

國立臺灣大學生化科學研究所
110 學年度第 2 學期
「醣質生物學」 Glycobiology

課號：BChem 7019

課程識別碼：B46 M1240

授課老師：邱繼輝、安形高志、林俊宏、呂桐睿

上課時間：每星期三 15:30 PM – 17:20 PM

上課地點：生化館 N101 教室

課程概述

THIS COURSE AIMS TO TEACH THE FUNDAMENTALS AND APPLICATIONS OF GLYCOBIOLOGY IN THE BROADER CONTEXT OF FUNCTIONAL GLYCOMICS, BASED ON THE RECENTLY UPDATED TEXTBOOK “ESSENTIALS OF GLYCOBIOLOGY 2ND EDITION”, WHICH IS FREELY AVAILABLE ON THE NCBI BOOKSHELF, AND OTHER WEB MATERIALS ON THE NATURE FUNCTIONAL GLYCOMICS GATEWAY. FROM THE CAUSE AND CONSEQUENCES OF ONCO-DEVELOPMENTAL CHANGES IN GLYCOSYLATION TO PROTEINS THAT RECOGNIZE, BIND AND MEDIATE THE FUNCTIONS OF GLYCANS, STUDENTS ARE INTRODUCED TO ESSENTIAL CONCEPTS AND RECENT DEVELOPMENTS IN THE FIELD. CURRENT PURSUE IN BOTH BASIC RESEARCH AND MEDICAL APPLICATIONS, INCLUDING THE HISTORICAL DEVELOPMENT OF NEURAMINIDASE INHIBITORS (E.G. TAMIFLU) AND GLYCANS INVOLVED IN VIRAL INFECTIONS ARE DISCUSSED IN THE CONTEXT OF WHAT CHEMICAL APPROACHES ARE AVAILABLE TO GLYCOBIOLOGISTS FOR DIAGNOSTICS AND THERAPEUTICS. SEMINARS ARE ORGANIZED FOR STUDENTS IN GROUPS TO PRESENT AND DISCUSS KEY ORIGINAL RESEARCH PAPERS, WHICH TOGETHER WITH FOLLOWING UP WRITTEN REPORT, WILL CONSTITUTE THE PRINCIPAL COURSE WORK AND ASSESSMENT.

目標：本課程旨在讓學生了解醣化學的概論並使他們能夠：1) 自信地閱讀此領域的文獻，2) 為以後深入此領域的研究做好準備。

Goals: This course intended to give students an overview of glycoscience in turn enabling them to: 1) read literature in this area with confidence and 2) be prepared for future more in-depth study of the area.

評分：學生將依學期末的演講被評分。此外，學生必須出席所有的課程，包括其他同學的演講。曠課超過兩節課的學生，其等第被降低的細節如下：三次曠課–降低三分之一個等第（如 A–至 B+）；四次曠課–降低一個完整的等第（如 A–至 B–）；五次曠課–降低兩個等第（如 A–至 C–）；六次或以上曠課–課程不及格。

Assessment: Students will be evaluated on the basis of a presentation at the end of the semester. In addition, attendance in all classes, including student presentations, is required. Students who miss more than two classes will have their grades reduced as follows: three absences – reduction of one-third a letter grade (e.g., A– to B+); four absences – reduction of a full letter grade (e.g., A– to B–); five absences – reduction of two letter grades (e.g., A– to C–); six or more absences – failure in course.

週次	日期	授課教師	授課內容
1	2/16	Todd	A Primer on Carbohydrate Structure and Conformation
2	2/23	Khoo	Fundamental aspects of Protein Glycosylation
3	3/02	Khoo	Diverse range of O-glycosylation
4	3/09	Khoo	Analytical and Functional Glycomics
5	3/16	Todd	Microbial Glycans and Biophysical Methods
6	3/23	Angata	General aspects of GBP and Galectins
7	3/30	Angata	C-type Lectins
8	4/06	Angata	Siglecs and Sialylation
9	4/13	Todd	Chemical Glycosidic Bond Formation
10	4/20	Hans	Chemical and Translational Glycobiology I
11	4/27	Hans	Chemical and Translational Glycobiology II
12	5/04	Hans	Chemical and Translational Glycobiology III
13	5/11	All	Student Presentation, Q&A, and Commentary by professor
14	5/18	All	Student Presentation, Q&A, and Commentary by professor
15	5/25	All	Student Presentation, Q&A, and Commentary by professor
16	6/01	All	Student Presentation, Q&A, and Commentary by professor