

PROmiGlykAN

Process chain for the production of therapeutic glycoproteins using miRNA regulation and glycan analytics

Institute for Applied Biotechnology (IAB)

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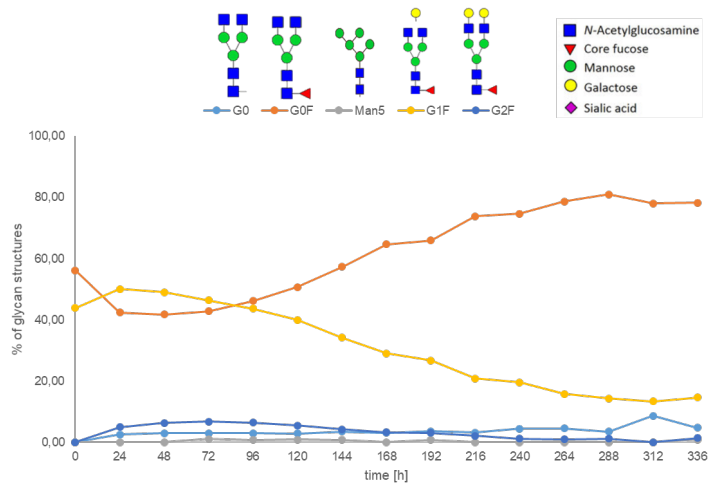
Partners Rentschler Biotechnology | Hochschule Aalen

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Project description Modern biopharmaceuticals such as monoclonal antibodies for the treatment of cancer are highly complex protein drugs. The therapeutic effect is usually dependent on so called post translational modifications, including specific glycan structures on protein molecules. For the industrial production of biopharmaceuticals, chinese hamster ovary cells (CHO) are the main production hosts, although they don't produce proteins carrying human glycan structures. Since this may lead to immunological side effects and lowered efficacy of the drugs, this cooperation project between academia and industry aims at modulating glycan structures using the highly innovative miRNA technology to modify glycan patterns on protein drugs. Synthetic biology in combination with bioinformatic approaches to efficiently select suitable miRNA targets will lead to the generation of production cell lines and production processes which enable the manufacturing of high quality biopharmaceuticals with stable pre-defined glycan patterns.

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PROmiGlyKAN: During the course of a process, the glycan pattern of a biopharmaceutical product may change when using conventional producer cell lines.