

PRESS RELEASE

ProBioGen Partners with MAPP BIOPHARMACEUTICAL, INC. for Groundbreaking Development of Afucosylated Antibody Against Marburg Virus Disease Using GlymaxX Technology

Berlin, Germany – March 13th, 2024

ProBioGen, a leading CDMO of innovative solutions and services for biopharmaceutical development, is pleased to announce the execution of services and license agreements with MAPP BIOPHARMACEUTICAL, INC. to develop a cell line for an afucosylated antibody targeting Marburg virus (MARV) infection. This collaborative effort will leverage ProBioGen's cutting-edge GlymaxX[®] technology to enhance the therapeutic potential of the antibody by adjusting the afucosylation levels.

Under the terms of the agreement, ProBioGen will contribute its expertise in cell line development including its proprietary DirectedLuck[®] transposase system and GlymaxX technology to enhance antibody-dependent cellular cytotoxicity (ADCC) of the molecule. ADCC enhancement is a key strategy for improving therapeutic antibody-drug efficacy. This collaboration aims to address the urgent need for advanced therapies against MARV infections, a severe and often fatal illness caused by the Marburg virus.

"We are excited to collaborate with MAPP BIOPHARMACEUTICAL, INC. in the development of a cell line for an afucosylated antibody targeting MARV infection, utilizing our GlymaxX technology," said Volker Sandig, CSO at ProBioGen. "This again confirms the versatility of our technology which is broadly used for cancer therapeutics but can also make a meaningful impact in the fight against life-threatening infections."

Marburg virus poses a significant public health threat, and the development of an antibody represents a promising avenue for therapeutic intervention. By reducing fucose levels in the antibody's glycan structure, GlymaxX technology enhances its effector functions, potentially improving the overall efficacy of the antibody in combating MARV infection.

MAPP BIOPHARMACEUTICAL, INC., a prominent player in the infectious disease space of the biopharmaceutical industry, brings valuable expertise and resources to the collaboration. Biomedical Advanced Research and Development Authority (BARDA) has awarded funding to MAPP to advance the development of MBP091, a single monoclonal antibody therapeutic to treat Marburg virus disease (MVD). This would be the first therapy to specifically treat MARV infections.

"We are pleased to partner with ProBioGen to develop a cell line to produce our afucosylated antibody to treat MARV infection," commented Dr. Ronald Aimes, VP, Development - Marburg at MAPP BIOPHARMACEUTICAL, INC. "This collaboration exemplifies our shared commitment to addressing unmet medical needs and underscores the potential of combining our capabilities to deliver innovative and impactful biopharmaceutical solutions for infectious diseases."

The collaboration between ProBioGen and MAPP BIOPHARMACEUTICAL, INC. represents a significant milestone in the pursuit of novel therapies against infectious diseases. Both companies remain dedicated to advancing biopharmaceutical development and contributing to the global effort to improve healthcare outcomes. Financial details of the service and non-exclusive GlymaxX license were not disclosed.

This project has been funded in whole or in part with federal funds from the U.S. Department of Health and Human Services; Administration for Strategic Preparedness and Response; Biomedical Advanced Research and Development Authority, under contract number 75A50122C00076.

About Mapp Biopharmaceutical, Inc.

Mapp Biopharmaceutical, Inc. was founded in 2003 by Drs. Kevin Whaley and Larry Zeitlin to develop novel pharmaceuticals for the prevention and treatment of infectious diseases, focusing on unmet needs in global health and biodefense.

About GlymaxX

ProBioGen developed the [GlymaxX](#) technology to optimize antibody activity, notably the enhanced antibody-mediated cell killing of cancerous or infected cells (known as "ADCC" activity). GlymaxX is based on the stable introduction of a gene into producer cells that encodes for an enzyme that blocks the cells' fucose biosynthesis pathway and hence the formation of the sugar "fucose". Consequently, in the antibody-producer cells no fucose is added to the antibody's N-linked carbohydrate part. This absence of fucose in antibodies is known to greatly enhance ADCC.

As a unique feature, differentiating it from other approaches, GlymaxX can be applied to both novel or already existing antibody producer cell lines, and entire antibody expression and discovery platforms. GlymaxX does not negatively affect cellular productivity or other product characteristics. Furthermore, a GlymaxX cell line can be flexibly used to produce differently fucosylated products, depending on the upstream process: In fucose-free medium the antibody is literally afucosylated.

The same GlymaxX cell line grown in fucose-containing medium however, uses the provided fucose and produces fully fucosylated antibody. Thus, one GlymaxX cell line can be employed to produce several products: For instance ADCC-enhanced GlymaxX antibodies or wildtype-like, fully fucosylated mAbs, e. g. for a parallel Antibody-Drug-Conjugate (ADC) project. Moreover, GlymaxX has also been used to adjust the fucose level as wanted and by biosimilar-developing companies to match the originators glycoprofile. Overall, GlymaxX is simple, rapid, potent, and universally applicable to different CHO hosts and all other eukaryotic cell species. ProBioGen offers its GlymaxX technology royalty-free and non-exclusively as a service or as an individual license.

About DirectedLuck

ProBioGen's [DirectedLuck](#) transposase system combines an optimized highly active transposase and transposon with epigenetic targeting. It is equipped with a recognition domain for specific histone marks that integrates multiple copies of transgene expression units individually at genomic regions with highest transcriptional activity. As a result, it achieves exceptionally high protein expression and maximum stability in clone pools and clones. This reduces time and manual lab work for selecting superior clones for best titers, proven stability and product quality.

The DirectedLuck Transposase is compatible with genetic elements in standard expression vector design and can be used with host cell lines of different species and tissue origin. DirectedLuck delivers superior cell lines for standard mAbs and complex glycoproteins and provides additional benefits for bispecifics and virus producer cell lines where it allows gradual adjustment of relative expression levels for optimal product quality.

DirectedLuck is available for out-licensing. Furthermore, ProBioGen applies DirectedLuck as a standard tool in clients' service projects at no extra charge.

About ProBioGen

[ProBioGen](#) is a Berlin-based specialist for developing and manufacturing biopharmaceutical active ingredients, viral vectors and vaccines with applying proprietary technologies to improve product quality and features.

Combining both state-of-the-art development services, based on ProBioGen's [CHO.RiGHT](#)[®] expression and manufacturing platform, together with intelligent product-specific technologies yields biologics with optimized properties. Rapid and integrated cell line and process development, comprehensive analytical development and following reliable GMP manufacturing is performed by a highly skilled and experienced team. All services and technologies are embedded in a total quality management system to assure compliance with GMP standards (EMA/FDA).

ProBioGen has been operational for almost 30 years. At four locations in Berlin, 300 employees contribute to the creation of new therapies in medicine and groundbreaking innovations worldwide through their creative and meticulous work. ProBioGen's growth strategy is driven by the expansion of the service value chain through organic growth and potential acquisition. Diversification is a complement driver, while the focus is strict on enabling the development of biopharmaceuticals for tomorrow.

For more information about ProBioGen, follow us on [LinkedIn](#).

ProBioGen Contact:

Dr. Gabriele Schneider
Chief Business Officer
cdmo@probiogen.de

ProBioGen Press Contact:

Jana Windt
Head of Marketing and Communications
press@probiogen.de