



CURSO DE POSTGRADO

Basic Concepts in Cell Signaling

Nombre Curso

SEMESTRE

1º

AÑO

2018

PROF. ENCARGADO

Andrew Quest

14.672.243-1

PROF. COORDINADOR

Sergio Lavandero

06.770.894-6

Identidad Nombre Completo

Cédula

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

Avanzado

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

CLASES	30 H
SEMINARIOS	28 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

13 March 2018

TERMINO

16 May 2018

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 10 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 ACADÉMICAS)

- 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 sub-compartmentalisation 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

		FECHA	HORAS PRESENCIALES	HORAS PRESENCIALES	DESCRIPCION ACTIVIDAD	PROFESOR
1	Tuesday	13 March	14.00 - 14:30	0.5	General Introduction Part B. How to write and analyze a paper	S. Lavandero
		13 March	15:00 - 17:30	2.5	First messengers G protein coupled receptors	S. Lavandero
2	Wednesday	14 March	09.00 - 10.30	1.5	Tyrosine kinases	A. Quest - L. Leyton
		14 March	11.00 – 12:30	1.5	Non-receptor tyrosine kinases	L. Leyton
	Tuesday	20 March	14.00 - 17.30	3.5	Journal Club-1	A. Quest. S. Lavandero L. Leyton
3	Wednesday	21 March	9:00 – 12:30	3	Non-lipid second messengers	S. Lavandero
	Tuesday	27 March	14.00 - 17.30	3.5	Journal Club-2	S. Lavandero
4	Wednesday	28 March	9:00 – 12:30	3	Lipid second messengers	A. Quest
	Tuesday	03 April	14.00 - 17.30	3.5	Journal Club-3	A. Quest
5	Wednesday	04 April	09.00 – 12.30	3	Kinases I: PKC, PI3K, MAPKs	A. Quest
	Tuesday	10 April	14.00 - 17.30	3.5	Journal Club-4	A. Quest
6	Wednesday	11 April	09.00 – 12.30	3	Kinases II: AMPK –mTOR-big MAPK	M.Chiong
	Tuesday	17 April	14.00 – 17.30	3.5	Journal Club 5	M. Chiong
7	Wednesday	18 April	09.00 – 12.30	3	Phosphatases, Proteases	A. Quest
	Tuesday	24 April	14.00 – 17.30	3.5	Journal Club 6	A. Quest
8	Wednesday	25 April	09:00-12:30	3	Transcription Factors	M.Chiong
	Tuesday	01 May			HOLIDAY	
9	Wednesday	02 May	09:00 -10:30	0.5	General Introduction Part A. How to write and analyze a research grant	A. Quest
		02 May	11:00 -12:30	2.5	Signaling organization & compartmentalization	A. Quest
	Tuesday	08 May	14:00 – 17:30	3.5	Journal Club-7	M. Chiong
	Wednesday	09 May	09:00 – 12:30	3.5	Journal Club-8	A. Quest
10	Tuesday	15 May	14.00 – 17.30	3	Summary discussion	A. Quest
	Wednesday	16 May	09:00 – 12:30	3	ORAL EXAM	All

