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Using GlycoExpress for production of highly active antibodies directed against novel and existing targets

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Glycosylation is the major post-translational modifications of biotherapeutics that depends on the cell line used for production. By establishment of the GlycoExpress Toolbox we have generated a set of glycoengineered human cell lines to optimize the human glycosylation of biotherapeutics.

PankoMab-GEX™ is a novel glycooptimized humanized monoclonal antibody produced in GlycoExpress. It recognizes a unique carbohydrate-induced conformational epitope (TA-MUC1). This epitope is tumor-distinctive and is present in the majority of cases of a variety of carcinomas. PankoMab-GEX™ is currently in late Phase I trial.

Tumors carrying target molecules like Her2/neu, EGFR, CD20 and others are currently challenged by antibody therapeutics like Herceptin, Erbitux and Rituxan. However, clinical data shows that the success of the therapy depends on the Fc γ RIIIa allotype present within the treated patient. By Using GlycoExpress existing antibodies can be optimized in respect to manifold improvement of anti-cancer activity enabling clinicians to treat patients carrying the low affinity Fc γ RIIIa allotype and thus broadening the patient spectra. The activity of the antibodies was improved several hundred fold when measured by means of an ADCC assay. Furthermore the antibodies are improved with respect to half-life elongation and removal of immunogenic components. Two biobetter antibodies are currently in Phase I clinical trials.

Biography

Dr. Steffen Goletz, CEO, CSO and founder of the biotech company GLYCOTOPE, studied biology, biochemistry and molecular biology at the universities in Heidelberg, Kaiserslautern, Manchester (UK) and Berlin and holds a Ph.D. in biochemistry. During his research, Dr. Goletz has focused on glycobiology, tumor immunology, antibody engineering and cellular engineering. As CSO, Steffen is responsible for the development of GLYCOTOPEs product pipeline of glycooptimized biotherapeutics with four products currently in clinical trials.