

SCBM 344
Cellular and Molecular Pathology

Semester 2/2017

Department of Pathobiology
Faculty of Science
Mahidol University

Course Syllabus

(Lecture-Lab-Self study)

SCBM 344 Cellular and Molecular Pathology 2(2-0-4)

Course description

Biochemical, molecular and cellular changes leading to the development and progression of human diseases, such as those from pathogenic microorganism infection, toxic chemical and physical agents, ischemia, hypoxia, free radical-mediated oxidative stress and other types of stress.

Prerequisite: SCBM 341 General Pathology

Type of course: Required course

Session: 2nd semester, 3rd year student

Course Condition class size: None

Course objectives

By the end of this course the students are able to;

1. Explain how the cells response to stress and injurious stimuli
2. Describe general mechanisms of cell injury
3. Explain cellular and molecular changes leading to the development and progression of human diseases

Course outline

Date	Time	Topic		Lecturer
19 Jan	1.00-3.00	Introduction to cellular and molecular pathology	L1	ANJ
26 Jan	1.00-3.00	Mechanisms of cell injury: Oxidative stress	L2	PS
2 Feb	1.00-3.00	Mechanisms of cell injury: Loss of calcium homeostasis	L3	ANJ
9 Feb	1.00-3.00	Mechanisms of cell injury: Mitochondrial damage	L4	PC
16 Feb	1.00-3.00	Mechanisms of cell injury: ATP depletion and hypoxia	L5	PC
23 Feb	1.00-3.00	Cellular and molecular pathology from chemical and physical injuries	L6	WJ
2 March	1.00-3.00	Q&A session	L7	Staff
13 March	1.00-3.00	Midterm Examination (L1-L6)		
21 March	1.00-3.00	Cellular and molecular pathology of Immunological disorders	L8	WP
28 March	1.00-3.00	Cellular and molecular pathology of neurodegenerative disorders	L9	YN
30 March	1.00-3.00	Cellular and molecular pathology of parasitic infection	L10	NK
20 April	1.00-3.00	Cellular and molecular pathology of viral infection	L11	PC
27 April	1.00-3.00	Cellular and molecular pathology of bacterial infection	L13	YN
4 May	1.00-3.00	Cellular and molecular pathology of fungal infection	L12	SN
11 May	1.00-3.00	Cellular and molecular pathology of cancer	L14	PS
18 May	1.00-3.00	Q&A session	L15	Staff
24 May	1.00-3.00	Final Examination (L8-L14)		
			30 hr	

Teaching Method

In-class lectures and group discussion

Teaching Media

Powerpoint presentation, Handout

Measurement and Evaluation of Students Achievement

- | | |
|------------------------------------|-----|
| 1. Class attendance | 10% |
| 2. Examination (Short answer/ MCQ) | 90% |

Course Evaluation

1. Students gain knowledge according to the course objectives.
2. Students participate in class \geq 80% of total hours.
3. Grading will be A, B+, B, C+, C, D+, D or F

References

1. Kumar V, Abbas A, and Aster J. Robbins Basic Pathology. 10th Edition. Elsevier, 2017
2. Coleman WB and Tsongalis GJ. Molecular pathology: the molecular basis of human disease. Academic Press, 2009.

Instructors

1. ANJ = Assistant Professor Amornrat Naranuntarat Jensen, Ph.D
2. NK = Niwat Kangwanrangsang, Ph.D
3. PS = Assistant Professor Prasit Suwannalert, Ph.D
4. SN = Somphong Narkpinit, M.D.
5. WJ = Associate Professor Wanee Jiraungkoorskul, Ph.D
6. WP = Witchuda Payuhakrit, Ph.D
7. YN = Yaowarin Nakornpakdee, Ph.D

Course Coordinator

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Requesting an appeal

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