



CURSO DE POSTGRADO

Basic Concepts in Cell Signaling

Nombre Curso

SEMESTRE

1º

AÑO

2017

PROF. ENCARGADO

Andrew Quest
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Nombre Completo

Cédula Identidad

Advanced Center for Chronic Diseases (ACCDiS), Center for Molecular Studies of the Cell (CEMC) & Instituto de Ciencias Biomédicas, Facultad de Medicina, Universidad de Chile

UNIDAD ACADÉMICA

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TIPO DE CURSO

Complementario

(Básico, Avanzado, Complementario, Seminarios Bibliográficos, Formación General)

CLASES	30 H
SEMINARIOS	27 H
PRUEBAS	3 H
TRABAJOS	20 H
Nº HORAS PRESENCIALES	60 H
Nº HORAS NO PRESENCIALES	90 H
Nº HORAS TOTALES	150 H

CRÉDITOS

5

(1 Crédito Equivale a 30 Horas Semestrales)

CUPO ALUMNOS

5

(Nº mínimo)

25

(Nº máximo)

PRE-REQUISITOS

A reasonable understanding of cell and molecular biology. Ability to read and understand papers in English. Successful completion of this course will be considered an obligatory prerequisite to subsequent participation in signaling courses that may be offered later (for instance "Cell Signaling in Biomedicine")

INICIO

28 Marzo

TERMINO

06 June

DIA/HORARIO
POR SESION

Tuesday 14:00 17:30 h

DIA / HORARIO
POR SESION

Wednesday 09:00 a 12:30 h

LUGAR

AUDITORIO CEMC, 1er piso, Block B, Programa de Fisiopatología, Facultad Medicina, Universidad de Chile

Escuela De Postgrado (Sala a determinar) u otro lugar

METODOLOGÍA

The course will last 9 weeks and consist of 1-2 lectures one day (Wednesday) followed by a discussion of 2 papers dealing with the respective topics the following week (Tuesday)

EVALUACIÓN (INDICAR % DE CADA EVALUACION)

Students will be evaluated in 3 ways:

- Oral participation in discussion of papers every week (40%)
- Answer in writing to questions during the semester (20%)
- Final oral exam (40%).

Grades from these activities will be averaged taking into account the percentiles indicated to generate the final grade for the course

PROFESORES PARTICIPANTES (INDICAR UNIDADES ACADEMICAS)

- Molecular & Cell Biology Program, ICBM: Lisette Leyton Ph.D (Professor), Andrew Quest Ph.D. (Professor) and Sergio Lavandero Ph.D (Professor).
- Department of Biochemistry & Molecular Biology, Faculty of Chemical and Pharmaceutical Sciences: Mario Chiong Ph.D (Associate Professor) and Sergio Lavandero Ph.D (Professor).

DESCRIPCIÓN

In this course basic to advanced knowledge in a number of signaling pathways relevant to the development of human diseases will be discussed. The importance of protein targeting, supramolecular complex formation and subcompartmentalisation of signaling molecules will be emphasized.

OBJETIVOS

Main objective: Understand mechanisms of signal transduction and underlying principles.

CONTENIDOS/TEMAS

Specific aims: Advanced lectures on signaling pathways involving receptors (Tyrosine kinases, G-protein-coupled, cytokine, nuclear) the universal second messengers (Calcium, cyclic AMP and cyclic GMP, lipid second messengers, etc), protein kinases (src, raf-MAPK, PKC, etc.), phosphatases, proteases, downstream effector molecules, as well as a discussion of the relevant literature.

BIBLIOGRAFIA BASICA

Participants should have some basic knowledge of cell and molecular biology, as well as signalling pathways at a level taught in undergraduate courses

BIBLIOGRAFIA RECOMENDADA

Recommended reading will be provided prior to the respective lectures.

**Calendario de actividades
BASIC CONCEPTS CELL SIGNALING 2017**

		FECHA	HORAS PRESENCIALES	HORAS PRESENCIALES	DESCRIPCION ACTIVIDAD	PROFESOR
1	Tuesday	28 March	14.00 - 15.30	1.5	General Introduction Part A. How to write and analyze a research grant	A Quest
		28 March	16.00 - 17.30	1.5	General Introduction Part B. How to write and analyze a paper	S Lavandero
	Wednesday	29 March	09.00 - 12.30	3	Journal Club-1	S Lavandero A Quest
2	Tuesday	04 April	14.00 - 17.30	3	First messengers G protein coupled receptors	S Lavandero
	Wednesday	05 April	09.00 - 10.30	1.5	Tyrosine kinases	L Leyton
		05 April	11.00 - 12:30	1.5	Non-receptor tyrosine kinases	L Leyton
3	Tuesday	11 April	14.00 - 17.30	3	Journal Club-2	S Lavandero L. Leyton
	Wednesday	12 April	9:00 - 12:30	3	Non-lipid second messengers	S. Lavandero
		19 April	CENSO			
	Wednesday	18 April	09.00 - 12.30	3	Lipid second messengers	A. Quest
4	Tuesday	25 April	14.00 - 17.30	3	Journal Club -3 y 4	A. Quest - S. Lavandero
	Wednesday	26 April	09.00 - 12.30	3	Kinases I: PKC, PI3K, MAPKs	A. Quest
5	Tuesday	02 May	14.00 - 17.30	3	Journal Club-5	A. Quest
	Wednesday	03 May	09.00 - 12.30	3	Kinases II: AMPK -mTOR-big MAPK	M. Chiong
6	Tuesday	09 May	14.00 - 17.30	3	Journal Club 6	M. Chiong
	Wednesday	10 May	09.00 - 12.30	3	Phosphatases, Proteases	A. Quest
7	Tuesday	16 May	14:00 - 17:30	3	Journal Club-7	A. Quest
	Wednesday	17 May	09:00-12:30	3	Transcription Factors	M. Chiong
89	Tuesday	23 May	14.00 - 17.30	3	Journal Club-8	M. Chiong
	Wednesday	24 May	09:00 - 12.30	3	Signaling organization & compartmentalization	A. Quest
09	Tuesday	30 May	14.00 - 17.30	3	Journal Club-9	A. Quest
	Wednesday	31 May	09.00-12.30	3	Summary discussion	A. Quest
10	Tuesday	06 June	14.00 - 17.30	20	Oral exam	All