Cancer, Ageing and Rejuvenation Graduate School - CARe

Master's Programme

2022 - 2023

Title of the Teaching Unit (UE): Molecular and cellular basis of cancer and aging		
Semester: 7	**Number of ECTS: 3**	**Hourly volume: MC : 8H & DW : 16H** *No distance learning*
Teaching Team	**Leaders :** Cedric Dray cedric.dray@inserm.fr & Bruno Ségui bruno.segui@inserm.fr **Teaching team :** Cédric Dray, Bruno Ségui & Victorine Douin	
Objective	The objective of this course is to introduce students to the understanding of the fundamental mechanisms that accompany and explain two pathophysiological processes, namely aging and cancer	
Content	80 students (2 groups of students including 1 in English) CM1: Cancer, aging and DNA alterations CM2 : Causes of senescence CM3: Consequences of senescence CM4: Metabolic alterations in cancer and aging TD1: Cancer/aging modeling: animal, cellular, mathematical models TD2: Senescence and Cancer: DNA damage, telomere attrition TD3: Is aging a pathology? (multidomain prevention) TD4: Senescence and aging: senolytics and senomorphics TD5 : What impact of metabolism on cancer and aging: mitochondria, oxidative stress TD6: SASP TD7: Interrelation between cancer and aging TD8 : Regenerative capacities	
Pre-requisites	Basics of cellular and molecular biology (L3 level)	
Keywords	Cancer/Aging/Senescence	
Skills	- Take a critical look at scientific articles dealing with the different fundamental aspects of cancer and aging -Better understand the molecular and cellular mechanisms of senescence -Master oral presentations -Put into perspective the fundamental mechanisms of cancer and aging for therapeutic purposes	
Block of Skills	- Cell Biology/Biochemistry	