

**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 September 2014.

Commission File Number: **001-35776**

Acasti Pharma Inc.

(Translation of registrant's name into English)

545 PROMENADE DU CENTROPOLIS, SUITE 100

LAVAL QUEBEC H7T 0A3

(Address of principal executive office)

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 [x] 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.

On September 30, 2014 the Registrant issued a press release, a copy of which is attached hereto as Exhibit 99.1 and is incorporated herein by reference.

(c) Exhibit 99.1. Press release dated September 30, 2014

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.

Acasti Pharma Inc.

(Registrant)

Date: September 30, 2014

/s/ ANDRE GODIN

Andre Godin

Interim President and Chief Executive Officer

Acasti Announces Positive Top-Line Pharmacokinetic Results

- *CaPre® demonstrated a near dose proportional increase with plasma EPA and DHA levels increasing as dose increases*
- *Bioavailability of CaPre® not significantly reduced when taken with a low-fat meal versus high-fat meal; a significant advantage for the management of hypertriglyceridemic patients on low fat diets*
- *CaPre® is safe and well tolerated, with no safety concerns*

LAVAL, Québec, Sept. 30, 2014 (GLOBE NEWSWIRE) -- Acasti Pharma Inc. ("**Acasti**" or the "**Corporation**") (Nasdaq:ACST) (TSX-V:APO), an emerging biopharmaceutical company, announces top-line results for its pharmacokinetic (PK) trial evaluating the bioavailability and safety of CaPre® on healthy individuals taking single and multiple daily oral doses of the Corporation's new investigational drug candidate composed of a patent-protected highly concentrated novel omega-3 phospholipid for the prevention and treatment of certain cardiometabolic disorders.

"The successful completion of the PK study is another important milestone in the clinical testing of CaPre®," stated Andre Godin, Acasti's Interim President and Chief Executive Officer. "The results confirm that CaPre® is bioavailable, safe and well tolerated. The study was conducted under an US Investigational New Drug (IND) application and is an important part of Acasti's clinical development program."

Trial Design

The PK trial was an open-label, randomized, multiple-dose, single-center, parallel-design study in healthy volunteers. Forty-two male and female individuals, at least 18 years of age, were enrolled into 3 groups of 14 subjects who took 1, 2 or 4 grams of CaPre®, administered once a day 30 minutes after breakfast. The objectives of the study were to determine the pharmacokinetic profile and safety on Day 1 following a single oral dose and Day 14 following multiple oral doses of CaPre® on individuals pursuing a low-fat diet (therapeutic lifestyle changes diet). The effect of a high-fat meal on the bioavailability of CaPre® was also evaluated at Day 15. Blood samples were collected for assessment of EPA and DHA total lipids in plasma to derive the pharmacokinetic parameters.

CaPre® Demonstrated Near Dose Proportionality

CaPre® pharmacokinetics appear to be approximately dose proportional over the 1 to 4 gram a day dose range. Following a single daily dose, CaPre® reached steady state (EPA and DHA levels plateaued) within 7 days of dosing.

Significant Advantage: Bioavailability of CaPre® Not Meaningfully Affected by Fat Content of Meal

The bioavailability of CaPre® does not appear to be meaningfully affected by the fat content of the meal consumed prior to dose administration. "The fact that the bioavailability of CaPre® is not significantly reduced when taken with a low fat meal compared to a high fat meal is an important finding, as a low fat diet is part of the management of hypertriglyceridemic patients," highlighted Pierre Lemieux, PhD, Chief Operating Officer of Acasti.

CaPre® Well Tolerated with No Safety Concerns

CaPre® was found to be safe and well tolerated at all doses tested, with all subjects completing the study. Three adverse events were reported and considered relating to CaPre®, all of which were mild.

About Acasti Pharma Inc.

Acasti is an emerging biopharmaceutical company focused on the research, development and commercialization of new krill oil-based forms of omega-3 phospholipid therapies for the treatment and prevention of certain cardiometabolic disorders, in particular abnormalities in blood lipids, also known as dyslipidemia. Because krill feeds on phytoplankton (diatoms and dinoflagellates), it is a major source of phospholipids and polyunsaturated fatty acids ("PUFAs"), mainly eicosapentaenoic acid ("EPA") and docosahexaenoic acid ("DHA"), which are two types of omega-3 fatty acids well known to be beneficial for human health. CaPre®, currently Acasti's only prescription drug candidate, is a highly purified omega-3 phospholipid concentrate derived from krill oil and is being developed to help prevent and treat hypertriglyceridemia, which is a condition characterized by abnormally high levels of triglycerides in the bloodstream. ONEMIA®, a medical food and currently Acasti's only commercialized product, is a purified omega-3 phospholipid concentrate derived from krill oil with lower levels of phospholipids, EPA and DHA content than CaPre®.

Forward Looking Statements

Statements in this press release that are not statements of historical or current fact constitute "forward-looking statements" within the meaning of the U.S. securities laws and Canadian securities laws. Such forward-looking statements involve known and unknown risks, uncertainties, and other unknown factors that could cause the actual results of Acasti to be materially different from historical results or from any future results expressed or implied by such forward-looking statements. In addition to statements which explicitly describe such risks and uncertainties, readers are urged to consider statements labeled with the terms "believes," "belief," "expects," "intends," "anticipates," "will," or "plans" to be uncertain and forward-looking. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this press release.

The forward-looking statements contained in this news release are expressly qualified in their entirety by this cautionary statement and the "Cautionary Note Regarding Forward-Looking Information" section contained in Acasti's latest Annual Information Form, which also forms part of Acasti's latest annual report on Form 20-F, and which is available on SEDAR at www.sedar.com, on EDGAR at www.sec.gov/edgar.shtml and on the investor section of Acasti's website at acastipharma.com (the "AIF"). All forward-looking statements in this press release are made as of the date of this press release. Acasti does not undertake to update any such forward-looking statements whether as a result of new information, future events or otherwise, except as required by law. The forward-looking statements contained herein are also subject generally to other risks and uncertainties that are described from time to time in Acasti's public securities filings with the Securities and Exchange Commission and the Canadian securities commissions. Additional information about these assumptions and risks and uncertainties is contained in the AIF under "Risk Factors".

Neither NASDAQ, the TSX Venture Exchange nor its Regulation Services Provider (as that term is defined in the policies of the TSX Venture Exchange) accepts responsibility for the adequacy or accuracy of this release.

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