

Fiche UE MU5BIN06

PHYSIOLOGICAL AND PATHOLOGICAL NEUROTRANSMISSION AND SIGNALING

Responsable	ME ANNE ROUMIER				
Co-responsable	MR JEAN-ANTOINE GIRAULT				
Descriptif	Parcours type	Option	Niveau	Semestre d'enseignement	ECTS
	Neurosciences	Neurosciences Cellulaires et Intégrées - NCI	M2	S3	6
Modalités pédagogiques	Volume horaire Cours	Volume horaire TD	Volume horaire TP		
	35 h in 2 weeks	7-10 h + Personal time to prepare the presentation. NB: during the first week, the program is lighter in order to save time for these preparations.	0		
Objectifs	The goal of this UE is to provide a global vision of the signaling of different neuromodulators and neurotransmitters: 1) by presenting receptors (mainly, but not exclusively, GPCRs) and their signaling, as well as evolutionary aspects of signaling ; 2) by exploring cellular functions which can impact on signaling (trafficking, transport across membranes, kinases and phosphatases, structure-function relationship...), 3) by showing signaling alterations in pathologies. The speakers have been chosen to also show the diversity of experimental approaches in neuroscience. This is complemented by student presentations (which all of them must attend) of recent articles each illustrating a specific innovative technique.				
Thèmes abordés	Signaling (dopamine, endocannabinoids, acetylcholine, serotonin, GABA...); transporters ; structure/function of receptors; trafficking and diffusion of receptors ; regulation of transcription ; glia and signaling ; evolution of GPCR and of their coupling; proteomic and transcriptomic approaches. Pathologies: Parkinson, Huntington, bipolar disorders, depression, addiction...				
Compétences acquises à l'issue de l'UE (concepts, méthodologie et outils)	<ul style="list-style-type: none">- Seminars → become familiar with concepts and techniques necessary for the experimental practice of neurobiology (cf seminars)- Article presentations → make an oral presentation, provide an update on a technique, be didactic (cf article presentation in groups of 2 or 3)- Critical analysis of scientific literature (seminars, oral presentation)				
Prérequis	Interest in cellular biology and signaling. Being a curious and open mind because the interventions cover diverse domains, from molecular and phylogenic aspects to behavior and pathology.				
Modalités d'évaluation/100	Ecrit	Oral	CC	Autre	
	50	50	0	0	
Langues utilisées	Dans les cours, TD, TP		Dans les documents, supports		
	ANGLAIS		ANGLAIS		
Localisation	Institut du Fer à Moulin, 7 rue du Fer à Moulin, 75005 PARIS				