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

Vion Pharmaceuticals Announces Plans to Conduct a Pivotal Phase II Trial of Cloretazine® in Elderly Poor-Risk Acute Myelogenous Leukemia

--Trial to Focus on De Novo AML Patients--

NEW HAVEN, CT, January 31, 2006 - VION PHARMACEUTICALS, INC. (NASDAQ CAPITAL MARKET: VION) announced today that it plans to conduct a pivotal Phase II trial of its anticancer agent Cloretazine® in elderly patients with poor-risk acute myelogenous leukemia (AML). This new trial, Vion CLI-043, will focus on elderly patients with *de novo* poor-risk AML.

The Company met recently with the U.S. Food and Drug Administration (FDA) to discuss data from Vion CLI-033, a Phase II trial in patients with AML and high-risk myelodysplastic syndromes (MDS). In Stratum A of that trial, patients over the age of 60 with previously untreated AML and high-risk MDS are treated with Cloretazine® as a single agent. In this stratum, a response rate (CR plus CRp) of 31% was achieved in 107 treated patients. In addition, Vion has reported a response rate of 49% in a subgroup of 45 elderly patients with *de novo* AML.

The Company plans to initiate the pivotal Phase II trial, CLI-043, as soon as practicable in at least 20 sites in North America and Europe. At this time, the trial is planned to accrue approximately 85 patients.

Ann Cahill, Vice President, Clinical Development, commented, “We are excited about launching this pivotal trial and anticipate rapid patient accrual.” She added, “CLI-043 is designed to confirm the efficacy and safety of Cloretazine® for elderly patients with *de novo* poor-risk AML. Treatment for this population of patients represents an unmet medical need. Together with our previous Phase II study in an elderly AML population, results from this trial, if successful, will form the clinical basis for a submission to the FDA of a New Drug Application for Cloretazine®."

In October 2005, Vion received a fast track designation from the FDA for Cloretazine® in the treatment of elderly patients with poor-risk AML. Elderly poor-risk AML is considered to be

AML in patients over sixty years of age that have certain risk factors affecting the outcome of treatment. Elderly *de novo* poor-risk AML patients are those elderly patients whose poor-risk AML has not evolved from a prior MDS.

Alan Kessman, Chief Executive Officer, commented, "We believe that this pivotal Phase II trial, if successful, will establish an additional registration pathway for Cloretazine®, to complement the registration effort already underway in our Phase III trial in relapsed AML." He concluded, "All of us at Vion are focused on getting Cloretazine® on the market as soon as possible."

Conference Call Notification

Vion will host a conference call today to discuss the clinical development of Cloretazine® at 8:45 a.m. eastern time. The conference can be accessed by dialing (800) 561-2731 in the U.S. ((617) 614-3528 for international callers), pass code 10864294 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 53565611 through Tuesday, February 7, 2006.

Vion Pharmaceuticals, Inc. is developing cancer therapeutics. Vion has two agents in clinical trials: Cloretazine®, a unique sulfonylhydrazine alkylating agent, is being evaluated in a Phase III trial in combination with cytarabine in relapsed acute myelogenous leukemia. Trials of Cloretazine® as a single agent in previously untreated elderly acute myelogenous leukemia and high-risk myelodysplastic syndrome, 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 KS119W, a hypoxia-selective compound from the sulfonylhydrazine class, and heterocyclic hydrazones. 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, 2004. 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.

# # #