

## Luncheon seminar with GlyTech, Inc. at the 32th Annual meeting of the Japanese Society of Carbohydrate Research

**Kyoto (Japan), 12 August 2013** – On 6<sup>th</sup>, August 2013, Mr. Hiroaki Asai, CEO at GlyTech, Inc. gave a presentation which title was “Industrial applications of Glycans” at Luncheon Seminar hosted by Sumitomo Bakelite Co., Ltd. during the 32th Annual Meeting of the Japanese Society of Carbohydrate Research in Osaka, Japan.

### [Seminar summary]

GlyTech has developed the technologies to produce highly purified human type glycans and succeeded in supplying a variety of the glycans in a kilogram-scale. This achievement enabled GlyTech to put their knowledge and know-how to practical use. Glycan microarray was successfully prepared in collaboration with Sumitomo Bakelite. In addition, glycan conjugation toward peptides (somatostatin analog) and chemical synthesis of glycoproteins (interferon  $\beta$ -1a) were reported. Mr. Asai also introduced that GlyTech preformed the press release with Bachem AG in July, 2013 regarding a chemical synthesis of interferon  $\beta$ -1a for industrial scale.

### [Photos during the seminar]



The seminar room was filled to capacity and the seminar was a great success.

GlyTech's technologies are briefly introduced on the next page. For further information, please contact us below.

### **GlyTech, Inc.**

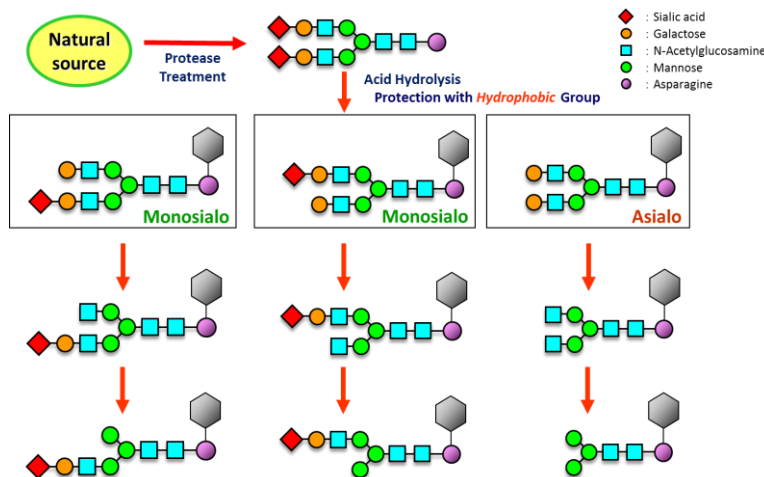
Business Development

Chudoji-minami machi KRP#1-109, Shimogyo-ku, Kyoto 600-8813, JAPAN

Tel: +81-75-315-9218 Fax: +81-75-315-9225 Email: [glytech-info@glytech.jp](mailto:glytech-info@glytech.jp)

## 1. Large-scale preparation of Human type glycan and the library.

GlyTech has successfully developed the technologies to produce highly purified human type glycans for KG-scale. This achievement enabled us to prepare a variety of glycans, so-called glycan library. Now, we are investigating to expand our glycan library by use of enzymes such as glycosyltransferases.



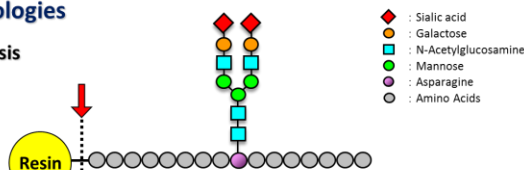
## 2. Glyco-conjugation technologies

Because GlyTech's glycans are naturally found in human, the glycans would become very safe materials. GlyTech proposes a novel screening system combined with the glycan library and glycan conjugation technologies toward bioactive peptides/proteins for drug discovery tools. Through the system, GlyTech can optimize the modification sites, the glycan structures and glycan number not only to improve PK/PD property but also create patentable candidates for your projects.

### Glycosylation technologies

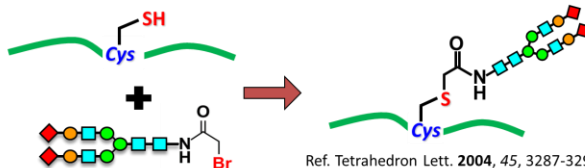
#### ✓ Solid phase synthesis

Fmoc chemistry  
Boc chemistry



Ref. Angew. Chem. Int. Ed. **2003**, 42, 2537-2540

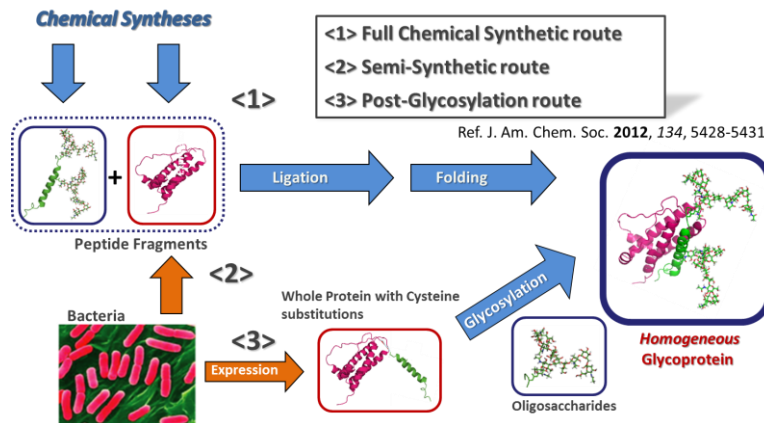
#### ✓ Solution phase synthesis



Ref. Tetrahedron Lett. **2004**, 45, 3287-3290

### 3. Glycoprotein synthesis technology

Generally, biopharmaceutical products are prepared by cell expression systems, which attach a variety of glycans onto expressed proteins, therefore, biopharmaceutical products are known to be a mixture of glycoforms. By use of chemical approaches, GlyTech has succeeded to control the glycosylation patterns and obtain a glycoprotein with a single form glycan.



#### About GlyTech

GlyTech is an independent, technology-based, private company founded in 2012 in Kyoto, Japan. GlyTech is the only company to manufacture human type glycans in kilogram scale and to develop unique glycopeptides and glycoproteins as innovative biochemicals.