Antibodies against GlycoTargets as novel platform approach to address unmet needs in cancer therapy

Sarah Mayer-Haie, Antje Danielczyk, Johanna Gellert, Stephanie Gurka, Evelyn Hartung, Anika Jäkel, Naomi Kast, Timo Lischke, Theresa Neumann, Manon Weis, Manon Weiske, Patrik Kehler

GlycoTargets

• Glycosylation is strongly altered in cancer reflecting the drastic changes in tumor metabolism or genetic alterations
• Proteins expressed on cancer cells can carry tumor-associated carbohydrates like TF, Tn and sTn antigen

O-Glycosylation of Tumor- and Healthy GlycoTarget Y

Introduction
• GlycoTarget Y is a highly glycosylated cell surface protein that is associated with tumorigenesis and is broadly expressed in several cancer indications
• However, it is also expressed in many healthy epithelial and lymphoid tissues which for therapeutic use requires an antibody that can distinguish between cancer-associated and healthy tissue expression

GlycoTargets for Superior Tumor-Specificity

• GlycoTargets + Tumor-associated protein/carbohydrate combined epitopes
• GlycoTargets offer superior tumor specificity compared to protein targets, which often show significant expression in healthy organs
• GlycoTargets exhibit reduced off-target/off tumor toxicity, which is key for highly potent therapies
• Suitable GlycoTargets for antibody development were either identified using a cellular screening approach or via RNA sequencing and bioinformatic prediction

Case Study: Antibody Discovery against GlycoTarget Y

O-glycan profiling
• Recombinantly produced GlycoTarget Y carries mainly TF glycans
• GlycoTarget Y purified from healthy PBMCs carries larger and mainly sialylated glycan structures

Structured Approach to Antibody Generation
• A proprietary toolbox of cell lines is used to produce fully characterized and highly pure cancer-specific GlycoTargets for targeted immunization approaches

References


We aim to continuously expand our collaborations with industry partners and academic centers to further exploit the unique potential of our technology. For further discussion please contact business.development@glycotope.com or visit our webpage https://www.glycotope.com/contact/