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Prof. Kwok-Kong Tony Mong / Department of Applied Chemistry

Organic Synthesis, Synthesis and Design of glycoconjugates, Carbohydrate Chemistry

Mong Lab is an Organic Synthesis Research Laboratory of the Applied Chemistry Department, NCTU. We specialized on:

1. Organic synthesis: development new methods and strategies to tackle unsolved chemistry problems.
2. Carbohydrate chemistry: synthesis of rare sugars and bacterial glycoconjugates for biological studies.
3. Recent development: synthesis of angucyclines and related compounds for anti-tumor studies (with National University of Taiwan, Institute of Biological Chemistry in Academia Sinica

We are also working on the development of methods for quick and accurate detection of pathogenic bacteria and toxins that present in food. This project is collaborated with Prof Y.C. Chen in our department.

Achievement:

1. First synthesis of carbohydrate antigens of E coli (Fig 1).
2. Development of "formamide-modulated glycosylation" for construction of 1,2-cis α-glycosidic bond (Fig. 2).
3. Use of C6 Picoloyl protecting group for stereochemical control in the formation of β-glycosidic bond (Fig. 3).
4. Elected 2015 Emerged investigator from Royal Chemical Society
5. Editorial Broad member of Carbohydrate of Elsevier

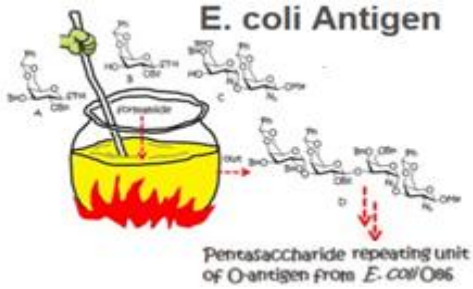

Fig. 1 Featured in ChemistryView, Wiley, 2014, *Asian J. Org. Chem.* **2014**, 3, 870

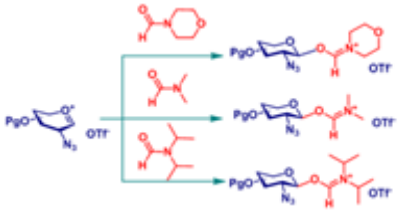

Fig. 2. (a) *Angew. Chem. Int. Ed.*, **2011**, 50, 7315. (b) *Org. Lett*., **2013**, 15, 5290. (c) *Org. Biomol Chem*., **2014**, 12, 1184

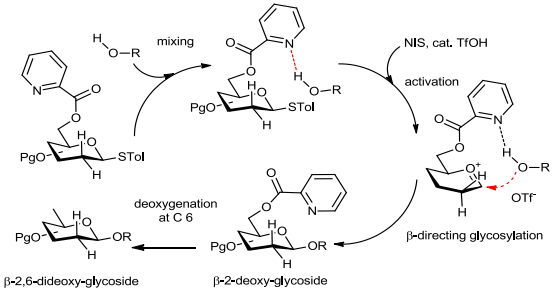

Fig. 3. *Chem. Commun.*, **2015**, 51, 5394.