News Release

Marina Biotech's CEQ508 Granted FDA Fast Track Designation for Familial Adenomatous Polyposis

Company also receives U.S. patent allowance broadly covering tkRNAi bacterial compositions

BOTHELL, WA (August 5, 2015) – Marina Biotech, Inc. (NASDAQ: MRNA) today announced that the U.S. Food and Drug Administration (FDA) has granted Fast Track designation to CEQ508, an investigational RNAi therapeutic for the treatment of Familial Adenomatous Polyposis (FAP). Currently, there is no pharmaceutical approach available to treat FAP, which affects an estimated one in 10,000 people worldwide and is associated with a near 100% risk of colon cancer if untreated. In addition, the company announced the allowance of US 13/196,436 covering the *tk*RNAi delivery technology – the delivery technology for CEQ508 – in the U.S. The patent broadly covers a wide range of vectors for bacterial mediated gene silencing, as well as the fundamental invasive bacterium for delivering RNA therapeutics.

Fast Track is a process designed by the FDA to facilitate the development, and expedite the review of new drugs to treat serious conditions and fill an unmet medical need. Fast Track designated drugs are eligible for more frequent communication with the FDA and may receive Accelerated Approval and Priority Review.

"We believe that Fast Track designation, together with Orphan Drug status previously granted by the FDA for CEQ508, provides Marina a unique opportunity to address an unmet medical need and bring CEQ508 to patients with Familial Adenomatous Polyposis as quickly as possible," said Michael French, president and Chief Executive Officer. "The Fast Track designation for CEQ508 can significantly reduce the review time of a new drug application and therefore reduce the time to market. In addition, the recent U.S. patent allowance for the tkRNAi delivery technology expands the broad international coverage of this technology, which now includes related patents granted in Europe, Japan, Korea, Australia and Canada. Fast Track designation for CEQ508 and the further expansion of the intellectual property estate surrounding the tkRNAi platform continues to build the value of our pipeline and, in particular, our lead clinical program."

Marina's START-FAP (Safety and Tolerability of An RNAi Therapeutic in Familial Adenomatous Polyposis) is a single-center, US-based study to evaluate safety and tolerability of CEQ508 in patients with FAP. The study is also evaluating the inhibition of β-catenin messenger RNA (mRNA), the gene target for CEQ508. The first two cohorts in the dose escalation phase of the START-FAP clinical trial have been completed. Six patients with FAP completed the study, three in Cohort 1 at a dose of 1×10^8 colony forming units (cfu)/day and three in Cohort 2 at 1×10^9 cfu/day. Each patient received once daily CEQ508 orally for 28 days and was monitored by study staff on a daily basis. With the support of a development/marketing partner or the receipt of sufficient direct funding, the company expects to initiate Cohort 3 in 2016.

"The oral delivery of CEQ508 is unique in the RNAi and nucleic acid space," said Alan W. Dunton, MD, Chief Medical Officer. "CEQ508 has been well tolerated and no serious adverse events have been reported. The data collected for Cohorts 1 and 2 indicates some impact on mRNA, an encouraging finding at this stage of development."

About CEQ508

CEQ508 is the first drug candidate in a novel class of therapeutic agents utilizing the transkingdom RNA interference (tkRNAi) platform. CEQ508 comprises attenuated bacteria that are engineered to enter into dysplastic tissue and release a payload of short-hairpin RNA (shRNA), a mediator in the RNAi pathway. The shRNA targets the mRNA of beta-catenin, which is known to be dysregulated in classical FAP. CEQ508 is being developed as an orally administered treatment to reduce the levels of beta-catenin protein in the epithelial cells of the small and large intestine. Upon enrollment, patients will be placed in one of four dose-escalating cohorts. Following completion of the dose escalation phase, the trial plan calls for a stable-dose phase in which additional patients will receive the highest safe dose. CEQ508 will be administered daily in an oral suspension for 28 consecutive days. For more information please contact clinicaltrials@marinabio.com.

About FAP

CEQ508 is being developed for the treatment of Familial Adenomatous Polyposis (FAP), a hereditary condition that occurs in approximately 1:10,000 persons worldwide. FAP is caused by mutations in the Adenomatous Polyposis Coli (APC) gene. As a result of these mutations, epithelial cells lining the intestinal tract have increased levels of the protein beta-catenin, which in turn, results in uncontrolled cell growth. Proliferation of the epithelial cells results in the formation of numerous (hundreds to thousands) non-cancerous growths (polyps) throughout the large intestine. By age 35, 95% of individuals with FAP have developed polyps and most will experience adverse effects including increased risk of bleeding and the potential for anemia. In more severe cases, obstruction of the intestines, abdominal pain, and severe bouts of diarrhea or constipation can occur. FAP patients are also at an increased risk of various cancers, the most concerning of which is a nearly 100% occurrence of colon cancer if measures are not taken to prevent the formation of polyps. For many patients, complete colectomy (surgical removal of the entire large intestine), usually performed in the late teenage years or early twenties, is the only viable option for treatment. However, surgical intervention is not curative as the risk of polyps forming in the remaining portions of the intestinal tract and in the small intestine continues after colectomy.

About Marina Biotech, Inc.

Marina Biotech is an oligonucleotide therapeutics company with broad drug discovery technologies providing the ability to develop proprietary single and double-stranded nucleic acid therapeutics including siRNAs, microRNA mimics, antagomirs, and antisense compounds, including messenger RNA therapeutics. These technologies were built via a roll-up strategy to discover and develop different types of nucleic acid therapeutics in order to modulate (up or down) a specific protein(s) which is either being produced too much or too little thereby causing a particular disease. We believe that the Marina Biotech technologies have unique strengths as a drug discovery engine for the development of nucleic acid-based therapeutics for rare and orphan diseases. Further, we believe Marina Biotech is the only company in the sector that has a delivery technology in human clinical trials with differentiated classes of payloads, through licensees ProNAi Therapeutics and Mirna Therapeutics, delivering single-stranded and double-stranded nucleic acid payloads, respectively. Our novel chemistries and other delivery technologies have been validated through license agreements with Roche, Novartis, MiNA, Monsanto, and Tekmira. The Marina Biotech pipeline currently includes a clinical program in Familial Adenomatous Polyposis (a precancerous syndrome) and a preclinical program in myotonic dystrophy. 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 www.marinabio.com.

Marina Biotech 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 filings with the Securities and Exchange Commission. Marina Biotech assumes no obligation to update or supplement forward-looking statements because of subsequent events.

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