



CURSO DE POSTGRADO

Basic Concepts in Cell Signaling

Nombre Curso

SEMESTRE

1º

AÑO

2016

PROF. ENCARGADO

Andrew Quest
Sergio Lavandero

14.672.243-1
06.770.894-6

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

TELÉFONO

+562 2978 6849
+562 2978 2919

E-MAIL

aquest@med.uchile.cl
slavander@uchile.cl

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	60 H
Nº HORAS TOTALES	143 H

CRÉDITOS

4

(1 Crédito Equivale a 30 Horas Semestrales)

CUPO ALUMNOS

5

25

(Nº mínimo)

(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

29 Marzo 2016

TERMINO

07 June 2016

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 2016**

		FECHA	HORAS PRESENCIALES	HORAS PRESENCIALES	DESCRIPCION ACTIVIDAD	PROFESOR
1	Tuesday	29 Marzo	14.00 - 15.30	1.5	General Introduction Part A. How to write and analyze a research grant	A Quest
		29 Marzo	16.00 - 17.30	1.5	General Introduction Part B. How to write and analyze a paper	S Lavandero
	Wednesday	30 Marzo	09.00 - 12.30	3	Journal Club-1	S Lavandero A Quest
2	Tuesday	05 April	14.00 - 17.30	3	First messengers G protein coupled receptors	S Lavandero
	Wednesday	06 April	09.00 - 10.30	1.5	Tyrosine kinases	L Leyton
		06 April	11.00 - 12:30	1.5	Non-receptor tyrosine kinases	L Leyton
3	Tuesday	12 April	14.00 - 17.30	3	Journal Club-2	S Lavandero L Leyton
	Wednesday	13 April	9:00 - 12:30	3	Non-lipid second messengers	S. Lavandero
4	Tuesday	19 April	14.00 - 17:30	3	Journal Club-3	A Quest
	Wednesday	20 April	09.00 - 12.30	3	Lipid second messengers	A. Quest
5	Tuesday	26 April	14.00 - 17:30	3	Journal Club-4	A. Quest
	Wednesday	27 April	09.00 - 12.30	3	Kinases I: PKC, PI3K, MAPKs	A. Quest
6	Tuesday	03 May	14.00 - 17.30	3	Journal Club-5	A Quest
	Wednesday	04 May	09.00 - 12.30	3	Kinases II: AMPK -mTOR-big MAPK	M. Chiong
7	Tuesday	10 May	14.00 - 17.30	3	Journal Club 6	M. Chiong
	Wednesday	11 May	09.00 - 12.30	3	Phosphatases, Proteases	A. Quest
8	Tuesday	17 May	14:00 - 17:30	3	Journal Club-7	A Quest
	Wednesday	18 May	09:00-12:30	3	Transcription Factors	M Chiong
9	Tuesday	24 May	14.00 - 17.30	3	Journal Club-8	M Chiong
	Wednesday	25 May	09:00 - 12.30	3	Signaling organization & compartmentalization	A Quest
10	Tuesday	31 May	14.00 - 17.30	3	Journal Club-9	A Quest
	Wednesday	01 June	09.00-12.30	3	Summary discussion	A Quest
11	Tuesday	07 June	09.00 - 12.30	20	Oral exam	All

