



News Release

FOR IMMEDIATE RELEASE

Contacts:

For Dicerna:

Martin Williams, SVP & Chief Business Officer
Dicerna Pharmaceuticals
+1 (617) 621-8097

Michele Rozen
Pure Communications, Inc.
+1 (617) 953-2214

**Dicerna Signs Research Collaboration and License Agreement for
Drug Delivery Systems and Dicer Substrate siRNA (DsiRNA) Pharmaceuticals with
Kyowa Hakko Kirin**

WATERTOWN, Mass. – January 4th, 2010 – Dicerna Pharmaceuticals, Inc., (Dicerna) a second generation RNA interference (RNAi) company developing novel therapeutics utilizing its proprietary Dicer Substrate Technology™ and Dicer Substrate siRNA (DsiRNA) molecules, and Kyowa Hakko Kirin Co., Ltd. (TSE: 4151) (Kyowa Hakko Kirin), one of Japan's leading biopharmaceutical companies, announced today that the two companies have entered into a research collaboration and license agreement for the research, development and commercialization of drug delivery systems and DsiRNA pharmaceuticals for therapeutic targets in oncology.

“We are very pleased to enter into this exciting collaboration with Kyowa Hakko Kirin,” said James C. Jenson, Ph.D., chief executive officer and co-founder of Dicerna. “This partnership is a further validation of Dicerna’s proprietary Dicer Substrate Technology platform and our unique ability to generate a greater number of more potent molecules. This collaboration provides us with the opportunity to develop novel Dicer Substrate siRNA therapies and related drug delivery systems while working with an innovative biopharmaceutical partner.”

Under the terms of the collaboration, Dicerna will receive \$4 million in upfront cash payments including research funding, and up to \$120 million in additional research funding, development and commercial milestones for exclusive rights to one target in the field of oncology. According to the progress of the research collaboration, Kyowa Hakko Kirin and Dicerna may expand the scope of the collaboration by adding approximately up to ten targets under similar terms and may broaden the therapeutic focus of the partnership. Dicerna is entitled to royalty payments on sales from products for these targets. Dicerna also has an option to equally co-promote and profit-share (50:50) in the United States for the initial target.

“Dicer Substrate Technology is a highly promising approach to provide innovative RNAi-based therapeutics. Combining with our drug delivery system will enable us to jointly offer new treatments for cancer as well as other diseases,” said Etsuo Ohshima, Ph.D., managing officer and vice president of research division at Kyowa Hakko Kirin. “This collaboration addresses to

reinforce the possibility of DsiRNA-based medicines by means of specific delivery to tumors or certain tissues. We believe that this endeavor to modulate intracellular targets can be complementary to our own antibody-based approach featuring POTELLIGENT[®] technology to cell surface targets. Dicerna will be an important partner for Kyowa Hakko Kirin to open an opportunity of new medications for patients.”

“We look forward to a very productive partnership with our colleagues at Kyowa Hakko Kirin, a company with an interest in RNA interference therapeutics,” said Martin D. Williams, chief business officer at Dicerna. “We have been impressed by Kyowa Hakko Kirin’s experience with gene silencing and drug delivery systems. In Kyowa Hakko Kirin, we believe we have found a partner who shares our vision of the importance of bringing this important new therapeutic category to market, and commitment to develop DsiRNA-based medicines for the benefit of patients.”

About Kyowa Hakko Kirin

Kyowa Hakko Kirin Co., Ltd., had a new start in October 2008 following the merger of Kyowa Hakko Kogyo Co., Ltd. and Kirin Pharma Co., Ltd., with the aim of becoming a global specialty pharmaceutical company that creates innovative new drugs. To that end, Kyowa Hakko Kirin is integrating and enhancing the antibody technologies and other advanced technologies and assets that were developed by its predecessor companies. As an R&D-centered company with a strong foundation in biotechnology, Kyowa Hakko Kirin is focusing its core business areas of pharmaceuticals and bio-chemicals to create new value in the life sciences and to contribute to the health and well-being of people around the world.

About Dicer Substrate RNAi

First described in plants and then in worms, flies and higher organisms, RNA interference (RNAi) is a key cellular mechanism regulating gene expression in both normal and disease processes. Dicer is a critical enzyme involved in the gene-silencing cascade. Dicer processing of double-stranded RNA oligonucleotides of 25 or more base pairs and hand-off to the gene-silencing complex (RISC) results in significantly more potent activity and longer duration of action.

About Dicerna

Dicerna Pharmaceuticals is a private, venture-backed RNAi-focused biopharmaceutical company developing novel therapeutic agents in multiple disease areas based on its proprietary Dicer Substrate Technology[™] platform. Dicerna is developing second generation RNAi-based therapies, and related drug delivery systems, that use the engagement of the enzyme Dicer, which is an earlier step in the gene silencing process and a natural initiation point for the RNAi cascade. This distinct biological pathway demonstrates greater potency and a longer duration of action, differentiating it from other RNAi approaches, and resulting in the knockdown of expression of a targeted gene in a way that is highly selective and specific. Dicerna believes that its Dicer Substrate Technology is based on intellectual property that is both broadly enabling and distinct from other IP in the field. Dicerna has exclusive, worldwide rights to the Dicer Substrate Technology and has the sole right to grant sublicenses to the full portfolio of Dicer Substrate intellectual property. Dicerna is based in Watertown, Massachusetts. For more information, please visit www.dicerna.com.