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): **June 2, 2011**

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 5.07 Submission of Matters to a Vote of Security Holders.

At the Synta Pharmaceuticals Corp. (the "Company") 2011 annual meeting of stockholders held on June 2, 2011, at which a quorum was present, the stockholders of the Company voted on and approved the following matters, which are described in detail in the Company's Proxy Statement filed with the Securities and Exchange Commission on April 29, 2011: (1) to elect Lan Bo Chen, Ph.D. and William S. Reardon, C.P.A. as Class I directors to each serve for a three-year term expiring at the Company's annual meeting of stockholders in 2014, and until their successors have been elected and qualified, or until their earlier death, resignation, retirement or removal ("Proposal 1"); and (2) to ratify the appointment of Ernst & Young LLP as the Company's independent registered public accounting firm for the fiscal year ending December 31, 2011 ("Proposal 2").

A plurality of the votes cast were voted for the elections of Dr. Chen and Mr. Reardon as directors, and the proposal to ratify the appointment of Ernst & Young LLP was approved by a majority of the shares voting affirmatively or negatively. The tabulation of votes with respect to the proposals was as follows:

Proposal 1 — Election of Directors:

	For	Withheld	Broker Non-Votes
Lan Bo Chen, Ph.D.	22,285,743	338,367	12,355,566
William S. Reardon, C.P.A.	22,426,729	197,381	12,355,566

Proposal 2 — Ratification of Independent Registered Public Accounting Firm:

For	Against	Abstain
34,929,749	14,474	35,453

Item 8.01 Other Events.

On June 4, 2011, the Company issued a press release announcing that it presented results at the Annual Meeting of the American Society for Clinical Oncology (ASCO) from a Phase 2 single agent clinical trial of ganetespib in advanced non-small cell lung cancer (NSCLC) that showed promising clinical activity in patients with progressive disease. 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.

On June 6, 2011, the Company issued a press release announcing that it presented results at the Annual Meeting of the American Society for Clinical Oncology (ASCO) from a Phase 2 single agent clinical trial of ganetespib in gastrointestinal stromal tumors (GIST) and a Phase 1 trial of ganetespib in solid tumors evaluating a twice-weekly administration schedule. A copy of the press release is filed as Exhibit 99.2 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 June 4, 2011
99.2	Press Release, dated June 6, 2011

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: June 6, 2011

/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 June 4, 2011
99.2	Press Release, dated June 6, 2011

Exhibit 99.1

Synta Pharmaceuticals Corp.
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Synta Announces Ganetespib Phase 2 Non-small Cell Lung Cancer Trial Results Show Encouraging Single Agent Clinical Activity

- 75% of patients with ALK+ and 62% of patients with KRAS-mutant tumors show tumor shrinkage in target lesions -
- Overall disease control rate of 54% -
- Ganetespib well-tolerated in advanced NSCLC patients -

LEXINGTON, MA — June 4, 2011 — Synta Pharmaceuticals Corp. (NASDAQ: SNTA) today presented results at the Annual Meeting of the American Society for Clinical Oncology (ASCO) from a Phase 2 single agent clinical trial of ganetespib in advanced non-small cell lung cancer (NSCLC) that showed promising clinical activity in patients with progressive disease. Ganetespib is a potent inhibitor of heat shock protein 90 (Hsp90) currently being studied in a broad range of clinical trials with approximately 400 patients treated to date. Ganetespib is structurally unrelated to earlier Hsp90 inhibitors such as 17-AAG.

"The results from this trial demonstrate encouraging single agent clinical activity in heavily pretreated advanced NSCLC patients," said Geoffrey Shapiro, M.D., Ph.D., Dana-Farber Cancer Institute, a co-principal investigator on the Phase 2 trial. "Ganetespib is a potent, differentiated Hsp90 inhibitor, having shown none of the serious hepatic or ocular toxicities seen with other Hsp90 inhibitors. Patients in this trial were particularly difficult to treat, as enrollment required progressive disease. The overall disease control rate of 54% in this broad population of advanced progressive disease is encouraging and indicates single agent clinical activity. In addition, particularly promising activity was seen in patients with certain tumor gene profiles. Six of eight patients with ALK rearrangement experienced tumor shrinkage, including four patients with durable, objective responses. Seven of eight of these patients received ganetespib for 16 weeks or more. Some tumor shrinkage also occurred in patients whose tumors have a KRAS mutation, a particularly therapeutically challenging population."

"The evidence of clear single agent activity combined with a favorable safety profile is exciting," concluded Dr. Shapiro. "These results suggest ganetespib has the potential to provide a new therapeutic option for patients with advanced NSCLC."

"The disease control and anti-tumor activity seen in this trial is encouraging, and compares favorably with disease control rates reported in similar trials, in either the broad patient population or in trials focused on subpopulations with specific gene profiles," said Vojo Vukovic, M.D., Ph.D, Senior Vice President and Chief Medical Officer, Synta Pharmaceuticals. "The favorable safety profile seen in this trial is consistent with results seen in the now over 15 trials initiated to date with ganetespib, with over 400 patients treated. Ganetespib is well tolerated and does not have the serious hepatic or common ocular toxicities reported with other Hsp90 inhibitors."

"We are excited to begin treating patients this month in our Phase 2b/3 trial in combination with docetaxel in NSCLC," continued Dr. Vukovic. "A separate dose-escalation study, conducted at Emory University, has shown docetaxel can be combined safely with ganetespib. In addition, in this trial we have seen evidence that the two drugs together can provide added benefit, as suggested by the complementary mechanisms of action and evidence from the preclinical models. A number of patients who experienced mixed responses with single agent ganetespib — decrease of target tumor lesions, but eventual growth of new lesions — showed continued decrease of target lesions as well as decrease in new lesions when docetaxel was added."

Results

At the time of analysis, 76 patients were evaluable, having received at least one dose of ganetespib and one follow-up scan. All tumor size measurements are per RECIST criteria. Disease control is defined as CR+PR+SD at first scan (week 8).

Of the 76 evaluable patients, 14 were in cohort A (EGFR mutation), 13 were in cohort B (KRAS mutation), and 48 were in cohorts C and D (neither EGFR nor KRAS mutation). 23 of 48 evaluable patients in cohorts C and D were subsequently tested for ALK translocation or rearrangement, in up to three separate assays.

Of the 23 patients tested for ALK translocation or rearrangement (ALK+), 8 patients were ALK+ in at least one assay. Six of these eight patients (75%) showed tumor shrinkage in target lesions, one patient showed no change in tumor size, and one patient achieved stable disease (tumor growth <20%). The disease control rate in this population was 7/8 (88%), and the objective response rate (CR+PR) was 4/8 (50%).

In cohorts C and D, wild type for EGFR and KRAS, tumor shrinkage in target lesions was seen in 15/48 (31%). The stable disease rate per RECIST was 24/48 (50%), the objective response rate was 4/48 (8%), and the disease control rate was 28/48 (58%).

Of the 13 evaluable patients in cohort B, with KRAS mutation, eight patients experienced tumor shrinkage in target lesions (62%). The stable disease rate per RECIST was 5/13 (38%). The overall disease control rate was 38%.

Of the 14 evaluable patients in Cohort A, with EGFR mutation, five patients experienced tumor shrinkage (36%). The stable disease rate per RECIST was 7/14 (50%). The overall disease control rate was 50%.

In total, of the 76 evaluable patients, the overall disease control rate at 8 weeks was 54% and the overall objective response rate was 5.3%.

The most common adverse events were diarrhea, fatigue and nausea. In a total of 96 patients treated, the most common adverse events grade 3 or higher occurring in more than 5% of patients were dyspnoea in 12 patients (12.5%), fatigue in 12 patients (12.5%) , diarrhea in 9 patients (9.4%) and hyponatraemia in 5 patients (5.2%). The most common adverse events were diarrhea in 75 patients (78.1%), fatigue in 48 patients (50%), nausea in 37 patients (38.5%) and decreased appetite in 32 patients (33.3%).

About the Phase 2 NSCLC Trial

The Phase 2 NSCLC trial was designed to enroll patients with advanced, metastatic disease (Stage IIIB and IV) who had failed prior therapy. Patients were grouped into one of three cohorts based on the genetic profile of their cancer — (A) EGFR mutation, (B) KRAS mutation, (C) neither EGFR nor KRAS mutation — and were treated with ganetespib, as a monotherapy, once-weekly at a dose of 200 mg/m^2. Based on encouraging signs of activity, an amendment announced in September 2010 expanded the trial with two additional patient cohorts, including a cohort which allowed for combination treatment with ganetespib and docetaxel.

About Non-small Cell Lung Cancer

Lung cancer is the leading cause of cancer-related mortality in the United States, with over 225,000 new cases and 157,000 deaths estimated in 2010. The five year survival rate for advanced-staged lung cancer is less than 5%. Approximately 85% of all lung cancers are classified as non-small cell.

About Ganetespib

Ganetespib (formerly STA-9090) is a potent, synthetic, small-molecule inhibitor of heat shock protein 90 (Hsp90). Hsp90 is a molecular chaperone required for the proper folding and activation of many cancer-promoting proteins, and is recognized as a key facilitator of cancer cell growth and survival. In preclinical experiments, ganetespib has shown activity in multiple tumor models both as a single agent and in combination with certain widely used cancer agents. Ganetespib is currently being evaluated in a broad range of cancer clinical trials. In these trials, ganetespib has shown clinical activity in heavily pretreated patients and has been well tolerated to date with no evidence of severe liver or common ocular toxicities seen with other Hsp90 inhibitors. The most common adverse event seen to date has been diarrhea, which has been manageable with standard supportive care. Information on clinical trials with ganetespib can be found at www.clinicaltrials.gov.

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 timing, developments and progress of our clinical and preclinical programs, 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, 2010 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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Exhibit 99.2

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Synta Announces Presentation of Additional Ganetespib Results at ASCO

LEXINGTON, MA — June 6, 2011 — Synta Pharmaceuticals Corp. (NASDAQ: SNTA) today presented results at the Annual Meeting of the American Society for Clinical Oncology (ASCO) from a Phase 2 single agent clinical trial of ganetespib in gastrointestinal stromal tumors (GIST) and a Phase 1 trial of ganetespib in solid tumors evaluating a twice-weekly administration schedule. Ganetespib is a potent inhibitor of heat shock protein 90 (Hsp90) currently being studied in a broad range of clinical trials with approximately 400 patients treated to date. Ganetespib is structurally unrelated to earlier Hsp90 inhibitors such as 17-AAG.

"Ganetespib results presented this week at ASCO support a strategy of parallel approach to development — both single agent in targeted, biomarker-defined subpopulations, as well as more broadly, in combination with certain other anti-cancer agents," said Safi Bahcall, Ph.D., President and Chief Executive Officer, Synta Pharmaceuticals. "The results reported Saturday demonstrated compelling proof of clinical activity in lung cancer patients with ALK+ tumors. The results reported today show that ganetespib has broad potential, with activity seen in breast cancer, melanoma, as well as GIST. These results support our program of working closely with leading investigators to evaluate the potential of ganetespib in a broad range of tumor types."

Ganetespib has been studied in 15 trials across multiple cancer types. Announcements regarding additional trials and data presentations are expected later this month and the second half of this year.

Phase 2 Results of Ganetespib in GIST

"Few therapeutic options are available to patients with advanced gastrointestinal tumors following treatment with the standard of care tyrosine-kinase inhibitor drugs, imatinib and sunitinib. Ganetespib showed activity in approximately half of GIST patients evaluated with PET imaging in this Phase 2 trial, including a 20% decrease in tumor metabolic activity," said George Demetri, M.D., Principal Investigator of the trial from the Dana-Farber Cancer Institute. "Analysis of tumor biopsies and PET imaging data suggest that optimizing the administration schedule of ganetespib could potentially increase KIT suppression and improve the clinical activity of ganetespib in GIST patients. Ganetespib was well-tolerated in this patient population, with the most common adverse events being Grade 1 and 2 diarrhea which was generally manageable with supportive care."

At the time of the analysis, 23 patients out of 26 patients in the intent to treat (ITT) population were evaluable. Patients enrolled in the ITT population had experienced a median of five prior treatments.

58% of patients (7 of 12 patients evaluated) reported a greater than 20% decrease in Standardized Uptake Value (SUV) as measured by positron emission tomography (PET) imaging. 22% of evaluable patients experienced a clinical benefit at 16 weeks (Partial

Response + Complete Response + Stable Disease). There were no objective responses. One patient was non-evaluable.

The most common adverse events reported in more than 5% of patients were blood alkaline phosphatase increase (11.5%), anaemia (7.7%), and diarrhea (7.7%). The most frequent reported adverse events occurring in more than 40% of patients were diarrhea (84.6%), fatigue (53.8%) and nausea (46.2%).

About the Phase 2 GIST Trial

The non-randomized, open-label, multi-center Phase 2 study was designed to characterize the efficacy and safety of ganetespib in patients with metastatic or unresectable GIST following failure of systemic treatment with imatinib (Gleevec®) and sunitinib (Sutent®). Patients were stratified according to whether or not they have been exposed to other Hsp90 inhibitors, and ganetespib was administered as a single agent on a once-weekly intravenous dosing schedule. Patients tolerating ganetespib could continue on treatment until disease progression. Patients were assessed for clinical benefit rate per RECIST. The impact of treatment with ganetespib on certain biomarkers was also evaluated.

About GIST

A gastrointestinal stromal tumor (GIST) is a type of cancer that occurs in the gastrointestinal (GI or digestive) tract, including the esophagus, stomach, gallbladder, liver, small intestine, colon, and rectum. The American Cancer Society estimates 4,500 to 6,000 GIST cases are diagnosed each year in the United States.

Phase 1 Results of Ganetespib — Twice-Weekly Administration

"The Phase 1 twice-weekly schedule trial results demonstrate that ganetespib is well-tolerated and has promising clinical activity at dose levels up to 144 mg/m^2," said Vojo Vukovic, M.D., Ph.D., Senior Vice President and Chief Medical Officer, Synta Pharmaceuticals. "Encouragingly, objective tumor responses were seen in a patient with triple negative breast cancer and a patient with melanoma. In addition, 15 patients out of 41 patients who were assessable for response achieved stable disease. These results suggest that twice weekly treatment with ganetespib could provide a potential single agent strategy for treating cancers driven by oncoproteins and pathways which require more frequent Hsp90 inhibition in order to show anti-cancer activity. The trial is ongoing and the maximum tolerated dose has not yet been identified."

Triple negative breast cancer is any breast cancer that does not express the genes for estrogen receptor (ER), progesterone receptor (PR) or Her2/neu. This form of breast cancer is characterized as more aggressive and less responsive to standard treatment and is generally associated with a poor prognosis.

Results

A total of 54 patients have been enrolled in the trial; 36 at doses ranging from 2-50 mg/m^2, 11 at 100-120 mg/m^2 and 7 at 144 mg/m^2.

The most frequent Grade 3 or greater adverse events occurring in more than 5% of patients were diarrhea (13%), alkaline phosphatase increase (7%), AST increase (6%) and hypophosphatemia (6%). The most common adverse events occurring in greater than 20% of patients were diarrhea (50%), fatigue (50%), nausea (39%), anemia (32%), headache (26%), constipation (24%), vomiting (22%), abdominal pain (20%) and decreased appetite (20%).

Three adverse events with an outcome of death were reported, one at the 10 mg/m^2 dose (dyspnea and rales, possibly drug related), and two at 25 mg/m^2 (pulmonary embolism and progressive disease, neither drug related).

41 of the 54 patients were assessable for response as of March 25, 2011. Two partial responses were reported (melanoma, triple negative breast cancer). 15 patients achieved stable disease. 13 patient discontinued treatment prior to the week 8 response assessment.

Pharmacokinetics; ganetespib exposures are directly proportional to dose with no drug accumulation observed upon multiple dosing. Ganetespib exhibits biphasic pharmacokinetics and the concentrations rise rapidly during infusion and decline by a factor of 10 fold within 1 hour of infusion termination and 100 fold within 8-10 hours.

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