

MU4BM010	FUNDAMENTAL MOLECULAR BIOSCIENCES
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Responsable(s) & courriel(s)	Charles DURAND Véronique MATEO	charles.durand@sorbonne-universite.fr veronique.mateo@sorbonne-universite.fr		
Gestionnaire(s)	Carine JOSEPH Tél. : 01 44 27 35 35	sciences-master-bmc-pedago1@sorbonne-universite.fr		
Modalités	Semestre	ECTS	Présentiel / Distanciel	Effectif maximal
	S1	15	Présentiel	40
Volume horaire (H)	Cours	TD	Travail personnel	Site
	125	25		Campus P&M Curie
Langue d'enseignement	Cours	TD	TP	Supports de cours
Français/Anglais	English	English		English
Evaluations (/100)	CC	Ecrit	Oral	TP
		60	40	
Obligatoire	Mandatory for PIM students			
Prérequis	Extensive knowledge in the field of molecular and cellular biology is required.			

Présentation pédagogique de l'UE

Objectifs	This teaching aims at providing students with a basic and cutting-edge knowledge in Cell Biology, Developmental and Stem Cell Biology, Genetics, Molecular Biology and Biochemistry, and Immunology.
Thèmes abordés	<p>Cell Biology: Signaling pathways, cell cycle, cell death, intracellular trafficking, cell adhesion, cell migration, autophagy.</p> <p>Developmental and Stem Cell Biology: Introduction to developmental biology, stem cell concepts and methods, cell and nuclear reprogramming, organizing centers, the saga of the germ line, development and evolution.</p> <p>Genetics: Structure and functional organization of the genomes, genome dynamics, epigenetic landscape and nuclear organization, epigenetic mechanisms, long non-</p>

	<p><i>coding RNAs, replication, recombination and repair.</i></p> <p>Molecular Biology and Biochemistry: RNA: structure and transcription, small non-coding RNAs, post-transcriptional modifications, translation and post-translational modifications, protein degradation.</p> <p>Immunology: Organs and Cells of the Immune System; Ontology, development and differentiation; Antigen recognition and repertoire diversity; Antigen presentation and consequences; Innate Immunity and Immune responses; Molecular and Cellular effector functions...</p>
<p>Compétences acquises à l'issue de l'UE (concepts, méthodologie et outils)</p>	<ul style="list-style-type: none"> - Acquisition of major concepts and methods in fundamental biology - In depth exploration of scientific questions related to biotherapies - Acquisition of autonomy and methodology in gathering scientific information and restitutive communication.

Equipe pédagogique

Cell Biology: Tounsia Ait-Slimane, Valérie Bello, Rozenn Bernard, Marta Garcia, Anthi Karaïskou, Ronan Le Bouffant, Flora Llense, Anne Roumier, Sylvia Soares, Joelle Sobczak-Thepot.

Developmental and Stem Cell Biology: Eulalie Buffin, Clémence Carron-Homo Charles Durand, Emmanuelle Havis, Mélanie Paces-Fessy, Muriel Umbhauer.

Genetics: Valérie Borde, Frédéric Devaux, Nathalie Dostatni, Irena Drascovic, Gilles Fisher, Stéphane Koundrioukoff, Emmanuèle Mouchel-Vielh, Marina Pinskaya.

Molecular Biology and Biochemistry: Damien Bregeon, Sandrine Castella, Clément Carré, Gress Kadare

Immunology: Véronique Mateo, Sophie Sibénil, Stéphanie Graff-Dubois, Isabelle Crémer, Encarnita Mariotti-Ferrandiz, Bertrand Bellier, Sébastien André, Jules Russick.