COMPANY CONTACT: **Vion Pharmaceuticals, Inc.**
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VION REPORTS 2005 SECOND QUARTER AND SIX MONTH FINANCIAL RESULTS

NEW HAVEN, CT, August 5, 2005 – VION PHARMACEUTICALS, INC. (NASDAQ SMALLCAP: VION) today announced results for the second quarter and six-month period ended June 30, 2005.

The Company reported a net loss of $5.1 million, or $0.08 per share, for the three-month period ended June 30, 2005, compared to a net loss of $3.7 million, or $0.07 per share, for the same period in 2004. Weighted-average common shares outstanding for the three months ended June 30, 2005 and 2004 were 65.9 million and 55.3 million, respectively. Total operating expenses were $5.6 million and $3.9 million for the three months ended June 30, 2005 and 2004, respectively. The increase in operating expenses was primarily due to costs associated with the Company's preclinical product development and higher clinical trial expenses, mainly as a result of costs associated with the Company's Phase III clinical trial of CLORETAZINE™ (VNP40101M) initiated in March 2005.

For the six-month period ended June 30, 2005, the net loss was $9.7 million, or $0.15 per share, compared to a net loss of $6.9 million, or $0.13 per share, for the same period in 2004. Weighted-average common shares outstanding for the six months ended June 30, 2005 and 2004 were 64.3 million and 51.3 million, respectively. Total operating expenses were $10.5 million and $7.3 million for the six months ended June 30, 2005 and 2004, respectively. The increase in operating expenses was primarily due to higher clinical trial expenses, mainly as a result of costs associated with the Company's Phase III clinical trial of CLORETAZINE™ (VNP40101M) initiated in March 2005, and costs associated with the Company's preclinical product development.

The Company reported ending the quarter with $62.3 million in cash and cash equivalents.

Vion Pharmaceuticals, Inc. is developing anticancer agents. Vion has two agents in clinical trials: CLORETAZINE™ (VNP40101M), a unique sulfonylhydrazine alkylating agent, is being evaluated in five clinical trials, including a Phase III trial in combination with Ara-C in relapsed acute myelogenous leukemia, and Triapine®, a potent inhibitor of a key step in DNA synthesis, is being evaluated in combination with gemcitabine in a Phase II trial in pancreatic cancer and additional clinical trials sponsored by the National Cancer Institute. In preclinical studies, Vion is evaluating KS119W, a hypoxia-selective compound from the sulfonylhydrazine class, and heterocyclic hydrazones. The Company is also 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.

--Financial Statements Follow--

VION PHARMACEUTICALS, INC.
(A Development Stage Company)

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited)

(In thousands, except per share data)	Three Months Ended June 30, 2005	Three Months Ended June 30, 2004	Six Months Ended June 30, 2005	Six Months Ended June 30, 2004
Revenues:				
Technology license fees	$ 6	$ 8	$ 11	$ 17
Research and laboratory support services	1	80	1	104
Contract research grants	--	37	--	100
Total revenues	7	125	12	221
Operating expenses:				
Clinical trials	2,626	2,029	5,675	3,834
Research and development	1,958	1,162	3,103	2,119
Total research and development	4,584	3,191	8,778	5,953
General and administrative	981	726	1,672	1,343
Total operating expenses	5,565	3,917	10,450	7,296
Loss from operations	(5,558)	(3,792)	(10,438)	(7,075)
Interest income	454	115	795	206
Other income (expense)	8	8	6	(24)
Loss before income taxes	(5,096)	(3,669)	(9,637)	(6,893)
Income tax provision	11	--	22	34
Net loss	$ (5,107)	$ (3,669)	$ (9,659)	$ (6,927)
Basic and diluted loss per share	$ (0.08)	$ (0.07)	$ (0.15)	$ (0.13)
Weighted-average number of shares of common stock outstanding	65,932	55,325	64,298	51,317

CONDENSED CONSOLIDATED BALANCE SHEET DATA
(Unaudited)

	June 30, 2005	Dec. 31, 2004
	(In thousands)	
Cash and cash equivalents	$ 62,289	$41,729
Total assets	63,206	42,644
Total liabilities	6,328	6,429
Shareholders' equity	56,878	36,215

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