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Vion Pharmaceuticals Announces FDA Lift of Clinical Hold on Phase III Study of Cloretazine® (VNP40101M) and Cytarabine in Relapsed AML

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

NEW HAVEN, CT, January 8, 2008 – VION PHARMACEUTICALS, INC. (NASDAQ CAPITAL MARKET: VION) today announced that the U.S. Food and Drug Administration (FDA) had lifted the clinical hold on the Phase III trial (Vion Study CLI-037) of its lead anti-cancer agent, Cloretazine® (VNP40101M), in combination with cytarabine in relapsed acute myelogenous leukemia (AML).

Alan Kessman, Chief Executive Officer, said, "We are pleased with the FDA's decision to lift the clinical hold on Cloretazine® (VNP40101M) in combination with cytarabine in relapsed AML, and are now poised to move forward with the clinical development of Cloretazine® (VNP40101M) in the relapsed setting."

While this trial remains blinded overall, a portion of data on 210 patients was unblinded for review at interim analysis. The Company's medical consultants and external independent reviewers performed a comprehensive safety analysis of Vion Study CLI-037. This analysis concluded that the combined myelosuppressive effects of Cloretazine® (VNP40101M) and cytarabine given at the dose and schedule at which they were combined in the trial, in conjunction with the poor hematologic reserve of patients with relapsed AML, were major factors in the difference in mortality seen between the two arms of the study. A review of records from patients who died did not suggest any previously unreported toxicity for Cloretazine® or cytarabine.

There was an increase in the response rate observed on the Cloretazine® (VNP40101M) and cytarabine arm of the trial relative to the cytarabine and placebo arm, despite the difference in deaths between the two arms. Given this observed

increase in response rate, the Company has proposed an amended trial to continue its interest in the relapsed setting.

An agreement has been reached with the FDA on modifications to Vion Study CLI-037. The revised study includes a lower dose of Cloretazine® (VNP40101M) in the experimental arm of the trial and prophylactic therapy with antibiotics, antifungals and growth factors for all patients. In order to maintain the Special Protocol Assessment (SPA) with the FDA for this trial, the next step is to submit an SPA to the FDA with these modifications before recommencing the trial.

Dr. Frank Giles, Chief of the Division of Hematology and Medical Oncology at the University of Texas Health Science Center at San Antonio, and lead investigator on the Cloretazine® clinical program stated, “Cloretazine® has recently shown very significant single agent activity in a the difficult to treat elderly AML patient population. It is important that we now establish the optimal dosing schedule in combination with other chemotherapeutic agents, such as cytarabine.” He concluded, “Modifications to this Phase III trial in patients with relapsed AML will allow us to examine a combination schedule that should maintain the activity observed in the initial portion of the study with an acceptable marrow toxicity profile.”

The Company also announced plans to file an abstract on data from Vion Study CLI-037 for the Annual Meeting of the American Society of Clinical Oncology (ASCO®) in June 2008.

Ann Cahill, Vice President, Clinical Development, commented, “Cloretazine® (VNP40101M) is an active agent in AML, and we continue to believe that it will have clinical utility in both the frontline and second line settings, as either a single agent or in combination with other therapies.”

The Company has announced previously that it plans to file a New Drug Application with the FDA in 2008 based on a pivotal Phase II study of Cloretazine® (VNP40101M) as a single agent in elderly patients with *de novo* poor-risk AML. Preliminary data from this study were presented at the 2007 Annual Meeting of the American Society of Hematology (ASH®) in December 2007.

Conference Call Details

Vion will hold a conference call on Tuesday, January 8, 2008, at 10:30 a.m. Eastern Time. To participate in the conference call, please dial (866) 825-3209 in the U.S. (617) 213-8061 for international callers) at least 15 minutes before the start of the call. When prompted for a passcode, please enter 77697895. 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), pass code 45545274.

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. Clinical trials of Cloretazine® (VNP40101M) as a single agent in small cell lung cancer, with temozolomide in brain tumors, and with stem cell transplantation in advanced hematologic malignancies, are also being conducted. Triapine®, a potent inhibitor of a key step in DNA synthesis, is being evaluated in clinical trials sponsored by the National Cancer Institute. 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 Form 10-K for the year ended December 31, 2006 and the Company's Form 10-Q for the quarter ended September 30, 2007. 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.