

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 February, 2011

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: February 28, 2011

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

EXHIBIT INDEX

99.1 News Release dated February 22, 2011 -Lorus Therapeutics Announces Publication on LOR-2040 Anticancer Activity in Acute Myeloid Leukemia



NEWS RELEASE

Lorus Therapeutics Announces Publication on LOR-2040 Anticancer Activity in Acute Myeloid Leukemia

TORONTO, CANADA, February 22, 2011 — Lorus Therapeutics Inc. (TSX: LOR) ("Lorus"), a biopharmaceutical company specializing in the discovery, research and development of pharmaceutical products and technologies for the management of cancer, today announced the publication of a research article by investigators at Ohio State University (OSU) demonstrating that Lorus' lead cancer drug LOR-2040, formerly known as GTI-2040, improves the anticancer effects of the chemotherapy drug Ara-C. The lead authors of the publication were Dr Ping Chen and Dr Josephine Aimuwu who carried out these studies in the laboratories of Dr Guido Marcucci and Dr Kenneth Chan at OSU. The results in the article provide support for continuing the clinical program of LOR-2040 in combination with Ara-C in the treatment of relapsed and refractory acute myeloid leukemia (AML).

In the article, OSU investigators found that LOR-2040 significantly increased the antiproliferative activity of Ara-C in leukemia cells as a result of downregulation of the LOR-2040 target, R2. Treatment of leukemia cells with LOR-2040 plus Ara-C resulted in the production of higher intracellular amounts of Ara-CTP, which is the cytotoxic product of Ara-C, than was possible with Ara-C alone. The study also provided support for the intracellular mechanism through which this increased anti-tumor activity is achieved. LOR-2040 additionally showed a dose-dependent accumulation in leukemia cells that correlated with decreased levels of R2. The study investigators concluded that the data provided a mechanistic justification for evaluation of LOR-2040 in combination with Ara-C in AML patients.

"The findings in this publication are important because they demonstrate that LOR-2040 and Ara-C have synergistic anticancer effects in leukemia", said Dr. Aiping Young, Lorus' President and CEO. "Although Ara-C is effective in the treatment of relapsed and refractory AML, there is a need for safe and effective additional therapies to be used in combination with Ara-C to increase the rate of cancer remissions and patient survival. This article gives us further validation of the potential of LOR-2040 as an efficacious treatment for this disease."

The article entitled "Biochemical Modulation of Aracytidine (Ara-C) Effects by GTI-2040, a Ribonucleotide Reductase Inhibitor, in K562 Human Leukemia Cells" was published in the peer-reviewed journal *The AAPS Journal* and is available on the Journal's website.

About LOR-2040

LOR-2040 is an RNA-targeted drug that specifically targets the R2 component of ribonucleotide reductase, which is required for DNA synthesis and cell proliferation.

The R2 target has been described as a malignant determinant that is elevated in a wide range of tumor types, which can cooperate with a variety of cellular cancer causing genes known as oncogenes to enhance tumor growth and metastatic potential. Through downregulation of R2, LOR-2040 has demonstrated strong antitumor and antimetastatic activity in a variety of tumor types in both in vitro and in vivo models, and has been explored in a multiple Phase I/II clinical program, including an advanced Phase II clinical trial with LOR-2040 and high dose Ara-C (HiDAC) in refractory and relapsed Acute Myeloid Leukemia (AML).

About Lorus

Lorus is a biopharmaceutical company focused on the 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. The Company also has expertise in antimicrobial drug discovery. Lorus Therapeutics Inc. is listed on the Toronto Stock Exchange under the symbol LOR.

Forward Looking Statements

This press release may contain forward-looking statements within the meaning of Canadian and U.S. securities laws. Such statements include, but are not limited to, statements relating to: our research program plans, our plans to conduct clinical trials, the successful and timely completion of clinical studies and the regulatory approval process, our ability to continue as a going concern, our ability to fund future research, our plans to obtain partners to assist in the further development of our product candidates, the establishment of corporate alliances, the Company's plans, objectives, expectations and intentions and other statements including words such as "continue", "believe", "plan", "expect", "intend", "will", "should", "may", and other similar expressions. Such statements reflect our current views with respect to future events and are subject to risks and uncertainties and are necessarily based upon a number of estimates and assumptions that, while considered reasonable by us are inherently subject to significant business, economic, competitive, political and social uncertainties and contingencies. Many factors could cause our actual results, performance or achievements to be materially different from any future results, performance, or achievements that may be expressed or implied by such forward-looking statements, including, among others: our ability to continue as a going concern, our ability to obtain the capital required for research and operations, the inherent risks in early stage drug development including demonstrating efficacy, development time/cost and the regulatory approval process; the progress of our clinical trials; our ability to find and enter into agreements with potential partners; our ability to attract and retain key personnel; changing market conditions; and other risks detailed from time-to-time in our ongoing quarterly filings, annual information forms, annual reports and annual filings with Canadian securities regulators and the United States Securities and Exchange Commission.

Should one or more of these risks or uncertainties materialize, or should the assumptions set out in the section entitled "Risk Factors" in our Annual Information Form underlying those forward-looking statements prove incorrect, actual results may vary materially from those described herein. These forward-looking statements are made as of the date of this press release and we do not intend, and do not assume any obligation, to update these forward-looking statements, except as required by law. We cannot assure you that such statements will prove to be accurate as actual results and future events could differ materially from those anticipated in such statements. Investors are cautioned that forward-looking statements are not guarantees of future performance and accordingly investors are cautioned not to put undue reliance on forward-looking statements due to the inherent uncertainty therein.

Lorus Therapeutics Inc.'s recent press releases are available through the Company's website at www.lorusthera.com. For Lorus' regulatory filings on SEDAR, please go to www.Sedar.com. For SEDAR filings prior to July 10, 2007 you will find these under the company profile for Global Summit Real Estate Inc. (Old Lorus).

Enquiries:

For further information, please contact:

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