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Vion Pharmaceuticals Provides Update for Clinical and Preclinical Programs

Company Also Reports on Initial Commercialization Efforts for Cloretazine®

NEW HAVEN, CT, May 31, 2006 - VION PHARMACEUTICALS, INC. (NASDAQ CAPITAL MARKET: VION) today provided an update on its clinical and preclinical programs, and its initial commercialization efforts for Cloretazine® (VNP40101M).

Conference Call Notification

Vion will host a conference call today at 8:45 a.m. eastern time. The conference can be accessed by dialing (800) 510-0178 in the U.S. ((617) 614-3450 for international callers), pass code 56955938 at least fifteen minutes before the start of the call. The conference call will also be webcast simultaneously and will be accessible on Vion's website, www.vionpharm.com. A replay of the call will be available at (888) 286-8010 in the U.S. ((617) 801-6888 for international callers), pass code 72021198 through June 26, 2006.

Cloretazine® (VNP40101M) in Acute Myelogenous Leukemia

Vion's lead anticancer agent, the novel alkylating agent Cloretazine® (VNP40101M), is now being evaluated in two pivotal trials in acute myelogenous (AML). Last week, the Company announced that it had initiated a pivotal Phase II trial of single agent Cloretazine® (VNP40101M) in elderly patients with *de novo* poor-risk AML. This trial is in addition to the ongoing Phase III study of Cloretazine® (VNP40101M) in combination with Ara-C for patients with relapsed AML.

Phase III Trial in Patients with Relapsed AML

The Company's randomized placebo-controlled Phase III trial (CLI-037) of Cloretazine® (VNP40101M) is being conducted in relapsed AML, in patients of any age with initial remissions of at least three months and not more than twenty-four months. The trial randomizes patients in a 2:1 fashion (experimental arm : control arm). Patients are also stratified according to (x) age (greater than or less than 60 years of age) and (y) the length of their first remission (greater than or less than one year). Patients receive either (i) 1.5 grams

of Ara-C in a continuous infusion over three days and 600 mg/m^2 of Cloretazine® (VNP40101M) or (ii) 1.5 grams of Ara-C in a continuous infusion over three days and placebo. Patients may receive a second course of induction therapy if their disease is improving but they have not achieved a complete remission. If they achieve remission, patients may also receive consolidation therapy. The primary endpoint for this study is the complete remission rate including CRp (a complete remission with incomplete recovery of platelet count); secondary endpoints are time-to-progression, duration of response, overall survival and toxicity. The study is designed to demonstrate with sufficient power a 15% higher complete remission rate in the experimental arm over the control arm (i.e., a 45% remission rate in the experimental arm versus 30% in the control arm).

The Company reported that there are over 140 patients enrolled on this Phase III study, which is now open in 65 sites in North America and Europe. An interim analysis is planned when 210 patients have been evaluated for response. This accrual milestone is expected to be reached in the second half of 2006. The data will be made available to the Data Safety and Monitoring Board as soon as possible thereafter. The trial is designed to accrue 420 patients in total, which the Company expects to be completed in 2007.

Phase II Trial in Elderly Patients with De Novo Poor-Risk AML

Last week, the Company initiated a pivotal Phase II trial (CLI-043) in elderly patients with *de novo* poor-risk AML. This trial is expected to be conducted in approximately 20 sites in North America and Europe. Full accrual of the targeted 85 patients is expected to take up to one year.

De novo AML has not resulted from a prior documented myelodysplastic syndrome nor from a previous exposure to chemotherapy or radiotherapy. Elderly poor-risk AML is associated with certain risk factors in an older patient that make it unlikely that the patient will respond to or tolerate standard induction therapy. In CLI-043, patients are required to be over the age of 60 with previously untreated *de novo* AML and at least one additional risk factor from the following list: (i) ECOG performance status of 2 or greater; (ii) unfavorable cytogenetics; and (iii) significant cardiac, pulmonary, or hepatic dysfunction such that patients could not receive standard induction therapy. Alternatively, patients must be 70 years of age or older with previously untreated *de novo* AML and without favorable cytogenetics.

Ms. Cahill stated, “We have designed CLI-043 to confirm the data from our previous Phase II trial (CLI-033) in a prospectively defined elderly poor-risk AML patient population. We are confident that the patient inclusion criteria for this new trial define the unmet medical need patient population in AML.”

Patients will receive 600 mg/m^2 of Cloretazine® (VNP40101M) in a 30-60 minute infusion and may receive a second course of induction therapy if their disease is improving but they have not achieved a remission. Patients who respond will receive consolidation with Ara-C.

The primary endpoint for the trial is the complete remission rate including CRp and the secondary endpoints are durability of response, progression-free survival and overall survival. The trial is designed in two stages. If 8 complete remissions are documented in the first 42 patients enrolled, the study will proceed to the second stage.

In conjunction with this trial, Vion will also conduct additional correlative studies and collect health resource utilization data. The correlative studies include molecular analysis of AML

cells, levels of a drug resistance enzyme, and appropriate pharmacokinetic data of Cloretazine® (VNP40101M).

The Company will be presenting data from the recently completed CLI-033 on Cloretazine® (VNP40101M) in *de novo* AML in a poster discussion session at the Annual Meeting of the American Society of Clinical Oncology (ASCO) in Atlanta, Georgia on June 4, 2006.

Cloretazine® (VNP40101M) in Other Indications

In addition to its work in AML, the Company has been conducting trials of Cloretazine® (VNP40101M) in small cell lung cancer (Phase II) and chronic lymphocytic leukemia (CLL) (Phase I/II), as well as a trial (Phase I) of Cloretazine® (VNP40101M) in combination with temozolomide in advanced hematologic malignancies.

The Company announced that anti-tumor activity had been reported in the Phase II trial in small cell lung cancer. Although no significant organ toxicity has been reported, the protocol is being amended to reduce the dose of Cloretazine® (VNP40101M) so that patients may be able to receive multiple cycles without significant hematologic toxicity.

The Company announced that it was closing its trial in chronic lymphocytic leukemia in order to focus on other ongoing trials.

Ms. Cahill remarked, “While early responses are not predictive of final results, we have observed some responses to Cloretazine® (VNP40101M) in relapsed and resistant small cell lung cancer. We are adjusting the dose of Cloretazine® (VNP40101M) on that trial based on toxicities seen to date.” She added, “We made the decision to close the CLL trial at this time in order to focus our efforts on small cell lung cancer the AML registration pathway.”

Ms. Cahill concluded, “We have both investigator-initiated and Vion-sponsored studies underway in solid tumors. We look forward to preliminary data from the small cell lung cancer trial by the end of the year. Also, given the activity of alkylators in brain tumors and preclinical and clinical data of Cloretazine® (VNP40101M) to date, we will continue our work with brain tumor specialists to decide on future trials.”

Triapine®

The Company’s second clinical anticancer compound, Triapine®, is a potent inhibitor of ribonucleotide reductase, an enzyme necessary for DNA synthesis and repair. Triapine® is being evaluated in several clinical trials sponsored by the National Cancer Institute (NCI). Since commencement of the NCI’s Triapine® program, 13 clinical studies have been conducted including 5 studies that are ongoing. In addition, up to 5 studies are currently planned to commence in the coming months, including a study of an oral formulation and Triapine® as a radio-sensitizer.

The Company has decided not to conduct its own study of oral Triapine® at this time, to conserve resources and to focus its efforts on the registration and life cycle extension of Cloretazine® (VNP40101M).

Ms. Cahill noted, “Our Triapine® program with the NCI continues. Data from the first set of trials are expected to be presented this year. We expect new trials to start shortly, including a trial of oral Triapine®, a Phase II trial of Triapine in combination with fludarabine in hematologic

malignancies, and trials of Triapine® in combination with radiation. We continue to search for a registration pathway for Triapine®, and are pleased to be working with the NCI in this regard."

VNP40541

The Company plans to file an Investigational New Drug (IND) application for VNP40541 in June. VNP40541 is a hypoxia-selective compound that releases the same active agent as Cloretazine® (VNP40101M) in hypoxic (low-oxygen) conditions. Preclinical data on this compound was presented at the American Association of Cancer Research (AACR) Annual Meetings in 2005 and 2006. A Phase I clinical trial of VNP40541 is planned to commence in the second half of 2006.

Initial Commercialization Efforts for Cloretazine® (VNP40101M)

The Company also reported on its initial efforts to prepare for the commercialization of Cloretazine® (VNP40101M) if and when its pivotal trials are successfully completed and regulatory approval is obtained.

With respect to validation of the manufacturing process for Cloretazine® (VNP40101M), the Company has completed the manufacturing of three consecutive lots of active pharmaceutical ingredient (API) and is working with its contract manufacturer to finalize the related documentation. Manufacturing lots for validation of the finished product are planned for this summer.

The Company has completed several additional preclinical studies necessary for registration, and more studies are underway or scheduled.

In addition, the Company has initiated or completed work related to market analysis (including targeting, pricing and competitive positioning) of Cloretazine® (VNP40101M) in AML, its initial registration pathway. Discussions with several contract sales organizations have been conducted to evaluate requirements for a sales force and product distribution in the United States.

The Company also announced its plans to meet with the European Medicines Agency (EMEA) in 2006 to discuss the requirements for registration of Cloretazine® (VNP40101M) in the European Union. The Company will also hold an Advisory Board Meeting with leading European leukemia physicians at the Annual Congress of the European Hematology Association meeting in Amsterdam June 15-18, 2006.

Meghan Fitzgerald, Chief Business Officer, stated, "Even though we are still in trials and we would not expect a commercial launch prior to 2008, we are continually evaluating all of our commercialization options for Cloretazine® (VNP40101M) in the United States and the rest of the world, and will continue to do so as our pivotal trials get closer to completion. Whether we commercialize Cloretazine® (VNP40101M) in the United States, or choose to partner, we are doing the work necessary to ensure a successful product launch." She concluded, "Our efforts to find a partner in the rest-of-the-world are ongoing, and are expected to accelerate as we establish and meet the requirements for foreign registration."

Vion Pharmaceuticals, Inc. is committed to extending the lives and improving the quality of life of cancer patients worldwide by developing and commercializing innovative cancer therapeutics. Vion has two agents in clinical trials: Cloretazine® (VNP40101M), a unique alkylating agent, is being evaluated

in: (i) a Phase III trial in combination with cytarabine in relapsed acute myelogenous leukemia and (ii) a Phase II pivotal trial as a single agent in elderly patients with previously untreated *de novo* poor-risk acute myelogenous leukemia. Additional trials of Cloretazine® (VNP40101M) as a single agent in adult and pediatric brain tumors, small cell lung cancer and chronic lymphocytic leukemia, and in combination with temozolomide in hematologic malignancies, are also underway. Triapine®, a potent inhibitor of a key step in DNA synthesis, is being evaluated in trials sponsored by the National Cancer Institute. In preclinical studies, Vion is also evaluating VNP40541, a hypoxia-selective compound, and hydrazone compounds. The Company also is seeking development partners for TAPET®, its modified *Salmonella* vector used to deliver anticancer agents directly to tumors. For additional information on Vion and its product development programs, visit the Company's Internet web site at www.vionpharm.com.

This news release contains forward-looking statements. Such statements are subject to certain risk factors which may cause Vion's plans to differ or results to vary from those expected, including Vion's ability to secure external sources of funding to continue its operations, the inability to access capital and funding on favorable terms, continued operating losses and the inability to continue operations as a result, its dependence on regulatory approval for its products, delayed or unfavorable results of drug trials, the possibility that favorable results of earlier clinical trials are not predictive of safety and efficacy results in later clinical trials, the need for additional research and testing, and a variety of other risks set forth from time to time in Vion's filings with the Securities and Exchange Commission, including but not limited to the risks discussed in Vion's Annual Report on Form 10-K for the year ended December 31, 2005. Except in special circumstances in which a duty to update arises under law when prior disclosure becomes materially misleading in light of subsequent events, Vion does not intend to update any of these forward-looking statements to reflect events or circumstances after the date hereof or to reflect the occurrence of unanticipated events.

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