
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

FORM 6-K

REPORT OF FOREIGN PRIVATE ISSUER PURSUANT TO RULE 13a-16 OR 15d-16 UNDER THE SECURITIES EXCHANGE ACT OF 1934

For the month of July 2022

Commission File Number: 001-40858

XORTX Therapeutics Inc.

Suite 2400 - 745 Thurlow Street, Vancouver, British Columbia, Canada, V6E 0C5

Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or Form 40-F.

Form 20-F Form 40-F

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1): ___

Note: Regulation S-T Rule 101(b)(1) only permits the submission in paper of a Form 6-K if submitted solely to provide an attached annual report to security holders.

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7): ___

Note: Regulation S-T Rule 101(b)(7) only permits the submission in paper of a Form 6-K if submitted to furnish a report or other document that the registrant foreign private issuer must furnish and make public under the laws of the jurisdiction in which the registrant is incorporated, domiciled or legally organized (the registrant's "home country"), or under the rules of the home country exchange on which the registrant's securities are traded, as long as the report or other document is not a press release, is not required to be and has not been distributed to the registrant's security holders, and, if discussing a material event, has already been the subject of a Form 6-K submission or other Commission filing on EDGAR.

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

XORTX Therapeutics Inc.
(Registrant)

Date: July 13, 2022

By: /s/ Allen Davidoff
Name: Allen Davidoff
Title: Chief Executive Officer

EXHIBIT INDEX

99.1 [News Release dated July 13, 2022](#)

XORTX Announces Positive Topline Results from Pharmacokinetics Bridging Clinical Trial

Clinical Trial Shows Substantially Improved Bioavailability

CALGARY, Alberta, July 13, 2022 (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 Part 1 of the three part Pharmacokinetics Bridging Study – XRX-OXY-101 ("PK Clinical Trial") - showing a substantial increase in oral bioavailability of two versions of XORTX's proprietary oxypurinol formulation compared to a control formulation. In addition, accompanying the improved bioavailability findings in Part 1 of the PK Clinical Trial was a clean safety and pharmacologic profile with no drug related adverse or serious adverse events related to oral administration of oxypurinol.

Successful recruitment, administration of a single oral dose of drug formulation, blood sampling and bioanalytical evaluation were conducted in Part 1 of the PK Clinical Trial to characterize the pharmacokinetics and bioavailability of the unique proprietary formulations in advance of the Company's planned late-stage phase 3 registration trial in autosomal dominant polycystic kidney disease ("ADPKD").

The PK Clinical Trial is undertaken in three parts and designed with four important objectives: 1) to determine which of XORTX's novel formulations results in the greatest circulating oxypurinol concentrations and oxypurinol exposure; 2) to determine the effect of food on the bioavailability of the selected formulation; 3) to determine the effect of dose on the bioavailability of the selected formulation; and 4) to determine the safety and pharmacokinetics of multiple doses of the selected formulation. Knowledge gained during the conduct of this PK Clinical Trial will provide guidance regarding the formulation selected and the oral dosing regimen necessary to reach and maintain the target circulating concentration of oxypurinol. Part 1 of the PK Clinical Trial involved dosing under fasted conditions. Part 2 will measure the effect of food on pharmacokinetics and Part 3 is a multiple dose pharmacokinetics evaluation. The PK Clinical Trial is designed to permit XORTX to characterize the safety and relative bioavailability of the XRX-008 program formulations. Knowledge gained during the conduct of this PK Clinical Trial is now providing critical guidance regarding the oral dosing for our planned phase 3 registration trial in ADPKD.

Part 1 of the XRX-OXY-101 achieved the following purposes:

1. Confirmed improved human bioavailability of XORTX formulations of oxypurinol for future development;
2. Established a pharmacokinetics data set characterizing oral bioavailability of XORTX formulations for future population based pharmacokinetic modeling;
3. Confirmed the unique proprietary formulation innovations from recently granted US and EU patents that provide for increased circulating concentrations of oxypurinol; and
4. Built upon the pharmacokinetic and safety database of safety and efficacy for oxypurinol.

Dr. Allen Davidoff, CEO of XORTX, stated, "Successful completion of Part 1 of the XRX-OXY-101 Study provides important knowledge for selecting the clinical dose and formulation for future oral dosing in our upcoming phase 3 registration trial. Pharmacokinetic modeling of this data will provide additional information to guide decision making as we plan and execute development of the XRX-008 program clinical and commercial development. We look forward to the initiation of dosing of Part 2 of the XRX-OXY-101 this week."

About ADPKD

ADPKD is a rare disease that affects more than 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.

For further information, please contact:

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

Nick Rigopulos, Director of Communications
nick@alpineequityadv.com or +1 617 901 0785

The TSX Venture Exchange and Nasdaq have 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.

References:

1. Wiley C., Kamat S., Stelhorn R., Blais J., Analysis of nationwide data to determine the incidence and diagnosis of autosomal dominant polycystic kidney disease in the USA, *Kidney Disease*, 5(2): 107-117, 2019
2. Bergmann C., Guay-Woodford L.M., Harris P.C., Horie S., Peters D.J., Torres V.E., Polycystic Kidney Disease, *Nat Rev Dis Primers*. 4(1): 50, 2018
3. <https://pkdcure.org/living-with-pkd/chronic-pain-management>
4. Gimpel C., Bermann C., Bockenbauer D., et al., International consensus statement of the diagnosis and management of autosomal dominant polycystic kidney disease in children and young people, *Nat Rev Nephrol* 15(11):713-726, 2019

Forward Looking Statements

This press release may contain express or implied forward-looking statements pursuant to Canadian and U.S. Federal securities laws. These forward-looking statements and their implications are based on the current reasonable 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 such forward-looking statements. Except as otherwise required by law, XORTX undertakes no obligation to publicly release any revisions or updates 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 in the Company's most recently filed Annual Information Form and the Management Discussion and Analysis for its most recent financial reporting period filed on the Company's SEDAR profile (www.sedar.com) and under the heading "Risk Factors" in XORTX's Registration Statement on Form F-1 filed with the Securities and Exchange Commission ("SEC") available on the SEC's website, www.sec.gov.