COMPANY CONTACT: Vion Pharmaceuticals, Inc.
Alan Kessman, Chief Executive Officer
Howard B. Johnson, President & CFO
(203) 498-4210 phone

Vion Announces Suspension of Phase III Trial in Relapsed AML

Phase II Trial of Cloretazine® (VNP40101M) in Elderly Patients with De Novo Poor-Risk AML Continues to Accrue Patients

Company to Hold Conference Call at 10:30 A.M. Eastern Time Today

NEW HAVEN, CT, May 23, 2007 - VION PHARMACEUTICALS, INC. (NASDAQ CAPITAL MARKET: VION) announced today that it would suspend enrollment and further patient treatment in its Phase III clinical study of Cloretazine® (VNP40101M) for patients with relapsed adult myelogenous leukemia (AML) pending a detailed review of all of the data from the trial. This decision was based on the recommendation of the trial's independent Data Safety Monitoring Board (DSMB) after a planned interim analysis.

The Phase III trial is a double-blind placebo-controlled randomized evaluation of an experimental treatment consisting of Ara-C plus Cloretazine® (VNP40101M) versus a control arm regimen of Ara-C and placebo. The trial is designed to accrue patients in first relapse AML whose first complete remission (CR) was more than three months but less than twenty-four months in duration. Patients are stratified according to: (i) age, greater than or less than 60 years and (ii) length of the first CR, more than or less than 12 months in duration. The primary endpoint for the trial is the objective response rate, defined as CR plus CRp (a complete remission with incomplete recovery of platelet count). Secondary endpoints include time to progression, duration of response, overall survival and toxicity.

The DSMB's review of clinical data from the first 210 treated patients resulted in a recommendation that enrollment and further treatment of patients on study be suspended. The DSMB's recommendation was based on their evaluation that any advantage in complete remission could be compromised by the observed on-study mortality to date.

The study will remain blinded while a complete medical review is conducted.

Alan Kessman, Chief Executive Officer, stated, "There will be a thorough analysis of all the data to date from this trial, and we will base any decision on the continuation, possible

modification or termination of the study on the available data." He concluded, "We will provide an update on the status of the analysis as soon more information is available."

The Company is also evaluating Cloretazine® (VNP40101M) as a single agent in a pivotal Phase II trial in elderly patients with *de novo* poor-risk AML. This trial is being conducted in over twenty sites in the U.S. and Europe. Completion of accrual to this trial is expected to occur in June or July 2007.

Conference Call

Vion will hold a conference call on Wednesday, May 23, 2007, at 10:30 a.m. Eastern Time. To participate in the conference call, please dial ((866) 825-3308 in the U.S. (617) 213-8062 for international callers) at least 15 minutes before the start of the call. When prompted for a passcode, please enter 20525749.

An audio webcast of the call will be accessible at www.vionpharm.com. Those who wish to listen to the conference call on the Web should visit the Investor Relations section of the Company's website at least 15 minutes prior to the event broadcast, and follow the instructions provided to assure that the necessary audio applications are downloaded and installed. These programs can be obtained at no charge to the user.

A replay of the call will be available two hours after the completion of the call at ((888) 286-8010 in the U.S. (617) 801-6888 for international callers), passcode 17742150. The replay will be available through Wednesday June 6, 2007.

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 a Phase II pivotal trial as a single agent in elderly patients with previously untreated *de novo* poor-risk acute myelogenous leukemia. An additional trial of Cloretazine® (VNP40101M) as a single agent in small cell lung cancer is also underway. Triapine®, a potent inhibitor of a key step in DNA synthesis, is being evaluated in clinical 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 potential inability to obtain regulatory approval for its products, delayed or unfavorable results of drug trials, the possibility that favorable results of earlier preclinical studies or clinical trials are not predictive of safety and efficacy results in later clinical trials, the need for additional research and testing, the potential inability to secure external sources of funding to continue operations, the inability to access capital and funding on favorable terms, continued operating losses and the inability to continue operations as a result, 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 attendant to the forward-looking statements included under Item 1A, "Risk Factors" in Vion's Annual Report on Form 10-K for the year ended December 31, 2006. In particular, there can be no assurance as to the results of any of the Company's clinical trials, that any of these trials will continue to full accrual, or that any of these trials will not be discontinued, modified, delayed or ceased altogether. 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.

# # #