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Syros Pharmaceuticals Announces Publications in Cell Related to Key Gene Control Discovery

- Studies find Super-Enhancers control cell identity and drive cancer-causing genes; Syros holds exclusive licenses to Super-Enhancer intellectual property -

WATERTOWN, Mass.--(BUSINESS WIRE)-- [Syros Pharmaceuticals](#), a newly launched company harnessing breakthroughs in gene control to revolutionize the treatment of cancer and other diseases, today announced the publication of new research findings in the journal *Cell*. The research validates the approach of mapping and targeting newly identified gene control domains, known as Super-Enhancers, for drug discovery and development in cancer and other diseases. The discovery of Super-Enhancers is the basis of Syros' unique platform to identify and modulate pivotal events in disease pathogenesis and critical disease-driver targets.

Syros Co-founder Richard A. Young, Ph.D., who is a Member of the Whitehead Institute, and Professor of Biology at Massachusetts Institute of Technology, led the groundbreaking gene control research. Syros Co-founder James E. (Jay) Bradner, M.D., Assistant Professor of Medicine, Harvard Medical School and Investigator, Department of Medical Oncology, Dana Farber Cancer Institute, co-authored the research, which was funded by the National Institutes of Health and the National Cancer Institute. Syros recently completed a licensing agreement with the Whitehead Institute and the Dana Farber Cancer Institute for intellectual property related to this gene control discovery and other gene control technologies and assets.

“Given the complexity of gene expression, the discovery of a small number of powerful gene control regulators provides a promising and exciting new approach to understanding key determinants of cell identity in normal and disease states,” said Dr. Young. “We have identified Super-Enhancers with key cancer driving genes in all tumors studied and have demonstrated that we can selectively disrupt these genes through inhibition of enhancer factors.”

The new research published in back-to-back papers in *Cell* uncovered that master transcription factors form powerful gene control regulators, called “Super-Enhancers,” at key cell identity genes; that Super-Enhancers differ from enhancers in their size, transcription factor density and content; that the repertoire of genes that they regulate is unique to each cell type; and that they are important switches for driving cell type specific gene expression programs. In one of the research papers, Super-Enhancers were identified in cancer cells associated with key oncogene drivers and disruption of Super-Enhancers by inhibition of enhancer factors resulted in a preferential inhibition of Super-Enhancer driven genes. The papers, “Selective Inhibition of Tumor Oncogenes by Disruption of Super-Enhancers”¹ and “Master Transcription Factors and Mediator Establish Super-Enhancers at Key Cell Identity

Genes,”² are published in the April 1st print edition of *Cell* and available [online](#).

“This research, which highlights discovery of the master switches for genes critical in disease, gives Syros a completely new approach to identify and modulate disease driver genes,” said [Nancy Simonian, M.D., Syros Chief Executive Officer](#). “We look forward to translating the pioneering research of Drs. Young and Bradner into therapeutics that can help people facing a variety of diseases, especially cancer.”

Syros [also announced today](#) the closing of a \$30 million Series A financing led by [ARCH Venture Partners](#) and [Flagship Ventures](#). Other investors include WuXi PharmaTech Corporate Venture Fund, and undisclosed private investors.

About Syros Pharmaceuticals

Syros Pharmaceuticals is a life sciences company harnessing breakthroughs in gene control to revolutionize the treatment of cancer and other diseases. Syros’ proprietary platform identifies the master switches for disease genes, opening a whole new approach to novel therapeutics. Syros’ initial focus is in cancer, but the company platform will also be applicable to other therapeutic areas. The Company’s founders are pioneers in gene control research and translation. Co-founded and backed by Flagship Ventures and ARCH Venture Partners, Syros Pharmaceuticals is located in Watertown, MA. For more information, visit www.syros.com.

¹ Loven, J., Hoke, H., Yin, C., Lau, A., Orlando, D., Vakoc, C., Bradner, J., Lee, T. & Young, R. (2013). Selective inhibition of tumor oncogenes by disruption of super-enhancers. *Cell*, 153(2).

² Whyte, W., Orlando, D., Hnisz, D., Abraham, B., Lin, C., Kagey, M., Rahl, P., Lee, T. & Young, R. (2013). Master transcription factors and mediator establish super-enhancers at key cell identity genes. *Cell*, 153(2).

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