
FORM 6-K
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Report of Foreign Issuer

**Pursuant to Rule 13a-16 or 15d-16 of
the Securities Exchange Act of 1934**

For the Month of April, 2010

Commission File Number 1-32001

Lorus Therapeutics Inc.

(Translation of registrant's name into English)

2 Meridian Road, Toronto, Ontario M9W 4Z7

(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover of 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.

Indicate by check mark whether the registrant by furnishing the information contained in this Form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.

Yes ☐

No ☒

If "Yes" is marked, indicate below the file number assigned to the registrant in connection with Rule 12g3-2(b):82-_____.

SIGNATURES

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.

Lorus Therapeutics Inc.

Date: April 7, 2010

By: /s/ "Elizabeth Williams"
Elizabeth Williams
Director of Finance and Controller

EXHIBIT INDEX

99.1 News Release dated April 6, 2010 - Lorus Therapeutics Files Registration Statement with SEC

**NEWS RELEASE****Lorus Therapeutics Files Registration Statement with SEC**

TORONTO, ONTARIO, April 6, 2010 – Lorus Therapeutics Inc. (TSX: LOR) ("Lorus"), a biopharmaceutical company specializing in the research and development of pharmaceutical products and technologies for the management of cancer, announced today that it filed a Registration Statement on Form F-1 (the "Registration Statement") with the United States Securities and Exchange Commission (the "SEC") for an offering of up to US\$17,500,000 of units in the United States. Global Hunter Securities, LLC has been engaged to act as the placement agent in connection with the offering.

This registration will allow Lorus to offer and issue units, each unit consisting of one common share and one half of a warrant (a "Warrant") to purchase common shares (collectively referred to as the "Securities"). Each whole Warrant will permit the holder to purchase one common share, at an initial exercise price of 125% of the unit offering price (which will be determined at the time of the offering), and subsequently at a premium to the unit offering price which rises 5% on each anniversary of the closing date, to a maximum exercise price of 145% of the unit offering price on the fourth anniversary of the closing. Lorus may also require the exercise of the Warrants if the closing price of the common shares on the principal market upon which they are traded equals or exceeds 225% of the unit offering price for five consecutive trading days.

Lorus intends to use the net proceeds from the sale of any Securities to fund its product development programs, including further development of the LOR-2040 clinical program, Phase I clinical development for LOR-253 as well as other research programs, and to fund working capital and for other general corporate purposes.

The Registration Statement relating to the Securities has been filed with the SEC but has not yet become effective. The details of the offering (including the terms of the Securities) are subject to change based on market conditions at the time the Registration Statement becomes effective. The offering is subject to regulatory approval, including the approval of the Toronto Stock Exchange.

The Securities may not be sold, nor may offers to buy be accepted, before the Registration Statement becomes effective. This news release shall not constitute an offer to sell or the solicitation of an offer to buy the Securities, nor shall there be any sale of the Securities in any jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of such jurisdiction.

A copy of the prospectus included in the Registration Statement can be obtained upon request by contacting Investor Relations at the contact information below.

About Lorus

Lorus is a biopharmaceutical company focused on the discovery, research and development of novel therapeutics in cancer. Lorus' goal is to capitalize on its research, preclinical, clinical and regulatory expertise by developing new drug candidates that can be used, either alone, or in combination with other drugs, to successfully manage cancer. Through its own discovery efforts and an acquisition and in-licensing program, Lorus is building a portfolio of promising anticancer drugs. The common shares of Lorus Therapeutics Inc. are listed for trading on the Toronto Stock Exchange under the symbol LOR.

Forward Looking Statements

Certain statements contained in this press release constitute forward-looking statements or information (collectively "forward-looking statements") within the meaning of the "safe harbour" provisions of applicable securities legislation. Forward-looking statements are typically identified by words such as "anticipate", "continue", "estimate", "expect", "forecast", "may", "will", "project", "could", "plan", "intend", "should", "believe", "outlook", "potential", "target" and similar words suggesting future events or future performance. In particular, this press release contains, without limitation, forward-looking statements pertaining to:

- a possible sale of Securities by Lorus in the United States pursuant to a Registration Statement;
- the maximum amount of the offering;
- the terms of the Securities;
- the use of the net proceeds received from any sale of Securities pursuant to the Registration Statement;
- general economic conditions;
- Lorus' future business prospects and opportunities, including, without limitation, Lorus' financial situation;
- investor demand;
- the outcome of the proposed offering; and
- Lorus' inability or failure to obtain adequate financing on a timely basis.

With respect to forward-looking statements contained in this press release, we have made assumptions regarding various matters, including the matters identified in the Registration Statement. Although we believe that the expectations reflected in the forward-looking statements contained in this press release, and the assumptions on which such forward-looking statements are made, are reasonable, we cannot assure you that such expectations will prove to be correct.

Readers are cautioned not to place undue reliance on forward-looking statements included in this press release, as there can be no assurance that the plans, intentions or expectations upon which the forward-looking statements are based will occur. By their nature, forward-looking statements involve numerous assumptions, known and unknown risks and uncertainties that contribute to the possibility that the predictions, forecasts, projections and other forward-looking statements will not occur, which may cause our actual performance and financial results in future periods to differ materially from any estimates or projections of future performance or results expressed or implied by such forward looking statements. These risks and uncertainties include those identified in the Registration Statement.

The forward-looking statements contained in this press release speak only as of the date of this press release. Except as expressly required by applicable securities laws, we do not undertake any obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. The forward-looking statements contained in this press release are expressly qualified by this cautionary statement.

Enquiries:

For further information, please contact:

Dr. Saeid Babaei, 416-798-1200 ext. 490; ir@lorusthera.com