

The Minneapolis Medical Research Foundation Selects Goodwin Biotechnology to Help Develop and Manufacture Two Vaccines to Treat Opioid Addiction

March 2017 -- Plantation, Florida -- Goodwin Biotechnology, Inc., a biological Contract Development and Manufacturing Organization (CDMO) that specializes in bioprocess development and cGMP manufacturing of biopharmaceuticals, today announced that it was recently selected by the Minneapolis Medical Research Foundation (MMRF), a non-profit subsidiary of the Hennepin Healthcare System, Inc. in Minneapolis, Minn., to help develop vaccines to treat heroin and prescription opioid addiction and ready these vaccines for clinical evaluation. This research is funded by a three-year grant to the MMRF from the National Institute on Drug Abuse.

"Opioid pain relievers are generally safe when taken for a short time and as prescribed by a doctor, but they are frequently misused because they produce euphoria in addition to pain relief," according to Marco Pravetoni, Ph.D., MMRF researcher, Associate Professor at the University of Minnesota Medical School and one of the study's principal investigators. "Regular use, even as prescribed by a doctor, can produce dependence, and when misused or abused, opioid pain relievers can cause a fatal overdose. The current epidemic of heroin and prescription opioid abuse has led to increased opioid-related overdoses, now the leading cause of accidental death in the United States. It is important to effectively treat opioid addiction in order to help break the close correlation of addiction with overdosing. The vaccines being developed by MMRF investigators are intended to provide an additional option for treating opioid addiction."

"For over 15 years, Goodwin Biotechnology has been one of the pioneers in providing development services and GMP manufacturing of a broad portfolio of Antibody:Drug Conjugate (ADC) and Protein:Drug Conjugate (PDC) projects, including cytotoxic ADCs, Radio-Immunoconjugates, Antibody:Peptide Conjugates, Antibody:Dye Conjugates, PEGylated proteins, and other bioconjugates including Biobetters," said Muctarr Sesay, Ph.D., Chief Scientific Officer at Goodwin Biotechnology. "Our experience in Bioconjugation has resulted in several patents and publications, as well as proprietary processes that enable us to help our clients overcome some significant challenges in developing their next generation of bioconjugates. When including our experience in manufacturing vaccines for use in early- and late-stage clinical trials, we found the Minneapolis Medical Research Foundation project to be highly intriguing."

"This is not an unusual approach for us when we initiate a project because we collaborate with many of our clients in the early stages of proof of concept/development by empirically recommending the appropriate processes to create a viable ADC or PDC candidate," Dr. Sesay continued. "We then blend that with a solutions-oriented approach to help our clients overcome significant challenges to ensure that the process for their candidate is robust, compliant, economical, and scalable."

"We are proud to help advance the treatment for this growing public health concern because we're confident in the expertise that our highly skilled scientists have developed in the areas of ADCs and PDCs, based on the successful work that we have done with over 400 client projects over the last 24 plus years," said Karl Pinto, Chief Executive Officer at Goodwin Biotechnology, Inc. "Our Bioconjugation capabilities complement our experience in successfully developing and manufacturing monoclonal antibodies, recombinant proteins, and vaccines through mammalian cell culture expression systems. So, as part of our Single Source Solution™, Goodwin is uniquely qualified to partner with our clients to meet their needs by developing customized and flexible approaches for manufacturing antibodies and recombinant proteins, for example, and / or design the appropriate conjugation activities to cost effectively deliver their product candidates on time."

About the Minneapolis Medical Research Foundation

The Minneapolis Medical Research Foundation (MMRF) is a subsidiary of Hennepin Healthcare System, Inc., and operates as the research arm of Hennepin County Medical Center, an acute care research and teaching hospital in Minneapolis. MMRF is one of the largest nonprofit medical research organizations in Minnesota and consistently ranks in the top 10 percent of all institutions receiving research funding from the National Institutes of Health. To learn more, visit mmrf.org.

About Goodwin Biotechnology, Inc.

Goodwin Biotechnology is a uniquely qualified CDMO that offers a Single Source Solution™ for our clients from cell line development (through our strategic partner), exploratory proof of concept projects through process development and cGMP contract manufacturing of monoclonal antibodies, recombinant proteins, vaccines, and Biologic Drug Conjugates including Antibody: Drug Conjugates (ADCs) for early and late stage clinical trials. By working with Goodwin Biotechnology, clients can enhance the value of their product candidates with clear development and manufacturing strategies, as well as a road map to meet the appropriate quality requirements from the milligram and gram range to kilogram quantities as the product candidates move along the clinical development pathway in a cost-effective, timely, and cGMP compliant manner to enhance patients' lives. With over 20 years of experience as an independent integrated contract manufacturer, Goodwin Biotechnology has worked as a strategic partner with numerous companies of all sizes from small university spin-offs to major research institutes, government agencies and large, established and multi-national biopharmaceutical companies. Based on the impressive track record, Goodwin Biotechnology has been awarded Frost & Sullivan's Customer Value and Leadership Award for Best Practices in Mammalian Contract Manufacturing in 2014. In addition, Goodwin Biotechnology was awarded 'Best in Sector: Biopharmaceutical Contract Development & Manufacturing' at Acquisition International magazine's 2015 Sector Performance Awards. Most recently, Goodwin Biotechnology received Global Health & Pharma's award for Best for BioProcess Development & cGMP Manufacturing in 2016, and Best in Mammalian Cell Culture Process Development & cGMP Manufacturing 2017. <u>Click here</u> to view the press releases! Additional information may be found at http://www.GoodwinBio.com.

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