



TOXICOLOGY AND SAFETY OF BIOTECHNOLOGY PRODUCTS

Enrollment year	2020/2021
Academic year	2020/2021
Regulations	DM270
Academic discipline	BIO/14 (PHARMACOLOGY)
Department	DEPARTMENT OF BIOLOGY AND BIOTECHNOLOGY "LAZZARO SPALLANZANI"
Course	ADVANCED BIOTECHNOLOGY
Curriculum	PERCORSO COMUNE
Year of study	1°
Period	2nd semester (01/03/2021 - 14/06/2021)
ECTS	6
Lesson hours	48 lesson hours
Language	Italian
Activity type	ORAL TEST
Teacher	DOSSENA MAURIZIA (titolare) - 3 ECTS VERRI MANUELA - 3 ECTS
Prerequisites	None
Learning outcomes	The course aims to describe the nature and mechanisms that characterize the adverse effects related to different biotechnology-derived products: biological medicinal products, diagnostic products, cosmetics and food supplements.
Course contents	Principles of general toxicology: major areas of toxicology; toxic agents; exposure characteristics; classification of adverse effects; dose-response relationship; threshold effects; mechanisms of toxicity; toxicokinetics; risk assessment. Toxicology in drug development phases. Biotechnology-derived products: general aspects. Toxicology of biotechnology-derived medicinal products: monoclonal antibodies; cytokines and growth factors; blood derivatives; recombinant enzymes

	and hormones; recombinant vaccines; biosimilars. Biotechnology and food safety. Genetically modified organisms. Toxicology of cosmetics. Biotechnology and sustainable development.
Teaching methods	Lessons and seminars
Reccomended or required readings	Slides Casarett & Doull's "Toxicology" Ed.Ambrosianaes
Assessment methods	Oral exam
Further information	
Sustainable development goals - Agenda 2030	\$lbl_legenda_sviluppo_sostenibile