



Marina Biotech and Mirna Therapeutics Announce License Agreement for the Development of microRNA-based Therapeutics

- Mirna Therapeutics will develop oncology-focused compounds utilizing their proprietary microRNAs combined with Marina Biotech's novel SMARTICLES® liposomal delivery technology -

Bothell, WA and Austin, TX December 23, 2011 – Marina Biotech, Inc. (Nasdaq: MRNA), a leading oligonucleotide-based drug discovery and development company, and Mirna Therapeutics, Inc. (Mirna), a privately-held biotechnology company pioneering microRNA (miRNA) replacement therapy for cancer, announced today that they have entered into a license agreement regarding the development and commercialization of microRNA-based therapeutics utilizing Mirna's proprietary microRNAs and Marina Biotech's novel SMARTICLES liposomal delivery technology. Mirna will have full responsibility for the development and commercialization of any products arising under the Agreement and Marina Biotech will support pre-clinical and process development efforts. Under terms of the Agreement, Marina Biotech could receive up to \$63 million in total upfront, clinical and commercialization milestone payments, as well as royalties on sales, based on the successful outcome of the collaboration. Further terms of the Agreement were not disclosed.

“Given the challenge of effectively delivering oligonucleotides to target tissues, we devoted considerable effort to identifying an optimal delivery technology that would allow for systemic administration of our potent miRNA tumor suppressors and which is already in clinical testing,” said Paul Lammers, M.D., M.Sc., President and CEO of Mirna Therapeutics. “With the dramatic in vivo results achieved with our miRNA mimics, we believe the SMARTICLES technology solves the delivery challenge for us, and we are now looking forward to bringing our miRNA mimics into the clinic in the next 18 months as promising targeted cancer therapeutics.

“We are extremely pleased to have entered into this relationship with a company as well respected in the area of microRNA-based therapeutics as Mirna Therapeutics,” stated J. Michael French, President and CEO of Marina Biotech. “We are excited to see the continued advancement of oligonucleotide-based therapeutics and to be able to provide a technology capable of effectively delivering, in this case, systemically administered miRNA mimetics. We look forward to the rapid advancement of Mirna Therapeutics' clinical pipeline and the opportunity to bring novel therapeutics to patients in need.”

In a recent poster entitled “The Development of a miRNA-based Therapeutic Candidate for Hepatocellular Carcinoma,” presented at the November, 2011 AACR-NCI-EORTC International Conference on Molecular Targets and Cancer Therapeutics in San Francisco, CA, Mirna scientists showed that mimics of five tumor suppressor miRNAs, including miR-34 and let-7, all significantly inhibited the growth of liver tumors compared to animals treated with formulated negative control miRNAs. The five miRNA mimics were complexed with Marina Biotech's

SMARTICLES delivery formulation and injected into NOD/SCID mice with orthotopically grown Hep3B human liver cancer xenografts.

The companies will present their respective science and technologies at the upcoming Biotech Showcase™ 2012, January 9-11, 2012 at the Parc 55 Wyndham San Francisco – Union Square at 55 Cyril Magnin Street, San Francisco, CA. Mirna Therapeutics will present on Monday, 9 January at 3:00 pm and Marina Biotech will present on Tuesday, 10 January at 2:30 pm.

About Marina Biotech, Inc.

Marina Biotech is a biotechnology company focused on the development and commercialization of oligonucleotide-based therapeutics utilizing multiple mechanisms of action including RNA interference (RNAi) and messenger RNA translational blocking. The Marina Biotech pipeline currently includes a clinical program in Familial Adenomatous Polyposis (a precancerous syndrome) and two preclinical programs -- in bladder cancer and malignant ascites. Marina Biotech entered into an exclusive agreement with The Debiopharm Group for the development and commercialization of the bladder cancer program. Marina Biotech's goal is to improve human health through the development of RNAi- and oligonucleotide-based compounds and drug delivery technologies that together provide superior therapeutic options for patients. Additional information about Marina Biotech is available at <http://www.marinabio.com>.

About Mirna Therapeutics, Inc.

Mirna Therapeutics is a biotechnology company focused on the development and commercialization of microRNA (miRNA) therapeutics. The Company has a substantial intellectual property portfolio on the therapeutic use of miRNAs developed by its own scientists as well as in-licensed from other institutions. Mirna's IP portfolio contains >300 miRNAs with applications in oncology and other diseases. Oncology-directed miRNAs include those that are key tumor suppressors in cancer, such as miR-34 and let-7 that have proven to block tumor growth in a number of different pre-clinical animal studies. The Company, founded in 2007, is located in Austin, Texas, and has received significant funding from the State of Texas, both through the State's Emerging Technology Fund and from the Cancer Prevention and Research Institute of Texas (CPRIT). Mirna Therapeutics is the recipient of a \$10.3 million commercialization award from CPRIT. For more information, visit www.mirnarx.com

Forward-Looking Statements

Statements made in this news release may be forward-looking statements within the meaning of Federal Securities laws that are subject to certain risks and uncertainties and involve factors that may cause actual results to differ materially from those projected or suggested. Factors that could cause actual results to differ materially from those in forward-looking statements include, but are not limited to: (i) the ability of Marina Biotech to obtain additional funding; (ii) the ability of Marina Biotech to attract and/or maintain manufacturing, research, development and commercialization partners; (iii) the ability of Marina Biotech and/or a partner to successfully

complete product research and development, including preclinical and clinical studies and commercialization; (iv) the ability of Marina Biotech and/or a partner to obtain required governmental approvals; and (v) the ability of Marina Biotech and/or a partner to develop and commercialize products prior to, and that can compete favorably with those of, competitors. Additional factors that could cause actual results to differ materially from those projected or suggested in any forward-looking statements are contained in Marina Biotech's most recent periodic reports on Form 10-K and Form 10-Q that are filed with the Securities and Exchange Commission. Marina Biotech assumes no obligation to update and supplement forward-looking statements because of subsequent events.

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