

## 112-1

### The molecular mechanisms of the programmed cell death

### 細胞程序性死亡的分子機轉

2023/6/20 製作

**Course Goals:** This course covers the topics of molecular mechanisms that regulate the programmed cell death (PCD). Topics include an overview of apoptosis; the role of mitochondria in apoptosis; the Bcl-2 protein family; the caspases; the death receptors; apoptosis in diseases; necroptosis; pyroptosis; ferroptosis; and other non-apoptotic programmed cell death. The primary goal of this course is to let students gain insights and learn recent findings in the programmed cell death field.

**Course Format:** This course will incorporate lecture, discussion, and student report

**Course Materials:** Review articles and recent published research articles on PCD-related field

**Class format:** The class will include lectures and discussions in some of the topics.

**The final report:** Please find a topic related to the topics lectured in the course and prepare a report following the guidelines as follows. The report should contain (a). Background and significance (b). Unsolved issues to be addressed (c). Goals (aims) to be pursued (d). Experimental rationale, strategy, and methods (e). Expected results (f). Conclusion and discussion (g). References

**Grading:** (1) Student's performance will be evaluated throughout the course by attendance and participation (15%), presentation in the class (45%), and a final report (oral)(40%).

Class Time: Friday 10:10 am~12:00 pm

Classroom: 303D

Coordinator(s): Dr. Chi-Wu Chiang (蔣輯武), ext. 3637, 3591

Teaching assistant(助教): 顏泓淳 ext. 3591

Date	Topic	Lecturer
9/8	Introduction to the programmed cell death and apoptosis	蔣輯武
9/15	The programmed cell death in <i>C. elegans</i>	陳昌熙
9/22	Apoptosis in development of <i>Drosophila</i>	姜學誠
10/6	The programmed cell death and apoptosis in murine development	蔣輯武
10/13	The prosurvival Bcl-2 protein family	蔣輯武
10/20	The pro-apoptotic Bcl-2 protein family	蔣輯武
10/27	Mitochondria and apoptosis	蔣輯武
11/3	The biochemistry of apoptosis	蔣輯武
11/10	Caspases: the central executioners of apoptosis	蔣輯武
11/17	PBL on apoptosis	蔣輯武
11/24	The extrinsic pathway of apoptosis	蔣輯武
12/1	Application of apoptosis in therapeutics	吳梨華
12/8	Non-apoptosis PCD I	蔣輯武
12/15	Non-apoptosis PCD II	蔣輯武
12/22	Autophagy and apoptosis	張志鵬
12/29	The final report	蔣輯武