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Pharmacyclics Updates Positive Clinical Responses in its PCI-24781 Clinical Program Targeting HDAC

PCI-24781 Presentations at the Upcoming American Association of Cancer Research (AACR) 100th Annual Meeting

SUNNYVALE, Calif., April 16, 2009 -- SUNNYVALE, Calif., -- Pharmacyclics, Inc. (NASDAQ: PCYC) today announced an update to its clinical programs targeting histone deacetylase (HDAC) with its drug candidate PCI-24781 that is currently in multiple clinical trials for treating various solid and hematologic tumors. In addition, the Company announced multiple presentations regarding its orally available HDAC inhibitor compound at the annual AACR meeting in Denver, Colorado.

HDAC inhibitors induce differentiation of cancer cells and block cancer cell proliferation at non-toxic concentrations. PCI-24781 is a novel, potent, orally active small molecule inhibitor of HDAC enzymes with anti-tumor activity in a variety of preclinical tumor models (Buggy *et al* Mol Cancer Ther 2006; 5 (5), p. 1309-1317) and is synergistic with many cancer chemotherapeutic agents. PCI-24781 has an optimized half life, oral bioavailability, potency, and duration of exposure to achieve an ideal balance of efficacy with minimal toxicity.

In a preliminary data review, PCI-24781 is showing promising response in ongoing Phase I/II trials in refractory lymphoma and solid tumors, and is planned to be tested in an upcoming chemotherapy combination setting trial this summer. Currently 16 patients have been enrolled to date in a multicenter Phase I/II monotherapy trial in refractory lymphoma. From 10 patients evaluated to date, PCI-24781 has shown good activity (70% PR+SD) as a single agent, with one partial response in follicular NHL and

verified stable diseases in SLL, CTCL, Hodgkin's disease and follicular lymphoma. In addition, one patient with angioimmunoblastic T-cell lymphoma had a resolution of multiple disease lesions except for one lesion, but was overall scored as a disease progression. In refractory solid tumors where 44 patients have been enrolled in IV and oral dose escalation trials, there were 8 SD out of 31 evaluable patients. Overall duration of SD was very good, with the longest duration (8 months) observed in a rectal adenocarcinoma patient. To date, PCI-24781 has been well tolerated by 60 patients and has demonstrated an excellent safety profile with no significant cardiotoxicities or fatigue.

"PCI-24781 is an important HDAC inhibitor which is differentiating itself in the HDAC competitive space by virtue of lack of serious side effects such as QTc prolongation and severe fatigue frequently observed with other HDAC inhibitors. I am impressed with its therapeutic window and the quality of this overall drug development program to date," said Dr. Edward Sausville, M.D. Ph.D., former Associate Director of the Division of Cancer Treatment and Diagnosis for the Developmental Therapeutics Program at the National Cancer Institute and member of the Pharmacyclics Scientific Advisor Board. Dr. Sausville is currently Professor of Medicine, Associate Director of the Division of Cancer Treatment and Diagnosis for the Developmental Therapeutics Program and Director of Research, University of Maryland Greenebaum Cancer Center.

The scientific presentations will take place at the 100th Annual Meeting of the American Association of Cancer Research, being held at the Colorado Convention Center in Denver, CO from April 18-22, 2009. The presentations will include a seminar regarding the identification of micro-RNA and mRNA biomarkers of response to PCI-24781 in primary colon tumors and tumor cell lines. This work is being done with a view to preselecting patients most likely to respond to PCI-24781 in a future Phase II clinical trial. A second presentation details the therapeutic efficacy of this compound in a mouse model of gallbladder carcinoma, which is correlated with the down regulation and translocation of erbB2, an EGFR family member. A third presentation shows that increased superoxide level is a biomarker of PCI-24781 activity in patients receiving this

compound. In leukemia cells, PCI-24765 can lead to increased oxidative stress leading to caspase-8-dependent apoptosis.

The presentations and published abstracts are as follows:
Tuesday, April 21, 2009
Time: 1:00 pm - 5:00 pm
Poster Presentation
Abstract #4548 PCI-24781, a novel hydroxamic acid HDAC inhibitor, induces apoptosis and histone acetylation in a caspase-8 dependent manner in leukemia cells Nilsa Rivera-Del Valle, Shan Gao, Xiaolin Lu, Mint Sirisawad, Susanne Steggerda, Sriram Balasubramanian, Jennifer Wheler, Joya Chandra.
University of Texas MD Anderson Cancer Ctr., Houston, TX & Pharmacyclics Inc, Sunnyvale, CA
Poster Session : Agents Targeting Histone Deacetylases and DNA Methyltransferase
Location: Hall B-F, Poster Section 32 Poster Board Number 6

Tuesday, April 21, 2009
Time: 1:00 pm - 5:00 pm
Poster Presentation
Abstract #4549 The inhibitory effects of the histone deacetylase (HDAC) inhibitor, PCI-24781, alter growth of gallbladder cancer cells and downregulate erbB2 expression Kaoru Kiguchi, Takuya Kitamura, Tetsuo Ajiki, Kevin Connolly, John DiGiovanni.
University of Texas M.D. Anderson Cancer Ctr., Smithville, TX & Kobe University Graduate School of Medicine, Kobe, Japan
Poster Session : Agents Targeting Histone Deacetylases and DNA Methyltransferase
Location: Hall B-F, Poster Section 32 Poster Board Number 7

Wednesday, April 22, 2009
Time: 8:30 am - 12:00 pm
Oral Presentation: 8:40 am - 8:55 am
Abstract #5630 Identification of micro-RNA markers of response to HDAC inhibitor PCI-24781 in primary colon tumors Sriram Balasubramanian, Mint Sirisawad, Miriana

Moran, Hannah Mamuszka, Joseph J. Buggy. Pharmacyclics, Inc., Sunnyvale, CA & Oncotech, Tustin, CA

Session: Minisymposium - Histones, Tubulin, and Proteasome Targets

Location: Room 505-507, Colorado Convention Center

All abstracts are currently available online at http://www.aacr.org/

About Pharmacyclics

Pharmacyclics® is committed to creating and developing novel pharmaceutical products that treat serious unmet medical needs in oncology and autoimmune diseases. Its deep and broad pipeline includes four first in class/best in class drug candidates that are currently under clinical development. The Company is headquartered in Sunnyvale, California and is listed on NASDAQ under the symbol PCYC. To learn more about how Pharmacyclics advances science to improve human healthcare visit us at http://www.pharmacyclics.com.

NOTE: This announcement may contain forward-looking statements made in reliance upon the safe harbor provisions of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, including statements regarding our expectations and beliefs regarding our future results or performance. Because these statements apply to future events, they are subject to risks and uncertainties. When used in this announcement, the words “anticipate”, “believe”, “estimate”, “expect”, “expectation”, “should”, “would”, “project”, “plan”, “predict”, “intend” and similar expressions are intended to identify such forward-looking statements. Our actual results could differ materially from those projected in the forward-looking statements. Additionally, you should not consider past results to be an indication of our future performance. For a discussion of the risk factors and other factors that may affect our results, please see the Risk Factors section of our filings with the Securities and Exchange Commission, including our annual report on Form 10-K and quarterly reports on Form 10-Q. We do not intend to update any of the forward-looking statements after the date of this announcement to conform these statements to actual results, to changes in management's expectations or otherwise, except as may be required by law.

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