

Master Course 2013-2014 - UAM
BM5 module: GENOMICS, PROTEOMICS AND GENETIC MODIFICATION
Masters of Molecular Biomedicine, Biothechnology,
and Molecular and Cellular Biology
23 September-31 October 2013 (Monday to Friday) 15:00-16:30 h
Aula I: School of Medicine, UAM

Teachers:

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All lectures will be delivered in English

BM5 PROGRAM – UAM COURSE 2013/2014

Monday, 23 September 2013

Introduction to BM5 module: evaluation criteria (15 min)

Coordinators: M^a Jesús Bullido, CBMSO-UAM/CSIC; **Lluís Montoliu**, CNB-CSIC

Use of mice in biomedicine: history, genetics (1h:15 min)

Miguel Manzanares, CNIC

Tuesday, 24 September 2013

Mouse biology and developmental biology

Miguel Manzanares, CNIC

Wednesday, 25 September 2013

Transgenic animals I: standard, genomic, inducible, applications and limitations

Lluís Montoliu, CNB-CSIC

Thursday, 26 September 2013

Transgenic animals II: lentivirus, transposons, nuclear transfer, Zn-finger nucleases

Lluís Montoliu, CNB-CSIC

Friday, 27 September 2013

Student's presentation/discussion of selected papers (SEMINAR)

Monday, 30 September 2013

Mouse functional genomic analysis. Bioinformatic Tools, examples

Lluís Montoliu, CNB-CSIC

Tuesday, 1 October 2013

ES cells and knockout mice I: standard

Sagrario Ortega, CNIO

Wednesday, 2 October 2013

Knockout mice II: inducible, tissue-specific, knockins

Sagrario Ortega, CNIO

Thursday, 3 October 2013

iPS cells et al.

Sagrario Ortega, CNIO

Friday, 4 October 2013

Videos on transgenic mice, ES cells and knockout mice

Lluís Montoliu, CNB-CSIC; **Sagrario Ortega**, CNIO

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Monday, 7 October 2013

Student's presentation/discussion of selected papers (SEMINAR)

Tuesday, 8 October 2013

Fundamentals and applications of transgenesis in zebrafish to study mammalian gene function

José Luis Gómez Skarmeta, CABD-UPO/JA/CSIC, Sevilla

Wednesday, 9 October 2013

Student's presentation/discussion of selected papers (SEMINAR)

Thursday, 10 October 2013

Human Genome and Disease Gene identification

Lourdes Ruiz, CBMSO-UAM/CSIC

Friday, 11 October 2013

Epigenetics

José Fernández Piqueras / Pilar López Nieva, CBMSO-UAM/CSIC

Monday, 14 October 2013

Monogenic hereditary diseases. Pathological mutations.

Lourdes Ruiz, CBMSO-UAM/CSIC

Tuesday, 15 October 2013

Complex diseases. Genetic association. Gene-gene and gene-environment interactions.

M^a Jesús Bullido, CBMSO-UAM/CSIC

Wednesday, 16 October 2012

Genomics: Microarray tools to study human pathology

M^a Jesús Bullido, CBMSO-UAM/CSIC

Thursday, 17 October 2013

Student's presentation/discussion of selected papers (SEMINAR)

Friday, 18 October 2013

Fest of School of Medicine

BM5 PROGRAM – UAM COURSE 2013/2014

Monday, 21 October 2013

Next Generation Sequencing: Basic issues and Applications
Ricardo Ramos Ruiz. PCM

Tuesday, 22 October 2013

Proteomics: basic issues and applications
Ana Isabel Marina, ProteoRed (CBM-CSIC)

Wednesday, 23 October 2013

Experimental therapies. Gene and mutation specific therapies
Lourdes Ruiz, CBMSO-UAM/CSIC

Thursday, 24 October 2013

Student's presentation/discussion of selected papers (SEMINAR)

Friday, 25 October 2013

Proteomic techniques for the study of inherited metabolic diseases
Eva Richard. CBMSO

Monday, 28 October 2013

Pharmacogenetics/Pharmacogenomics
Carmen Ayuso, Instituto de Investigación Sanitaria-Fundación Jiménez Díaz

Tuesday, 29 October 2013

Clinical realities of cell therapies. Applications and translational research
Damián García Olmo, Hospital La Paz-IdiPaz

Wednesday, 30 October 2013

Student's presentation/discussion of selected papers (SEMINAR)

Thursday, 31 October 2013

Final Exam (60 min), Correction and discussion afterwards (30 min)

BM5 Module, Evaluation Criteria Course 2013-2014

Attendance (1 point, 10%): Attendance is mandatory. All students will receive 1 point unless they miss classes without providing a written justification.

Participation (3 points, 30%): Students, in groups of 2-4 persons, will present and discuss a selected scientific article, in English, to the rest of the classroom (25 min). Three papers will be presented each seminar day. Presenting students should engage the rest of students in the class to actively participate in the discussions. Their contribution to the discussions will also be accounted for the evaluation of the group presenting each article.

Written report (3 points, 30%): Each student will receive a gene and will have to prepare a written short report (**4 pages max**, in English) summarising what is known about this gene in different species, notably Human and mouse, its information about genomics and proteomics, published key references, its relationship with known human pathologies, the existence of animal models, etc... according to the topics covered throughout the course. This written report will have to be ready and uploaded at the "UAM Biociencias-Master" web server through the moodle application, **by November 15, 2013**.

Exam (3 points, 30%): The exam (60 min) will be prepared as a test of **25 questions** with 5 possible answers (only 1 will be correct). Wrong answers will not decrease the final mark. The correct answer for each and every question will be provided and discussed at the end of the exam (30 min).