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 23, 2008

ZIOPHARM Oncology, Inc.
(Exact Name of Registrant as Specified in its Charter)

Delaware	0-32353	84-1475642
(State or Other Jurisdiction of Incorporation)	(Commission File Number)	(IRS Employer Identification No.)

1180 Avenue of the Americas, 19th Floor
New York, NY 10036
(Address of Principal Executive Offices) (Zip Code)

(646) 214-0700
(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:

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

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

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

o 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 23, 2008, ZIOPHARM Oncology, Inc. issued the press release attached hereto as Exhibit 99.1, which is incorporated herein by reference.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

99.1 Press Release dated October 23, 2008.

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.

ZIOPHARM Oncology, Inc.:
(Registrant)

Date: October 23, 2008

By: /s/ Richard E. Bagley

Name: Richard E. Bagley
Title: President and Chief Operating Officer

Exhibit 99.1

ZIOPHARM Oncology, Inc.

ZIOPHARM Presents Darinaparsin Molecular Mechanism of Action and Preliminary Oral Administration Phase I Clinical Data at the EORTC-NCI-AACR Symposium

Darinaparsin has unique molecular mechanism and is active orally

Geneva, Switzerland - October 23, 2008 - ZIOPHARM Oncology, Inc. (Nasdaq: ZIOP), announced today that it presented darinaparsin (ZIO-101) mechanism of action data as well as preliminary data from Phase I studies with oral administration at the 20th EORTC-NCI-AACR Symposium on Molecular Targets and Cancer Therapeutics in Geneva, Switzerland.

Data from preclinical studies on the molecular mechanism of action of darinaparsin were presented demonstrating that darinaparsin is highly active in a series of cell lines including those resistant to inorganic arsenic, or arsenic trioxide (ATO). In contrast to ATO, darinaparsin is not a substrate for the multi-drug resistance protein complex MRP1/ABCC1 and is therefore not exported as efficiently from cells resulting in a greater intracellular accumulation. This accumulation correlates with more potent induction of pathways involved in oxidative stress and programmed cell death in cells treated with darinaparsin than in those treated with ATO. Comparative data presented on the effect of these two compounds on various signal transduction pathways leading to apoptosis indicate that darinaparsin does trigger apoptosis through pathways that do not completely overlap with ATO and explain the more potent cytotoxic activity of darinaparsin. Specifically, darinaparsin is JNK dependent, but not MAP3K dependent. In addition, darinaparsin induces cell death despite overexpression of MRP1/ABCC1.

In Phase I studies, a total of 32 patients with advanced cancers have been treated with various orally administered dose and treatment schedules. Safety, activity and bioavailability have been evaluated. To date, all patients are evaluable for safety and 17 for clinical activity with five patients still being treated. Of the 17 patients evaluable for activity, 10 patients (59%) have stable disease for at least two months of treatment. Oral darinaparsin was well tolerated with manageable side effects of nausea and vomiting. Further enrollment and dose escalation is ongoing. The serum level obtained by oral administration compared to intravenous administration (IV) showed a very favorable bioavailability and very similar pharmacokinetics. The oral studies will be presented when complete at a scientific meeting in 2009.

“These preliminary safety, activity and bioavailability results with orally administered darinaparsin are particularly encouraging in light of the favorable responses already obtained in a Phase II study of the IV formulation in lymphomas,” commented Jonathan Lewis, MD, PhD, and Chief Executive and Medical Officer of ZIOPHARM. “These results strongly support the future study of the oral formulation. In addition, these preclinical data help elucidate the mechanism of action of this molecule.”

ZIOPHARM Presents Darinaparsin Molecular Mechanism of Action and Preliminary Oral Administration Phase I Clinical Data at the EORTC-NCI-AACR Symposium

About ZIOPHARM Oncology, Inc.:
ZIOPHARM Oncology is a biopharmaceutical company engaged in the development and commercialization of a diverse portfolio of cancer drugs. The Company is currently focused on three clinical programs.

Palifosfamide (ZIO-201) is a novel molecule that is the functional active metabolite of ifosfamide, a standard of care for treating sarcoma, testicular and other cancers. Palifosfamide delivers only the cancer fighting component of ifosfamide. It is expected to overcome the resistance of ifosfamide and cyclophosphamide in certain cancers. It does not have the toxic metabolites of ifosfamide that cause the debilitating side effects of “fuzzy brain” (encephalopathy) and severe bladder inflammation. Intravenous (IV) palifosfamide is currently in a Phase II randomized trial to treat soft tissue sarcoma. An oral form of palifosfamide has been developed preclinically and is expected to enter clinical study in 2009.

Indibulin (ZIO-301) is a novel, oral tubulin binding agent that targets both mitosis and cancer cell migration. Indibulin is expected to have several potential benefits, including oral dosing, application in multi-drug resistant tumors, no neuropathy and minimal overall toxicity**.** Indibulin has shown early activity in Phase I study as a single agent in many types of solid tumors. Indibulin is also currently in the Phase I portion of Phase I/II trials in combination with Tarceva® and Xeloda®. Preclinical study continues with both dose density and metronomic administration.

Darinaparsin (ZIO-101) is a novel organic arsenic being developed for the treatment of various hematologic and solid cancers. Preclinical and Phase I and II results to date demonstrate that darinaparsin is much less toxic than other forms of arsenic. Intravenous darinaparsin continues to be studied in a Phase II hematology trial with favorably treatment activity in certain lymphomas and in Phase I study with oral administration. Darinaparsin has been well tolerated in all trials to date.

ZIOPHARM’s operations are located in Boston, MA with an executive office in New York. Further information about ZIOPHARM may be found at www.ziopharm.com.

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Forward-Looking Safe Harbor Statement:
This press release contains forward-looking statements for ZIOPHARM Oncology, Inc. that involve risks and uncertainties that could cause the Company's actual results to differ materially from the anticipated results and expectations expressed in these forward-looking statements. These statements are based on current expectations, forecasts and assumptions that are subject to risks and uncertainties, which could cause actual outcomes and results to differ materially from these statements. Among other things, there can be no assurance that any of the Company's development efforts relating to its product candidates will be successful, or such product candidates will be successfully commercialized. Other risks that affect forward-looking information contained in this press release include the possibility of being unable to obtain regulatory approval of the Company's product candidates, the risk that the results of clinical trials may not support the Company's claims, and risks related to the Company's ability to protect its intellectual property and its reliance on third parties to develop its product candidates. The Company assumes no obligation to update these forward-looking statements, except as required by law.

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