceutical company with two clinically advanced products in development: 1) our lead, XRx-008 program for ADPKD; and 2) our secondary program in XRx-101 for acute kidney and other acute organ injury associated with Coronavirus / COVID-19 infection. In addition, XRx-225 is a pre-clinical stage program for Type 2 Diabetic Nephropathy. XORTX is working to advance its clinical development stage products that target aberrant purine metabolism and xanthine oxidase to decrease or inhibit production of uric acid. At XORTX, we are dedicated to developing medications to improve the quality of life and future health of patients. Additional information on XORTX is available at www.xortx.com.

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Forward Looking Statements

This press release contains express or implied forward-looking statements pursuant to U.S. Federal securities laws. These forward-looking statements and their implications are based on the current expectations of the management of XORTX only, and are subject to a number of factors and uncertainties that could cause actual results to differ materially from those described in the forward-looking statements. Except as otherwise required by law, XORTX undertakes no obligation to publicly release any revisions to these forward-looking statements to reflect events or circumstances after the date hereof or to reflect the occurrence of unanticipated events. More detailed information about the risks and uncertainties affecting XORTX is contained under the heading “Risk Factors” in XORTX’s Registration Statement on Form F-1 filed with the SEC, which is available on the SEC's website, www.sec.gov (including any documents forming a part thereof or incorporated by reference therein), as well as in our reports, public disclosure documents and other filings with the securities commissions and other regulatory bodies in Canada, which are available on www.sedar.com.

Source: XORTX Therapeutics Inc.