

**33203: Techniques in experimental pharmacology (coordinator: Prof. Ana Briones [ana.briones@uam.es](mailto:ana.briones@uam.es)) Seminar XIV**

Hour	Monday-23 January	Tuesday- 24 January	Wednesday-25 January	Thursday- 26 January	Friday-27 January
9-10				33203 - Presentation <i>Ana Briones</i> 9.30-10 h 33203 - Tissue preparation, histological sectioning and immunostaining <i>Ana Briones</i> 33203 - Cell cultures <i>Elsa Cortés?</i> 33203 -Protein and gene expression by western blot and PCR (seminar) <i>Elena Tortosa?</i>	<i>Santo Tomás de Aquino</i>
10-11					
11-12					
12-13					
13-14					
15-16					
16-17					

Hour	Monday-30 January	Tuesday- 31 January	Wednesday-1 February	Thursday- 2 February	Friday-3 February	
9-10	<i>Presentación de trabajos curso capacitación animales experimentación</i>					
10-11		33203 - Electrophysiology techniques <i>Luis Gandía</i>	33203 - Confocal Microscopy: principles and applications in biomedical Research. Image analysis with Image J <i>Silvia Arribas and Ignacio Monedero. OK</i>	33203 - Measurement of vascular structure (classroom). <i>Silvia Arribas and Ana Briones OK</i>	33203 - Measurement of vascular structure (labs) <i>Silvia Arribas (Group 2-L4)</i>  33203 - Patch clamp (labs) <i>Luis Gandía (Group 3-L7)</i>	
11-12		33203 - Techniques to measure intracellular calcium <i>María Cano</i>		33203 - Measurement of vascular function (classroom and labs) <i>All groups</i>  <i>Ana Briones (Group 1-L4)/ /Miriam Granado+Angel L. García Villalón (Group 2-C15; Silvia Arribas (Group 2-3, CXX).</i>  <i>OK</i>	33203 - Techniques to measure intracellular calcium (labs) <i>Maria Fernández Velasco (Group 1 IIB-Alberto Sols)</i>	
12-13		33203 - GraphPad Prism (seminar) <i>Fernando de la Cuesta</i>				33203 - Measurement of vascular structure (labs) <i>Ana Briones (Group 1-L4)</i>
13-14						33203 - Patch clamp (labs) <i>Luis Gandía (Group 2-L7)</i>  33203 - Techniques to measure intracellular calcium (labs) <i>Maria Cano (Group 3-L8)</i>
15-16				33203 - Patch clamp (labs) <i>Luis Gandía (Group 1 L7)</i>		
16-17				33203 - Techniques to measure intracellular calcium (labs) <i>Maria Cano (Group 2-L8)</i>  33203 - Measurement of vascular structure (labs) <i>Ana Briones (Group 3-L4)</i>		

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Hour	Monday-6 February	Tuesday- 7- February	Wednesday-8 February	Thursday- 9 February	Friday-10 February
9-10			<i>Examen curso capacitación animales experimentación</i>		
10-11	33203 - Next generation sequencing <i>Julián Nevado</i>	33203 - Techniques to measure exocytosis and neurotransmitters release <i>Almudena Albillos</i>		3203 - Isolation and characterization of extracellular vesicles <i>Fernando de la Cuesta</i>	33203 – Proliferation/Viability (labs). <i>All Groups</i> <i>Eric del Sastre (Group 2-L3)</i> <i>Concha Peiró (Groups 1,3-L5)</i>
11-12	33203 -Microarrays <i>Julián Nevado</i>	33203 - Neuroimaging and cerebral function <i>Pilar López Larrubia</i>		33203 -Proteomics <i>Antonio Martínez</i>	
12-13	<i>Practica??</i>	<i>Practica??</i>	33203 – Data analysis and representation of vascular function (seminar) <i>Ana Briones / Ana García-Redondo</i>	33203 – Data analysis and representation of vascular structure (seminar) <i>Silvia Arribas/Ana Briones</i>	33203 - Behavioural studies in animals <i>Elisa Rodríguez</i>
13-14					33203 Measurement of reactive oxygen species <i>Ana Briones</i>

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Hour	Monday-13 February	Tuesday- 14- February	Wednesday-15 February	Thursday-16 February	Friday-17 February
9-10					
10-11	33203 – Proliferation/Viability (labs). <i>Concha Peiró (Only groups 1 and 3-L5)</i>	<i>Students presentations</i> <i>Manuela García</i> <i>Ana Briones</i>			
11-12	33203 - Mitochondrial function and biogenesis <i>Maria Monsalve</i>				
12-13	33203 -Transfection techniques and RNAi <i>Maria Cano</i>				
13-14					

**Note.** Seminars and theoretical lessons will take place in seminar XIV. Practical demonstrations will take place in specified labs in the Departments of Pharmacology (L3, L4, L5, L7, L8) and Physiology (C15, C29, C33).

**Students presentations for session on Tuesday 14<sup>th</sup> February:**

The students will divide in 5 groups of three and 1 group of two (free election). Each group should choose one project from the ones provided below and prepare a ~10-15 min PPT presentation that will be followed by ~10-15 min discussion. Alternatively, you can develop your own Master's Thesis project. The main objective of this presentation is that you propose different experimental approaches and experimental models that would allow you to address the scientific question. You will have to present at least 4 different techniques that complement each other and explain the rationale of your election. Additional experimental techniques not covered in this course are very welcome.

- Project 1. Role of microglia in cognitive decline induced by diabetes.
- Project 2. Arterioles at the hippocampus are contributors of cognitive decline in hypertension.
- Project 3. Role of the free radical oxygen producing enzyme NOX4 (NADPH-4) in neurodegeneration
- Project 4. Hemoxygenase-1 blockade in aging is neuroprotective by reducing brain iron accumulation
- Project 5.
- Project 6.

Student		Groups for labs desmonstrations	
Ana	CUADRADO GÓMEZ	1	
Isabel	HERRERO DEL REAL	1	
Elia	MÁRQUEZ CABELLO	1	
Alan	RIVERA TENORIO	1	
Alshammari	SANAD EID	1	
Daniela	BARACALDO SANTAMARIA	2	
Cristina	DOMINGUEZ BLASCO	2	
Jorge	GALÁN CRUZ,	2	
Raphael	GONZALEZ CRISOSTOMO	2	
José Francisco	HARO ESTÉVEZ	2	
Andrea	IDUH IJABADENUY	2	
Iciar	LUNA VÁZQUEZ	3	
Marta	OLAZABAL CHIAS	3	
David	ORTEGO CASADO	3	
Clara	RUIZ SANCHEZ-GARRIDO	3	
Mª Almudena	SANCHA CANTERO	3	
Víctor	VAREA TIerno	3	