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): **October 26, 2013**

SYNTA PHARMACEUTICALS CORP.

(Exact name of registrant as specified in its charter)

Delaware	**001-33277**	**04-3508648**
(State or other jurisdiction of incorporation)	(Commission File Number)	(IRS Employer Identification No.)

45 Hartwell Avenue
Lexington, MA 02421
(Address of principal executive offices and zip code)

Registrant's telephone number, including area code: **(781) 274-8200**

(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:

☐ 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 October 26, 2013, Synta issued a press release announcing one-year follow-up results from its GALAXY-1 trial of ganetspib in patients with advanced non-small cell lung adenocarcinoma. These results were presented on October 28, 2013 at an oral session at the 15th World Conference of Lung Center in Sydney, Australia. A copy of the press release is filed as Exhibit 99.1 to this Current Report on Form 8-K and is incorporated herein by reference.

ITEM 9.01 Financial Statements and Exhibits.

(d) Exhibits.

Exhibit Number	Description
99.1	Press Release, dated October 26, 2013

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.

SYNTA PHARMACEUTICALS CORP.

Dated: October 29, 2013

/s/ Keith S. Ehrlich
Keith S. Ehrlich
Vice President, Finance and Administration
Chief Financial Officer

EXHIBIT INDEX

Exhibit No.	Description
99.1	Press Release, dated October 26, 2013

Exhibit 99.1

Synta Pharmaceuticals Corp.
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www.syntapharma.com

Synta Announces Positive One-Year Follow-up Results for the GALAXY-1 Trial of Ganetespib in NSCLC at the 2013 World Conference on Lung Cancer

— Results increase confidence in positive outcome for GALAXY-2 Phase 3 Trial —

— Data from GALAXY-2 expected 2014 —

— Webcast and conference call on Monday, October 28 at 8:00 AM ET —

LEXINGTON, MA — October 26, 2013 — Synta Pharmaceuticals Corp. (NASDAQ: SNTA) today announced presentation of results from the GALAXY-1 trial, a global, randomized, multi-center study designed to identify the patients with advanced non-small cell lung adenocarcinoma most likely to benefit from second-line treatment with the Company's lead drug candidate, the Hsp90 inhibitor ganetespib, in combination with docetaxel versus docetaxel alone. The results will be presented Monday, October 28, 2013, at 10:30 AM local time during an oral session at the 15th World Conference on Lung Cancer (WCLC) in Sydney, Australia.

Ganetespib is a second-generation inhibitor of the chaperone protein Hsp90, which is critical for the activation and stability of numerous proteins that drive cancer growth and proliferation. Ganetespib has been studied in over 25 clinical trials and 800 patients to date. In these trials, ganetespib has shown durable objective responses, including CRs (complete responses) and near-CRs, when used alone, as monotherapy administration, in patients with several different types of late-stage cancer, as well as a favorable safety profile, with no evidence of the serious liver or common ocular toxicities seen with other Hsp90 inhibitors.

"Our strategy with the GALAXY lung cancer program has been to use a large, global Phase 2b trial to increase the probability of a positive outcome in Phase 3," said Dr. Safi R. Bahcall, President and CEO, Synta. "We designed the GALAXY-1 trial, which enrolled close to 400 patients in total, to address two primary questions: (1) how to optimize patient selection for Phase 3 and (2) how to reduce the operational risks from heterogeneous populations and treatment patterns that often confound large, pivotal studies. The one-year follow-up results from GALAXY-1 address both these questions, confirming our choices for patient selection and increasing our confidence in a positive outcome for the ongoing GALAXY-2 trial."

"'As the data become more mature, the improvements in progression-free survival and overall survival with ganetespib and docetaxel in the patient subpopulation selected for Phase 3 study are very encouraging," said Dr. Suresh Ramalingam, M.D., Professor, Hematology & Medical Oncology, and Director, Division of Medical Oncology, of the Winship Cancer Institute of Emory University, and a principal investigator of the GALAXY program. "These results bode well for the mirror image GALAXY-2 trial."

Summary of key GALAXY-1 one-year follow-up findings being presented at the WCLC Meeting

A detailed presentation of the one-year follow-up analysis results may be found on the home page of the Company's website, www.syntapharma.com. Key findings include:

- 65% of overall survival (OS) events in the primary adenocarcinoma population have occurred.
    - Targeting at least 70% of OS events for final analysis, expected by early 2014.
- Consistent with previously reported results, encouraging OS improvements were observed in the prespecified chemosensitive patient population (diagnosis of advanced disease greater than 6 months; N=178), together with a lack of activity in the refractory population. These results continue to confirm the selection of the chemosensitive patient population for the GALAXY-2 Phase 3 trial.
    - Overall survival Hazard Ratio in the chemosensitive population was 0.75 (90% CI 0.56, 1.03; 1-sided p=0.065) and 0.72 (90% C.I. 0.52, 0.98; 1-sided p=0.040) in the Cox proportional hazards univariate (unadjusted) and multivariate (adjusted) models, respectively. Median overall survival was 10.7 months for ganetespib and docetaxel versus 7.4 months for docetaxel alone.
- The trial evaluates two other potential biomarkers for use in selecting patients for the Phase 3 trial, elevated LDH (eLDH) and mutant KRAS (mKRAS). The eLDH population continued to show promising PFS and OS improvements, consistent with the hypothesis of HIF-1alpha inhibition by ganetespib, and LDH as a marker for upregulated HIF-1alpha. No evidence for enhanced activity in the mKRAS population was observed.
- Certain differences in enrollment and treatment patterns across centers, which can confound large, global studies, were observed in GALAXY-1. These observations have allowed for further optimization of the GALAXY-2 Phase 3 trial.

"We are encouraged by these results and the implications for Phase 3," said Dr. Vojo Vukovic, Chief Medical Officer, Synta. "In addition to confirmation of the choice of patient selection, the results give us useful information for optimizing the GALAXY-2 operational plan and statistical assumptions."

Safety

The safety profile of patients treated with the combination of ganetespib (G) and docetaxel (D) was generally similar to that of docetaxel alone, consistent with previously reported results. The most common adverse events (AEs), all grades, were neutropenia (44% vs. 45%), diarrhea (49% vs. 16%) and fatigue (34% vs. 24%), for G+D (N=123) vs. D (N=126), respectively. Diarrhea was effectively managed with supportive care; the incidence of grade 3 or 4 diarrhea was 4% (G+D) vs. 0% (D). Fatigue was predominantly grade 1 and grade 2; grade 3 or 4 fatigue was 6% (G+D) vs. 4% (D). The most common grade 3 or 4 AEs were neutropenia (38% vs. 42%), febrile neutropenia (9% vs. 4%), and anemia (8% vs. 2%). The proportions of patients with AEs leading to death were 15% vs. 12%, and AEs leading to treatment discontinuation were 7% vs. 6% for G+D vs. D, respectively. A high incidence of visual impairment has been reported following treatment with certain other Hsp90 inhibitors. Consistent with prior findings with ganetespib, reports of visual impairment in this study were infrequent: 2 (2%) in the G+D arm and 0 (0%) in the D arm. Both cases of visual impairment were transient and were grade 1

or 2. The safety profile of patients in the chemosensitive population being evaluated in Phase 3 (diagnosis > 6 months) was comparable to the profile in the intent-to-treat population.

Identification of mechanisms of cross-resistance to chemotherapy and to ganetespib

Results from preclinical studies conducted by Synta collaborators at the University of Leicester in the UK showed that intact mitochondrial signaling pathways are required for ganetespib to induce cancer cell death. These studies showed that loss of function of the mitochondrial apoptosis pathway, driven by a mutation in caspase 8, can cause resistance both to ganetespib and to chemotherapy. These results may be supportive of differential activity observed in GALAXY-1, in which patients with refractory disease (diagnosis < 6 months), considered unresponsive to first-line chemotherapy, showed no benefit from ganetespib treatment.

Inhibition of tumor growth in preclinical models

Synta also presented results showing that ganetespib reduces tumor invasiveness in preclinical models, including the ability of tumors to spread (metastasis) and grow new blood vessels (angiogenesis). These effects are consistent with observations in GALAXY-1: the appearance of new lesions was substantially reduced in the ganetespib arm as compared to the control arm.

A copy of this poster presentation may be found in the Ganetespib Presentations section of the Company's website, www.syntapharma.com.

Conference Call and Webcast

Synta will host a webcast and conference call at 8:00 AM ET on Monday, October 28, 2013, to discuss these results.

The webcast, which will include both audio and slides, can be accessed by visiting the home page or the Investor Relations section of the Synta Pharmaceuticals website, www.syntapharma.com.

The conference call can be accessed by dialing (877) 407-8035 (U.S.) or (201) 689-8035 (International). Participants can follow along with the prepared slide presentation that is available on the home page of the company's website, www.syntapharma.com. For those unable to join the live call, a replay will be available from 12:00 PM ET on October 28 through 11:59 PM ET on November 4, 2013. To access the replay, please dial (877) 660-6853 (U.S.) or (201) 612-7415 (International) and refer to conference ID 10000731.

About Ganetespib

Ganetespib, an investigational drug candidate, is a selective inhibitor of heat shock protein 90 (Hsp90), a molecular chaperone which controls the folding and activation of a number of client proteins that drive tumor development and progression. Many solid and hematologic tumors are dependent on Hsp90 client proteins including proteins involved in "oncogene addiction" (ALK, HER2, mutant BRAF and EGFR, androgen receptor, estrogen receptor, JAK2); proteins involved in resistance to chemotherapy and radiation therapy (ATR, BCL2, BRCA1/2, CDK1/4, CHK1, survivin, and WEE1); proteins involved in angiogenesis (HIF-1alpha, VEGFR, PDFGR, and VEGF); and proteins involved in metastasis (MET, RAF, AKT, MMPs, HIF-1alpha, and IGF-1R). In preclinical models, inhibition of Hsp90 by ganetespib results in the inactivation,

destabilization, and eventual degradation of these cancer-promoting proteins. Ganetespib is being evaluated in trials in lung cancer, breast cancer, and other tumor types. The most common adverse event seen to date has been transient, mild or moderate diarrhea, which has been manageable with standard supportive care. Information on these trials can be found at www.clinicaltrials.gov. Ganetespib has received Fast Track designation from FDA for second-line treatment of non-small cell lung adenocarcinoma in combination with docetaxel.

About the GALAXY Program

The GALAXY (Ganetespib Assessment in Lung cAncer with docetaXel) program consists of two randomized trials comparing the combination of ganetespib and docetaxel versus docetaxel alone in patients with Stage IIIB/IV NSCLC who have received one prior systemic therapy: a Phase 2b/3 trial (GALAXY-1) to determine the patient population most likely to derive benefit from ganetespib, and a confirmatory Phase 3 trial (GALAXY-2). More information about the GALAXY trials can be found at www.clinicaltrials.gov (NCT01348126 and NCT01798485).

About Lung Cancer

Lung cancer is the leading cause of cancer-related death in the world, accounting for nearly 1.4 million deaths in 2008, according to the World Health Organization. The five-year survival rate for this disease is approximately 16%; over half of people with lung cancer die within one year of being diagnosed. In the U.S., the American Cancer Society estimates that 228,000 cases of lung cancer will be diagnosed in 2013. Non-small cell adenocarcinoma comprises about 40% of all lung cancer.

About Synta Pharmaceuticals

Synta Pharmaceuticals Corp. is a biopharmaceutical company focused on discovering, developing, and commercializing small molecule drugs to extend and enhance the lives of patients with severe medical conditions, including cancer and chronic inflammatory diseases. Synta has a unique chemical compound library, an integrated discovery engine, and a diverse pipeline of clinical- and preclinical-stage drug candidates with distinct mechanisms of action and novel chemical structures. All Synta drug candidates were invented by Synta scientists using our compound library and discovery capabilities. For more information, please visit www.syntapharma.com

Safe Harbor Statement

This media release may contain forward-looking statements about Synta Pharmaceuticals Corp. Such forward-looking statements can be identified by the use of forward-looking terminology such as “will”, “would”, “should”, “expects”, “anticipates”, “intends”, “plans”, “believes”, “may”, “estimates”, “predicts”, “projects”, or similar expressions intended to identify forward-looking statements. Such statements, including statements relating to the implications of the results and observations in the GALAXY-1 trial on the outcome of the GALAXY-2 trial, reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties that could cause actual results to differ materially from those expressed or implied by such forward-looking statements, including those described in “Risk Factors” of our Form 10-K for the year ended December 31, 2012 as filed with the Securities and Exchange

Commission. Synta undertakes no obligation to publicly update forward-looking statements, whether because of new information, future events or otherwise, except as required by law.

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