

課程流水號 Serial Number	24050
課號 Course Number	LS7024
班次 Class	*
科目名稱(中文) Course Title(in Chinese)	細胞訊息傳導與疾病分子標靶
科目名稱(外文) Course Title(In English or other languages)	Signal Transduction and Disease Drug targets
授課老師(中文) Instructor(in Chinese)	金秀蓮
授課老師(外文) Instructor(In English or other languages)	Shiow-Lian Catherine Jin
辦公時間(中文) Office Hour(in Chinese)	Monday 2:00-5:00 pm
辦公時間(外文) Office Hour(In English or other languages)	Monday 2:00-5:00 pm
課程目標(中文) Course Objective(in Chinese)	This course will introduce (1) The concepts of Signal Transduction and important signaling pathways, (2) The primary signaling molecular mechanisms that underlie the initiation and progression of disease processes, (3) Experimental approaches for studying regulation of signal pathways that lead to identification of novel targets for drug intervention. (4) The Clinical implications of various signal transduction pathways.
課程目標(外文) Course Objective(In English or other languages)	This course will introduce (1) The concepts of Signal Transduction and important signaling pathways, (2) The primary signaling molecular mechanisms that underlie the initiation and progression of disease processes, (3) Experimental approaches for studying regulation of signal pathways that lead to identification of novel targets for drug

	intervention. (4) The Clinical implications of various signal transduction pathways.
授課內容(中文) Course Description(in Chinese)	<ol style="list-style-type: none"> <li>1. 細胞訊息傳導與藥品研發概論</li> <li>2. G蛋白偶合受體訊息傳導與疾病分子標靶之應用 (I)</li> <li>3. A2A adenosine receptor signaling and the drug target of Huntington's disease</li> <li>4. G蛋白偶合受體訊息傳導與疾病分子標靶之應用 (II)</li> <li>5. cAMP訊息傳導與抗發炎藥劑研發</li> <li>6. 健康與疾病心臟的興奮與收縮耦聯以及鈣離子訊息傳遞</li> <li>7. 民族掃墓節補假 (no class)</li> <li>8. JAK/STAT/SOCS訊息傳導與癌症藥物</li> <li>9. 血管內皮生長因子(VEGF)與大腸癌治療</li> <li>10. Toll-like receptor signaling與免疫調節劑的開發</li> <li>11. TNF訊息傳導及anti-TNF治療</li> <li>12. Antisense oligonucleotide therapy for spinal muscular atrophy</li> <li>13. 表皮生長因子受器(EGFR)訊息傳導與疾病治療</li> <li>14. MicroRNA與癌症藥物</li> <li>15. Targeting PI3K-AKT for suppression of tumor growth and cancer metastasis</li> <li>16. 免疫檢查點阻斷劑及癌症免疫療法</li> <li>17. Neurological disorders and cell signal transduction in central and peripheral nervous systems</li> <li>18. 期末心得分享與報告</li> </ol>
授課內容(外文) Course Description(In English or other languages)	<ol style="list-style-type: none"> <li>1. 細胞訊息傳導與藥品研發概論</li> <li>2. G蛋白偶合受體訊息傳導與疾病分子標靶之應用 (I)</li> <li>3. A2A adenosine receptor signaling and the drug target of Huntington's disease</li> <li>4. G蛋白偶合受體訊息傳導與疾病分子標靶之應用 (II)</li> <li>5. cAMP訊息傳導與抗發炎藥劑研發</li> <li>6. 健康與疾病心臟的興奮與收縮耦聯以及鈣離子訊息傳遞</li> <li>7. 民族掃墓節補假 (no class)</li> <li>8. JAK/STAT/SOCS訊息傳導與癌症藥物</li> <li>9. 血管內皮生長因子(VEGF)與大腸癌治療</li> </ol>

	10. Toll-like receptor signaling與免疫調節劑的開發 11. TNF訊息傳導及anti-TNF治療 12. Antisense oligonucleotide therapy for spinal muscular atrophy 13. 表皮生長因子受器(EGFR)訊息傳導與疾病治療 14. MicroRNA與癌症藥物 15. Targeting PI3K-AKT for suppression of tumor growth and cancer metastasis 16. 免疫檢查點阻斷劑及癌症免疫療法 17. Neurological disorders and cell signal transduction in central and peripheral nervous systems 18. 期末心得分享與報告
教科書/參考書(中文) Textbook/References(in Chinese)	Articles published in books and journals
教科書/參考書(外文) Textbook/References(In English or other languages)	Articles published in books and journals
自編教材比例 Self-compiled Textbook/References Proportion	
授課方式 Requirements	講授Lecture
評量配分比重(中文) Grading(in Chinese)	Quiz & homework: 80%; Participation/Attendance/Discussion, 20%.
評量配分比重(外文) Grading(In English or other languages)	Quiz & homework: 80%; Participation/Attendance/Discussion, 20%.
課程所屬學制 Educational System	博士班(Doctoral Programme)
課程領域 Course Domain	進階學科 生理 微生物與免疫 生物科技 醫藥
跨系課程領域 Cross Department Course Domain	

系所核心能力 Core Competencies of Department	0	1	2	3	4	5	評量方式 Corresponding Assessments
	不具備 Zero	非常低 Very Low	低 Low	普通 Medium	高 High	非常高 Very High	
強度指數 Overall Rating  高等生物專業知識 Advanced Biological Sciences	●	●	●	●	●	●	<input checked="" type="checkbox"/> 紙筆測驗/會考 (Test/Exam) <input checked="" type="checkbox"/> 作業練習 (Assignments) <input checked="" type="checkbox"/> 口頭報告/口試 (Presentation/Oral Exam) <input type="checkbox"/> 專題研究報告(書面) (Research Report(printed on paper)) <input type="checkbox"/> 實作/實驗 (Practices/Experiments) <input type="checkbox"/> 出席/課堂表現 (Attendance/Performance) <input type="checkbox"/> 學習檔案評量 (Portfolios Assessment) <input type="checkbox"/> 自我評量/同儕互評 (Self Assessment/ Peer Assessment) <input type="checkbox"/> 作品/創作展演 (Products/Creative Performance) <input type="checkbox"/> 其他(Others) <input type="checkbox"/> 無(No assessment)

<p>創新及整合研究 Innovative and integrative research</p>	●	●	●	●	●	●	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> 紙筆測驗/會考 (Test/Exam)</li> <li><input checked="" type="checkbox"/> 作業練習 (Assignments)</li> <li><input type="checkbox"/> 口頭報告/口試 (Presentation/Oral Exam)</li> <li><input type="checkbox"/> 專題研究報告(書面) (Research Report(printed on paper))</li> <li><input type="checkbox"/> 實作/實驗 (Practices/Experiments)</li> <li><input checked="" type="checkbox"/> 出席/課堂表現 (Attendance/Performance)</li> <li><input type="checkbox"/> 學習檔案評量 (Portfolios Assessment)</li> <li><input type="checkbox"/> 自我評量/同儕互評 (Self Assessment/ Peer Assessment)</li> <li><input type="checkbox"/> 作品/創作展演 (Products/Creative Performance)</li> <li><input type="checkbox"/> 其他(Others)</li> <li><input type="checkbox"/> 無(No assessment)</li> </ul>
--	---	---	---	---	---	---	---

<p>專業寫作與表達 Professional writing and presentation</p>	●	●	●	●	●	●	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> 紙筆測驗/會考 (Test/Exam)</li> <li><input checked="" type="checkbox"/> 作業練習 (Assignments)</li> <li><input type="checkbox"/> 口頭報告/口試 (Presentation/Oral Exam)</li> <li><input type="checkbox"/> 專題研究報告(書面) (Research Report(printed on paper))</li> <li><input type="checkbox"/> 實作/實驗 (Practices/Experiments)</li> <li><input checked="" type="checkbox"/> 出席/課堂表現 (Attendance/Performance)</li> <li><input type="checkbox"/> 學習檔案評量 (Portfolios Assessment)</li> <li><input type="checkbox"/> 自我評量/同儕互評 (Self Assessment/ Peer Assessment)</li> <li><input type="checkbox"/> 作品/創作展演 (Products/Creative Performance)</li> <li><input type="checkbox"/> 其他(Others)</li> <li><input type="checkbox"/> 無(No assessment)</li> </ul>
--	---	---	---	---	---	---	---

<p>國際觀 International vision</p>	●	●	●	●	●	●	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> 紙筆測驗/會考 (Test/Exam)</li> <li><input checked="" type="checkbox"/> 作業練習 (Assignments)</li> <li><input type="checkbox"/> 口頭報告/口試 (Presentation/Oral Exam)</li> <li><input type="checkbox"/> 專題研究報告(書面) (Research Report(printed on paper))</li> <li><input type="checkbox"/> 實作/實驗 (Practices/Experiments)</li> <li><input checked="" type="checkbox"/> 出席/課堂表現 (Attendance/Performance)</li> <li><input type="checkbox"/> 學習檔案評量 (Portfolios Assessment)</li> <li><input type="checkbox"/> 自我評量/同儕互評 (Self Assessment/ Peer Assessment)</li> <li><input type="checkbox"/> 作品/創作展演 (Products/Creative Performance)</li> <li><input type="checkbox"/> 其他(Others)</li> <li><input type="checkbox"/> 無(No assessment)</li> </ul>
-------------------------------------	---	---	---	---	---	---	---