

## PRESS RELEASE

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### ProBioGen signs GlymaxX ADCC Enhancement Technology License Deal

*Berlin, Germany, June 23<sup>rd</sup>, 2014* - ProBioGen AG announced today that it has signed a non-exclusive commercial multi-product licensing agreement with Novartis on its GlymaxX<sup>®</sup> Antibody Glyco-Engineering technology. Novartis will apply the technology for manufacturing of selected ADCC activity-enhanced (Antibody-Dependent Cell-Mediated Cytotoxicity) antibodies in clinical and pre-clinical development.

"We are very satisfied that in our continuous business relationship Novartis has tested GlymaxX<sup>®</sup> and, as a consequence, decided to integrate our GlymaxX<sup>®</sup> technology into its own CHO cell line platform. This underlines our technology leadership and our scientific creativity to develop smart and flexible solutions for optimized biopharmaceutical manufacturing", commented Volker Sandig, Chief Scientific Officer of ProBioGen AG. "We are convinced that our GlymaxX<sup>®</sup> technology will help to accelerate the drug development for any disease in which enhanced ADCC activity translates into therapeutic benefit."

The GlymaxX<sup>®</sup> technology for production of afucosylated proteins is based on the stable integration of a heterologous enzyme into any antibody producer cell line, leading to the interference with the cells' intracellular fucose biosynthesis pathway. As a unique feature, and differentiating it from other approaches, the GlymaxX<sup>®</sup> technology can be applied to both novel and already existing antibody producer cell lines, as well as to entire production platforms, without negatively affecting their productivity. It is simple, potent and universally applicable and can easily be integrated into Novartis' CHO platform.

Under the terms of the license agreement, ProBioGen grants Novartis non-exclusive rights to use the GlymaxX<sup>®</sup> technology for an undisclosed number of clinical and pre-clinical development programs. Financial details were not disclosed.

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#### ADCC

ADCC (Antibody-Dependent Cell-Mediated Cytotoxicity) activity is an important antibody function leading to selectively killing target cells, i.e. cancer cells or pathogen-infected cells. Several therapeutic antibody drugs on the market rely on ADCC as a mechanism of action. ADCC enhancement has the potential to increase the therapeutic effect and/or to greatly reduce antibody dosage requirements, resulting in fewer side-effects and treatment costs.

#### About GlymaxX<sup>®</sup> - [www.glymaxx.de](http://www.glymaxx.de)

The GlymaxX<sup>®</sup> technology, developed by ProBioGen, prevents the addition of the sugar "fucose" to the N-linked antibody carbohydrate part by antibody producing cells. The absence of fucose enhances ADCC. The GlymaxX<sup>®</sup> technology is based on the introduction of a gene for an enzyme which deflects the cellular pathway of fucose biosynthesis. The GlymaxX<sup>®</sup> technology is universally applicable, simple and potent, and can be rapidly applied to any existing antibody producer cell line, or can be included into any new cell line development. ProBioGen offers this technology royalty-free to third parties.

**About ProBioGen - [www.probiogen.de](http://www.probiogen.de)**

ProBioGen is an internationally operating technology provider and Contract Development and Manufacturing Organization (CDMO) with almost 20 years of experience in cell culture, process development, and GMP-manufacturing. ProBioGen, with its scientific excellence and strong intellectual property base, is a competent and reliable CDMO partner, offering customized solutions for even the most challenging development and manufacturing requirements. This is backed by the company's established, fee-for-service-based CHO cell and media platform, its GlymaxX<sup>®</sup> ADCC enhancement technology and its AGE1.CR<sup>®</sup> family of animal and human designer cell lines. All services and technologies are embedded in a total quality management system to assure compliance with international ISO and GMP standards (EMA/FDA).

ProBioGen was founded in 1994 and is located in Berlin, Germany.

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