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**Vion Pharmaceuticals Presents Data on Onrigin™  
Elderly AML Trials at the ASCO® Annual Meeting**

**NEW HAVEN, CT, June 1, 2009 – VION PHARMACEUTICALS, INC. (OTC BULLETIN BOARD: VION)** today announced that an analysis of clinical data of its lead anticancer agent Onrigin™ (laromustine) Injection in patients over the age of sixty with acute myeloid leukemia (AML) was presented in a poster at the 2009 American Society of Clinical Oncology (ASCO®) Annual Meeting in Orlando, Florida.

Ann Cahill, Vice President, Clinical Development, commented, “This poster presents an objective analysis of the co-morbid conditions with which so many elderly AML patients present. It demonstrates that the patient population forming the basis of the efficacy claims in Vion’s New Drug Application was indeed a poor-risk population, with multiple risk factors predicting for a poor prognosis.”

In the analysis, 140 AML patients over the age of sixty treated with Onrigin™ in two Phase II clinical trials were analyzed for co-morbidity according to the hematopoietic cell transplantation-specific co-morbidity index (HCT-CI). The HCT-CI is an adapted version of the Charlson Comorbidity Index (CCI), and was originally developed to predict outcomes in patients undergoing allogeneic stem cell transplant. It has since been used to describe outcome for AML patients receiving induction chemotherapy. HCT-CI scores have been shown to be predictive of early death and survival in patients over the age of 60 receiving induction therapy for AML.

The 140 patients included all 85 patients from the Company’s pivotal trial in elderly poor-risk AML, and 55 patients in a retrospectively determined subset from a previous trial in elderly AML. The median age of this population was 74 years. HCT-CI scores were separated into three risk groups for non-relapse mortality and survival: low (0), intermediate (1-2), and high (3 or greater). The analysis established that 81% of the patients in the combined population had an HCT-CI score of 3 or greater and that the median score was 5 (range 0-12), confirming the poor-risk nature of this patient group. Patients with an HCT-CI score of 3 or greater had an overall response rate of 34%, an

induction death rate (death within 30 days of first induction) of 14%, and a Kaplan-Meier estimate of survival at twelve months of 21%.

## **About Vion**

Vion Pharmaceuticals, Inc. is committed to extending the lives and improving the quality of life of cancer patients worldwide by developing and commercializing innovative oncology therapeutics. Vion has two agents in clinical trials, Onrigin™ (laromustine) Injection and Triapine®. The Company has an NDA under review with the FDA for Onrigin™ for remission induction treatment for patients sixty years of age or older with *de novo* poor-risk acute myeloid leukemia (AML). 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](http://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, particularly Onrigin™ (laromustine) Injection, delays in the regulatory approval process, particularly for Onrigin™ (laromustine) Injection, including possible delays in the FDA's review process beyond our expectation for approval in December 2009, delays or unfavorable results of drug trials, the possibility that favorable results of earlier preclinical studies, clinical trials or interim clinical trial data are not confirmed by safety and efficacy results in later or final clinical trials, the need for additional research and testing, the inability to manufacture product, 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, 2008, Vion's Form 10-Q for the quarter ended March 31, 2009, and Vion's Post-Effective Amendments on Form S-1 Registration Statement filed on March 23, 2009. 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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