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**Vion Pharmaceuticals, Inc.**

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**VION PHARMACEUTICALS RECEIVES A STANDARD REVIEW FROM THE  
FDA FOR ITS NEW DRUG APPLICATION FOR ONRIGIN™**

**NEW HAVEN, CT, April 23, 2009 – VION PHARMACEUTICALS, INC. (OTC BULLETIN BOARD: VION)** today announced that the New Drug Application (NDA) for its lead oncology therapeutic Onrigin™ (laromustine) Injection has received a standard review classification by the U.S. Food and Drug Administration (FDA). Therefore, a user fee goal date of December 12, 2009 for a decision by the FDA with respect to the approval of the Company's NDA has been established.

The Company had previously announced the acceptance of the NDA filing for review by the FDA on April 16, 2009. The NDA presents data for Onrigin™ as a single agent for remission induction treatment for patients sixty years of age or older with *de novo* poor-risk acute myeloid leukemia (AML). The NDA is based on the results of an international multi-center pivotal Phase II trial of 85 patients sixty years of age or older with *de novo* poor-risk AML, supplemented by data from 55 patients in a previous Phase II trial in elderly AML. Eighty-six percent of these 140 patients had two or more risk factors that predicted for a poor prognosis.

Alan Kessman, Chief Executive Officer, commented, "Our level of excitement continues to grow as we move forward in the FDA's process of reviewing our NDA. We will continue to work closely with the FDA on the filing with the objective of achieving approval for Onrigin™ in its first indication in the United States." He added, "The positive news today is that we can expect to have an FDA decision this year."

**About Vion Pharmaceuticals**

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 FDA is reviewing a New Drug Application for Onrigin™ for remission induction treatment for patients sixty years of age or older with *de novo* poor-risk 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 (formerly Cloretazine® (VNP40101M)), delays in the regulatory*

*approval process, particularly for Onrigin™ (Iaromustine) 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, and "Risk Factors" in 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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