

糖鎖工学 (館野 浩章) Glycan engineering (TATENO Hiroaki)



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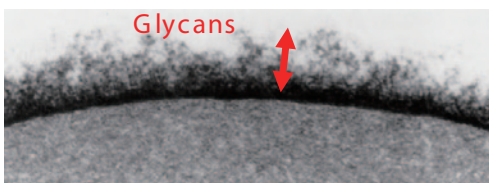
グライコミクスための新技術の開発と細胞一斉解析

微生物から哺乳動物まで、全ての生物を構成する細胞の最も外側は糖鎖で覆われており、細胞と細胞の会話を取りもつ仲介役として働いています。また糖鎖は、細胞の種類や状態（分化やがん化など）で変化することから「細胞の顔」と呼ばれ、創薬の標的としても期待されています。このように糖鎖は魅力溢れる分子ですが、構造が複雑であるが故に、機能の理解や応用は十分ではありません。私の研究室では糖鎖工学、タンパク質工学、細胞生物学、化学生物学などの技術を融合し、様々な細胞のグライコムを定量的・網羅的に極限の精度と分解能で解析するための技術を開発しています。そして、幹細胞、がん細胞、微生物など様々な細胞の糖鎖を読み解くことで、社会に貢献する革新的技術を開発しています。糖鎖研究には多くの宝が眠っています。糖鎖の基礎から応用までの研究に興味を持って下さる方、是非一緒に研究しましょう！

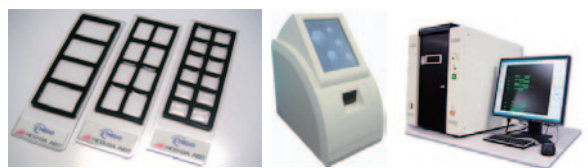
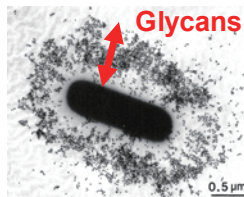
Development a novel technology for glycomics and simultaneous cellular analysis

From the microorganisms to the mammals, the outermost cell surfaces of all organisms are covered with glycans, acting as an intermediary role over the conversation between cells and cells. In addition, glycans are called "cell features" because they change with the type and state of cells (differentiation, tumorigenesis etc.) and are also expected as targets of drug discovery. In this way, glycans are attractive molecules, but due to the complex structure, understanding the functions and application of glycans is not sufficient. In my laboratory, we have been developing technologies to quantitatively and comprehensively analyze the glycome of various cells with extreme precision and resolution by fusing various technologies such as glycan engineering, protein engineering, cell biology, and chemical biology. We have been developing innovative technologies that contribute to society by analyzing glycans of various cells such as stem cells, cancer cells, and microorganisms. If you are interested in research on glycans from basics to applications, let's study together!

Mammalian cells



Bacteria



All cells are covered with glycans

Glycan profiling technology