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

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of
the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): March 24, 2017

XENON PHARMACEUTICALS INC.

(Exact name of Registrant as Specified in Its Charter)

Canada	**001-36687**	**98-0661854**
(State or Other Jurisdiction of Incorporation)	(Commission File Number)	(IRS Employer Identification No.)

200-3650 Gilmore Way
Burnaby, British Columbia V5G 4W8
Canada
(Address of principal executive offices including zip code)

(604) 484-3300
(Registrant's telephone number, including area code)

(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instructions A.2. below):

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 8.01 Other Events

On March 24, 2017, Xenon Pharmaceuticals Inc. (the "Company") issued a press release announcing results from the double-blind, multi-center, vehicle-controlled, parallel-group study designed to evaluate the efficacy, safety, tolerability and systemic exposure of XEN801 for the treatment of moderate to severe facial acne. A copy of the Company's press release is attached hereto as Exhibit 99.1 and is incorporated herein by reference.

Item 9.01 Financial Statements and Exhibits

(d) Exhibits.

Exhibit Number	**Description**
99.1	Press Release issued by Xenon Pharmaceuticals Inc. dated March 24, 2017.

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 hereunto duly authorized.

Xenon Pharmaceuticals Inc.

Date: March 24, 2017

By: /s/ *Ian Mortimer*

Ian Mortimer

Chief Financial Officer & Chief Operating Officer

EXHIBIT INDEX

Exhibit Number	Description
99.1	Press Release issued by Xenon Pharmaceuticals Inc. dated March 24, 2017.

Exhibit 99.1

XENON

NEWS RELEASE

Xenon Pharmaceuticals Announces XEN801 Did Not Meet Efficacy Endpoints in Phase 2 Clinical Trial in Patients with Moderate to Severe Acne

Company to Hold Conference Call at 8:30 am ET Today

BURNABY, British Columbia, March 24, 2017 -- Xenon Pharmaceuticals Inc. (Nasdaq:XENE), a clinical-stage biopharmaceutical company, today reported topline efficacy results from the double-blind, multi-center, vehicle-controlled, parallel-group study designed to evaluate the efficacy, safety, tolerability and systemic exposure of XEN801 for the treatment of moderate to severe facial acne.

XEN801 is a topical stearoyl Co-A desaturase-1, or SCD1 inhibitor, developed for the potential treatment of moderate to severe acne. Results from this trial showed that XEN801 did not demonstrate a statistically significant difference from vehicle placebo in its primary endpoint of the percent change in total (inflammatory and non-inflammatory) lesion count from baseline to week 12. The results also show that XEN801 did not demonstrate statistical significance relative to key secondary efficacy endpoints. XEN801 did demonstrate a favorable safety and tolerability profile, with no drug-related serious adverse events.

Dr. Simon Pimstone, Xenon's President and Chief Executive Officer, said, “Despite the good scientific and preclinical rationale to pursue SCD1 as a novel acne target, the topline clinical results do not support this hypothesis or the continued development of XEN801. While we are disappointed that XEN801 did not demonstrate efficacy in the treatment of acne, we have a broad, diversified pipeline of small molecule ion channel modulators based on targets with high human validation that we continue to advance.”

Dr. Pimstone added, “We look forward to a number of important milestone events anticipated over the coming months, including a topline data read-out from the Phase 2b clinical trial of TV-45070 in post-herpetic neuralgia being conducted by our collaborator, Teva; the submission of an IND, or IND equivalent, for XEN901, our proprietary novel Nav1.6 inhibitor for the potential treatment of epilepsy, presently expected in the fourth quarter of this year; and advancement by our collaborator, Genentech, of its Nav1.7 pain program into Phase 2 expected this year. In addition, our goal is to continue to expand our current proprietary pipeline of novel, ion channel modulators through both our internal research efforts and our ongoing assessment of promising external product opportunities.”

Conference Call Information

Xenon will host a conference call and live audio webcast today at 8:30 a.m. Eastern Time (5:30 a.m. Pacific Time) to discuss the XEN801 Phase 2 clinical trial results. To participate in the call, please dial (855) 779-9075, or (631) 485-4866 for international callers, and provide conference ID number 94938286. The webcast will be broadcast live on the “Investors” section of Xenon's website at www.xenon-pharma.com and will be available for replay following the call for 30 days.

About Xenon Pharmaceuticals Inc.

Xenon is a clinical-stage biopharmaceutical company discovering and developing a pipeline of differentiated therapeutics for orphan indications that it intends to commercialize on its own and for larger market indications that the company intends to partner with global pharmaceutical companies. Xenon has built a core enabling discovery platform, referred to as Extreme Genetics, for the discovery of validated drug targets by studying rare human diseases with extreme traits, including diseases caused by mutations in ion channels, known as channelopathies. Xenon's Extreme Genetics platform has yielded the first approved gene therapy product in the European Union and a broad development pipeline and multiple pharmaceutical partnerships, including with Teva and Genentech. For more information, please visit www.xenon-pharma.com.

Safe Harbor Statement

This press release contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 and the Private Securities Litigation Reform Act of 1995 and Canadian securities laws. These forward-looking statements include statements regarding our ability to achieve milestones in both our proprietary and partnered development programs, the anticipated timing of IND submissions with regulatory agencies, the initiation of future clinical trials, the timing of and results from our and our collaborators' ongoing clinical trials and pre-clinical development activities, the plans of our collaboration partners and their interactions with regulatory agencies, the potential efficacy, future development plans, regulatory success and commercial potential of our and our collaborators' product candidates, the progress and potential of ongoing development programs and our plans to continue to expand our current proprietary pipeline through both internal research efforts and external opportunities. These forward-looking statements are based on current assumptions that involve risks, uncertainties and other factors that may cause the actual results, events or developments to be materially different from those expressed or implied by such forward-looking statements. These risks and uncertainties, many of which are beyond our control, include, but are not limited to: clinical trials may not demonstrate safety and efficacy of any of our or our collaborators' product candidates; our Extreme Genetics discovery platform or ongoing collaborations may not yield additional product candidates; our efforts to expand our current pipeline may not be successful; any of our or our collaborators' product candidates may fail in development, may not receive required regulatory approvals, or may be delayed to a point where they are not commercially viable; we may not achieve additional milestones pursuant to our collaboration agreements; the impact of competition; the impact of expanded product development and clinical activities on operating expenses; adverse conditions in the general domestic and global economic markets; as well as the other risks identified in our filings with the Securities and Exchange Commission and the securities commissions in British Columbia, Alberta and Ontario. These forward-looking statements speak only as of the date hereof and we assume no obligation to update these forward-looking statements, and readers are cautioned not to place undue reliance on such forward-looking statements.

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