

113-1 (2024 Fall)

The molecular mechanisms of the programmed cell death

細胞程序性死亡的分子機轉

2024/6/28 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 report) (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): ext. 3591

Week	Date	Topic	Lecturer
1	9/13	Introduction to the programmed cell death and apoptosis	蔣輯武
2	9/20	The programmed cell death in <i>C. elegans</i>	陳昌熙
3	9/27	Apoptosis in development of <i>Drosophila</i>	姜學誠
4	10/4	The programmed cell death and apoptosis in murine development	蔣輯武
5	10/11	The prosurvival Bcl-2 protein family	蔣輯武
6	10/18	The pro-apoptotic Bcl-2 protein family	蔣輯武
7	10/25	Mitochondria and apoptosis	蔣輯武
8	11/1	The biochemistry of apoptosis	蔣輯武
9	11/8	Caspases: the central executioners of apoptosis	蔣輯武
10	11/15	PBL on apoptosis	蔣輯武
11	11/22	The extrinsic pathway of apoptosis	蔣輯武
12	11/29	Application of apoptosis in therapeutics	吳梨華
13	12/6	Non-apoptosis PCD I	蔣輯武
14	12/13	Non-apoptosis PCD II	蔣輯武
15	12/20	Non-apoptosis PCD III	蔣輯武
16	12/27	Autophagy and apoptosis	張志鵬
17	1/3/2025	The final report	蔣輯武