

Master Course 2014-2015 - UAM
BM5 module: GENOMICS, PROTEOMICS AND GENETIC MODIFICATION
Masters of Molecular Biomedicine, Biothechnology,
and Molecular and Cellular Biology
September-November 2014 15:00-16:30 h
Place: Faculty of Medicine. Aula 7

Teachers:

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and

All lectures will be delivered in English

BM5 PROGRAM – UAM COURSE 2014/2015

Monday, 22 September 2014

Introduction to BM5 module: evaluation criteria (15 min)

Coordinators: M^a Jesús Bullido, CBMSO-UAM/CSIC; **Sagrario Ortega**, CNIO

Human genome at a glance (1h:15 min)

Lourdes R Desviat, CBMSO-UAM

Tuesday, 23 September 2014

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

Lluís Montoliu, CNB-CSIC

Wednesday, 24 September 2014

Transgenic animals II: lentivirus, transposons, nuclear transfer

Lluís Montoliu, CNB-CSIC

Thursday, 25 September 2014

Transgenic animals III: editing nucleases

Lluís Montoliu, CNB-CSIC

Friday, 26 September 2014

Student's presentation/discussion of selected papers (SEMINAR 1)

Monday, 29 September 2014

Mouse biology and developmental biology

Miguel Manzanares, CNIC

Tuesday, 30 September 2014

ES cells and knockout mice I: standard

Sagrario Ortega, CNIO

Wednesday, 1 October 2014

Knockout mice II: inducible, tissue-specific, knockins

Sagrario Ortega, CNIO

Thursday, 2 October 2014

iPS cells et al.

Sagrario Ortega, CNIO

Friday, 3 October 2014

Videos on transgenic mice, ES cells and knockout mice

Lluís Montoliu, CNB-CSIC;

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Monday, 6 October 2014

Discussion about the STAP cells.

Miguel Manzanares, CNIC

Tuesday, 7 October 2014

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

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

Wednesday, 8 October 2014

Student's presentation/discussion of selected papers (SEMINAR 2)

Thursday, 9 October 2014

Human induced pluripotent cells

Ángel Raya, IBEC, Barcelona

Friday, 10 October 2014)

Mouse functional genomic analysis. Bioinformatic Tools, examples

Lluís Montoliu, CNB-CSIC

Monday, 13 October 2014

Genetic diagnosis of monogenic diseases.

Lourdes Ruiz, CBMSO-UAM

Tuesday, 14 October 2014

Genetic architecture of complex diseases.

M^a Jesús Bullido, CBMSO-UAM

Wednesday, 15 October 2014

Functional genomics and interactions in complex diseases.

M^a Jesús Bullido, CBMSO-UAM

Thursday, 16 October 2014

Student's presentation/discussion of selected papers (SEMINAR 3)

Friday, 17 October 2014

Fest of School of Medicine

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Monday, 20 October 2014

Student's presentation/discussion of selected papers (SEMINAR 4)

Tuesday, 21 October 2014

Next Generation Sequencing: Basic issues and Applications

Ricardo Ramos (PCM)

Wednesday, 22 October 2014

Proteomics: basic issues and applications

Ana Isabel Marina, ProteoRed (CBM-CSIC)

Thursday, 23 October 2014

Student's presentation/discussion of selected papers (SEMINAR 5)

Friday, 24 October 2014

Experimental therapies.

Lourdes Ruiz, CBMSO-UAM/CSIC

Monday, 27 October 2014

Structural variation of the human genome in health and disease

Luis Pérez Jurado (UPF, Barcelona).

Tuesday, 28 October 2014

Pharmacogenetics/Pharmacogenomics

Carmen Ayuso, Instituto de Investigación Sanitaria-Fundación Jiménez Díaz

Wednesday, 29 October 2014

Student's presentation/discussion of selected papers (SEMINAR 6)

Thursday, 30 October 2014

Clinical realities of cell therapies. Applications and translational research

Damián García Olmo, Hospital la Paz-IdIPaz

Friday, 31 October 2014

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

BM5 Module, Evaluation Criteria Course 2014-2015

Participation (4 points, 40%): 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, 2014**.

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).