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 8, 2007

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 1.01 Entry into a Material Definitive Agreement.

Collaborative Development, Commercialization and License Agreement

On October 8, 2007, Synta Pharmaceuticals Corp. ("**Synta**") entered into a Collaborative Development, Commercialization and License Agreement (the "**Collaboration Agreement**") with GlaxoSmithKline ("**GSK**"), for the joint development and commercialization of STA-4783, a first-in-class, small-molecule, oxidative stress inducer that is entering Phase 3 clinical development for the treatment of metastatic melanoma. The agreement is subject to antitrust clearance by the U.S. government under the Hart-Scott-Rodino Act.

Under the terms of the Collaboration Agreement, Synta and GSK will jointly develop and commercialize STA-4783 in the U.S., and GSK will have exclusive responsibility to develop STA-4783 outside the U.S. Synta will take the lead role and fund activities related to seeking FDA approval of STA-4783 for the treatment of metastatic melanoma. Synta will also fund early clinical development of STA-4783 in two other cancer indications. Synta will be responsible for a modest proportion of all other worldwide costs associated with the development of STA-4783. Synta will receive 40-50% of the operating income derived from net sales of STA-4783 in the U.S. in any calendar year, with the percentage increasing as the level of annual net sales increases. Synta will also receive double-digit tiered royalties on net sales outside of the U.S.

Synta will receive an upfront cash payment of $80 million. Synta will also be eligible to receive potential milestone payments from GSK of up to $135 million for events leading to approval of STA-4783 in metastatic melanoma, comprising milestones for operational progress and the achievement of certain clinical success criteria. In addition, Synta is eligible to receive milestones of up to $450 million from development in additional indications; and up to $300 million in potential commercial milestone payments based on achieving certain net sales thresholds. On or before occurrence of specific events and with certain economic consequences, Synta has the right to cease to participate in further development of STA-4783 for any indication other than metastatic melanoma and/or in the commercialization of STA-4783 by providing GSK with written notice. Including the equity purchases described below, the total amount of potential payments to Synta under the Collaboration Agreement is $1.01 billion.

Under the Collaboration Agreement, GSK may, subject to Synta's agreement, purchase, up to $45 million of Synta's common stock in two separate tranches upon the future achievement of specified development and regulatory milestones. In the first tranche, GSK would be obligated at Synta's sole discretion to purchase $25 million of Synta's common stock. In the second tranche, which is subject to agreement by both GSK and Synta, GSK would purchase $20 million of Synta's common stock. The per share purchase price under each tranche is at a specified premium.

GSK may terminate the Collaboration Agreement upon not less than three months' written notice at any time prior to the date of first commercial sale of a STA-4783 product and not less than six months' written notice at any time on and after such date, in which case GSK may be obligated in certain circumstances to make additional payments to Synta.

A copy of the press release announcing the Collaboration Agreement is attached to this Current Report on Form 8-K as Exhibit 99.1.

Item 3.02 Unregistered Sales of Equity Securities.

The information set forth in the fourth paragraph in Item 1.01 above with respect to GSK's equity purchase rights is incorporated herein by reference.

If any shares are issued to GSK pursuant to the Collaboration Agreement, Synta would expect to issue such shares in reliance on the exemption from registration under the Securities Act of 1933, as amended, set forth in Section 4(2) promulgated thereunder relative to sales by an issuer not involving a public offering.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit Number	Description
99.1	Press Release dated October 10, 2007.

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 11, 2007

/s/ Safi R. Bahcall
Safi R. Bahcall, Ph.D.
President and Chief Executive Officer

Exhibit 99.1

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www.syntapharma.com

GlaxoSmithKline and Synta Pharmaceuticals Announce Development and Commercialization Collaboration for STA-4783 in Oncology

LONDON, UK and LEXINGTON, MA – October 10, 2007 – GlaxoSmithKline (GSK) (LSE: GSK; NYSE: GSK) and Synta Pharmaceuticals Corp. (NASDAQ: SNTA) today announced the execution of a global collaboration agreement for the joint development and commercialization of STA-4783, a first-in-class, small-molecule, oxidative stress inducer that is entering Phase 3 clinical development for the treatment of metastatic melanoma.

Under the terms of the agreement, the companies will share responsibility for development and commercialization of STA-4783 in the U.S. and GSK will have exclusive responsibility for development and commercialization of STA-4783 outside the U.S. Synta will receive an upfront cash payment of $80 million. Synta will also be eligible to receive potential milestone payments of up to $135 million for events leading to approval of STA-4783 in metastatic melanoma, further development and regulatory milestones of up to $450 million across various indications and up to $300 million in potential commercial milestone payments based on achieving certain net sales thresholds. Synta will continue to fund all development for metastatic melanoma in the U.S. and the companies will share responsibility and costs for development of STA-4783 in other indications. Synta and GSK will jointly commercialize STA-4783 in the U.S. with Synta receiving a tiered profit share based on levels of annual net sales. The parties will share development costs outside of the U.S. and Synta will receive double-digit tiered royalties on net sales. In addition, GSK may, subject to Synta's agreement, purchase, up to $45 million of Synta's common stock upon the future achievement of specified development and regulatory milestones.

The agreement is subject to antitrust clearance by the U.S. government under the Hart-Scott-Rodino Act. Common stock purchases may be subject to approval of Synta's shareholders if required under the rules and regulations of The Nasdaq Stock Market.

“GSK is an established global leader in the pharmaceutical industry with a strong commitment to oncology as a franchise,” said Safi Bahcall, Ph.D., President and Chief Executive Officer, Synta. “GSK and Synta have a shared vision for the development and commercialization of STA-4783 in a range of potential indications, beginning with metastatic melanoma where a Phase 2b study with STA-4783 in combination with paclitaxel has shown doubling of progression free survival compared to paclitaxel alone. We are confident that this agreement will allow STA-4783 to achieve its full potential as a novel therapeutic option for treating cancer.”

“This agreement confirms GSK’s growing status as a world leader in the development of new oncology medicines for use in the treatment, prevention and supportive care of cancer patients. It further strengthens our late stage oncology pipeline, which currently includes ten Phase 3 programs, and also demonstrates our commitment to identifying compounds that have the potential to deliver real benefit to patients,” said Moncef Slaoui, Chairman R&D, GSK. “The data we have seen from the Phase 2 trials conducted by Synta have given us confidence in the potential of STA-4783 as a novel means of treating metastatic melanoma, a disease for which there is high unmet medical need.”

“We are pleased to establish this alliance with GSK, a company with a long history of success in launching and marketing important and innovative new drugs,” said Martin Williams, Senior Vice President and Chief Business Officer, Synta. “GSK shares our enthusiasm and commitment to developing this first-in-class compound. Together we expect to bring STA-4783 more quickly to more patients and to build a U.S. sales and marketing organization at Synta in collaboration with a world leader.”

Conference Call

Synta Pharmaceuticals management will conduct a conference call at 10:30 a.m. (ET) today to discuss the collaboration. The conference call will be webcast live over the Internet and can be accessed by logging on to the "Investors" section of the Synta Pharmaceuticals website, www.syntapharma.com, prior to the event.

The call also can be accessed by dialing (877) 407-8035 or (201) 689-8035 prior to the start of the call. For those unable to join the live conference call, a replay will be available from 2:00 p.m. (ET) today through midnight (ET) on October 17. To access the replay, dial (877) 660-6853

or (201) 612-7415 and refer to both account number 286 and conference ID 258153. The webcast also will be archived on the company's website.

About STA-4783

STA-4783 is a novel, injectable, investigational drug candidate that kills cancer cells by elevating oxidative stress levels beyond a breaking point, triggering programmed cell death. In preclinical models STA-4783 showed potent killing of a broad range of cancer cell types at high doses, and an ability to strongly enhance the efficacy of certain chemotherapy agents, with minimal additional toxicity, at moderate doses.

In a recent 21-center, double-blind, randomized, controlled Phase 2b clinical trial in 81 patients with metastatic melanoma, STA-4783 in combination with paclitaxel met the primary endpoint - doubling the median time patients survived without their disease progressing - compared to paclitaxel alone ($p=0.035$). STA-4783 is now entering a pivotal, confirmatory Phase 3 clinical trial in metastatic melanoma. Phase 2 trials in other indications, and in combination with other agents, are planned. STA-4783 has received Fast Track designation from the FDA for development in metastatic melanoma.

For more details on the Phase 2b trial please visit:
http://www.syntapharma.com/Documents/STA4783_Overview.pdf.

About Metastatic Melanoma

Melanoma, the most deadly form of skin cancer, arises from melanocytes, the pigment-producing cells of the skin. According to the American Cancer Society, melanoma accounts for approximately five percent of all skin cancers but causes about 75% of all skin cancer-related deaths. An estimated 60,000 people will be diagnosed and nearly 8,200 people will die from melanoma this year in the U.S. alone. If diagnosed and surgically removed while localized in the outermost skin layer, melanoma is potentially curable; however, for patients with metastatic disease the prognosis is poor, with limited available treatments and an expected survival of only six to nine months.

The incidence of melanoma has increased more rapidly than any other cancer during the past ten years. The FDA has not approved a novel, small molecule drug for the treatment of metastatic melanoma in over 30 years.

About Oxidative Stress and Apoptosis

Oxidative stress in cells is the presence of elevated levels of reactive oxygen species (ROS) such as oxygen radicals and hydrogen peroxide. ROS can be generated by many stimuli, including ordinary cell metabolism, exposure to heat or radiation, or attack by bacteria or viruses. Normal cells have a strong anti-oxidant capacity that regulates the levels of ROS. Cancer cells, however, typically operate at a much higher level of oxidative stress than normal cells and have a greatly diminished anti-oxidant capacity. This diminished capacity to clear ROS leaves them vulnerable to further increases in oxidative stress. When ROS levels exceed a critical threshold, continued survival of the cell becomes unsustainable and programmed cell death (apoptosis) is initiated.

In a series of in vitro and in vivo experiments, STA-4783 has been shown to rapidly cause a dramatic increase in the level of ROS inside cancer cells and induce apoptosis. At similar doses and exposure, STA-4783 has little to no impact on non-cancer cells.

Elevated oxidative stress induces apoptosis through the mitochondrial pathway. In addition to potent induction of oxidative stress and apoptosis in cancer cells as a single agent, STA-4783 has been shown to enhance the activity of other anti-cancer agents that act through the mitochondrial pathway. These include commonly used chemotherapies such as paclitaxel and docetaxel.

Oxidative stress induction represents a novel anti-cancer strategy – a novel way of differentiating, and selectively killing, cancer cells vs. normal cells.

About GSK

GlaxoSmithKline, one of the world's leading research-based pharmaceutical and healthcare companies, is committed to improving the quality of human life by enabling people to do more, feel better and live longer. For information about GSK visit the company website at www.GSK.com.

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 discovered and developed internally. For more information, please see www.syntapharma.com.

GlaxoSmithKline Forward-Looking Statement

Under the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995, GSK cautions investors that any forward-looking statements or projections made by GSK, including those made in this announcement, are subject to risks and uncertainties that may cause actual results to differ materially from those projected. Factors that may affect GSK's operations are described under 'Risk Factors' in the Business and Prospects in GSK's Annual Report on Form 20-F for 2006.

Synta Safe Harbor Statement

This media release contains forward-looking statements including statements relating to the potential value of payments that may be received pursuant to the agreement with GSK, the potential equity investments by GSK, and the anticipated progress and development of STA-4783, including the timing of clinical trials. 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, 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 under "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2006 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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