

國立清華大學 102 學年第 1 學期課程大綱

科號	10210LS 575300	組別		學分	2	人數限制	
修課年級	<input type="checkbox"/> 大學部 四 年級以上 <input type="checkbox"/> 碩士班一年級以上(含博士班) <input type="checkbox"/> 碩士班二年級以上(含博士班)						
上課時間	星期三 10:10 am~12:00 am			教室	生二 217		
科目中文名稱	癌症表觀遺傳學與治療特論						
科目英文名稱	Special topics on cancer epigenetics and therapeutics						
任課教師	楊嘉鈴、張壯榮、王雯靜、詹鴻霖、陳令儀						
擋修科目				擋修分數			

※下列各欄由任課教師提供※

一、課程說明

**Course Description:**

This lecture will provide the front-edge research and technology in the fundamental and practical aspects in cancer epigenetics and therapeutics. A major focus is the molecular genetic and epigenetic basis of cancer. The course also covers the current bioimaging analysis and biomarkers discovery pertinent to diagnosis of early cancer detection. The focus of the course is research led teaching in multiple aspects of translational cancer research.

This lecture is aimed to train students who wish to:

- 1) Develop their research skills in cancer epigenetics and therapeutics;
- 2) Develop advanced knowledge in specific topics on epigenetics and translational oncology.

Modules are taught using a combined means: lectures, tutorials, and workshops.

Lectures are provided by leaders in the field of translational oncology from both scientific and medical backgrounds.

The teaching modules are:

- Overview of Molecular Oncology (Dr Yang)
- Cancer Epigenetics (Dr Wang)
- Cancer Metastasis & Biomarker Discovery (Dr Chan)
- Cancer Signal Transduction (Dr Chen)
- Chromatin and Epigenetics (Dr Chang)
- Research Skills

## 二、指定用書

1. Handouts
2. Assigned journal articles

## 三、參考書籍

1. Handbook of Epigenetics. The New Molecular and Medical Genetics, edited by T. Tollefsbol, Academic Press, 2011
2. The Biology of Cancer, 2007; 2<sup>nd</sup> edition, 2013. Author: R. A. Weinberg

## 四、教學進度

Week	Date	Lecturer	Topics
1	101/09/18	楊嘉鈴	Cancer etiology, epidemiology and carcinogenesis mechanisms
2	101/09/25	楊嘉鈴	Overview of cancer genes and their functions
3	101/10/02	張壯榮	Euchromatin and heterochromatin
4	101/10/09	張壯榮	Position effects
5	101/10/16	張壯榮	Chromatin assembly
6	101/10/23	王雯靜	Epigenetics in cancer
7	101/10/30	王雯靜	Chromatin modifier enzymes
8	101/11/06	詹鴻霖	Tools for cancer biomarker discovery
9	101/11/13	詹鴻霖	Angiogenesis, metastasis and invasion
10	101/11/20	No Class	全校運動會
11	101/11/27	王雯靜	Nutri-epigenetics
12	101/12/04	陳永恩	The techniques of DNA methylation
13	101/12/11	No Class	Midterm report due
14	101/12/18	Invited speaker	Special Seminar
15	101/12/25	陳令儀	Signaling and gene regulation in cancer
16	102/01/01	No Class	New Year
17	103/01/08	陳令儀	Epigenetics in stem cells and during differentiation
18	103/01/15	No Class	Final report due

#### 五、成績考核

作業、報告或測驗，由授課各老師訂定，五位老師之每部分占學期總成績 20%

#### 六、講義位址

可連結之網頁位址: iLSM (<http://lms.nthu.edu.tw/>)