***BIP-TAC***

***“Understanding and fate of natural toxins and anthropic contaminants involved in foodborne illness and environmental suffering: instrumental-analytical, biosensors, ecotoxicological and cell-based approaches”***

***COORDINATORS:***

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***PARTNERSHIP:***

***University of Naples Federico II (UniNa)- Department of Pharmacy***

***University of Naples Federico II (UniNa)- Department of Chemical Science***

***University of Rovira i Virgili***

***University of Clermont Auvergne***

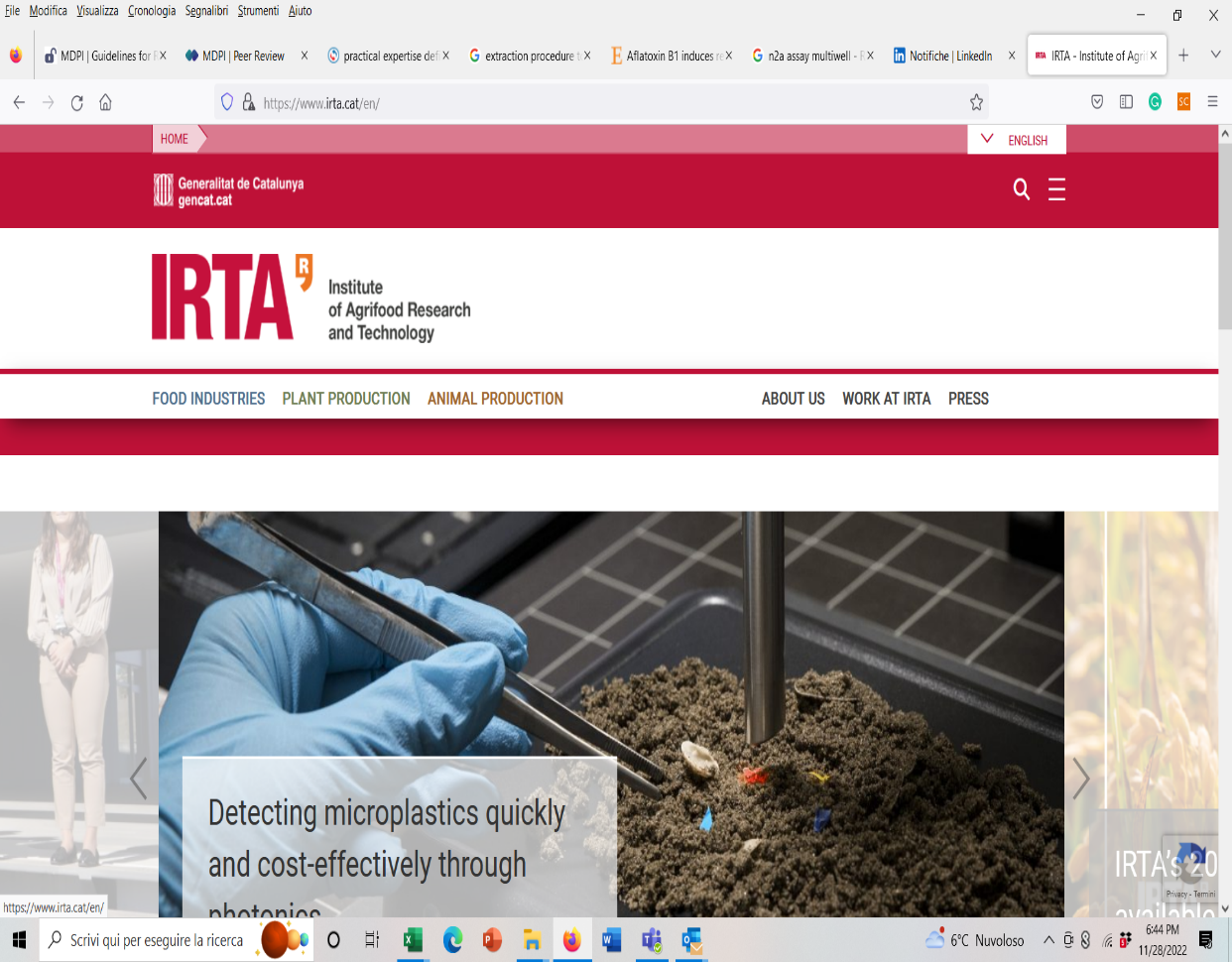
***University of Belgrade***

***University of Urbino Carlo Bo***

***Institute of Agrifood Research and Technology***

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***VIRTUAL PART on Microsoft Teams:***

**Theoretical lessons**

**DATE 1 - 24/03/2023**

**10.00-12.00**

**Overview of the main marine and freshwater toxins (Dept. of Pharmacy, University of Naples Federico II: 2 h). Prof. Tartaglione L.**

**13.30-17.30**

**Overview on Harmful Algal Bloom ecology (University of Urbino Carlo Bo: 4 h). Prof. Penna A. and Prof. Casabianca S.**

**DATE 2 - 27/03/2023**

**13.00-15.00**

**Toxicological threats linked to the consumption of seafood: risks and management (Institute of Agrifood Research and Technology: 2 h). Prof. Diogene J.**

**16.00-17.00**

**Pharmacotoxicology: Molecular targets to marine toxins. From toxins to drugs (Universitat Rovira i Virgili: 1h). Prof. Sureda F.**

**DATE 3 - 29/03/2023**

**12.00-14.00**

**Organic pollutants. Structure, source, effects on human health and the environment (Dept. of Chemical Sciences, University of Naples Federico II: 2 h). Prof. Zarrelli A.**

**15.00-17.00**

**Polymeric materials for the extraction and pre-concentration of low molecular weight components (Universitat Rovira i Virgili: 2h) Prof. Fragoso A.**

**DATE 4 - 17/04/2023**

**9.30-11.30**

**The implementation of cell-based assays as toxicological tools for the recognition of marine toxins (Institute of Agrifood Research and Technology: 2 h). Prof. Diogene J.**

**12.00-14.00**

**New insights in cell-based assays. Pros and cons to analytical techniques. (Universitat Rovira i Virgili: 2h). Prof. Sureda F.**

**15.00-17.00**

**Biosensors and other biotechnological tools for the detection of aquatic toxins (Institute of Agrifood Research and Technology: 2 h). Prof. Campas M.**

**DATE 5 - 19/04/2023**

**10.00-12.00**

**Biosensors and other biotechnological tools for the detection of aquatic pathogens (Institute of Agrifood Research and Technology: 2 h). Prof. Campas M.**

**14.00-17.00**

**5.2 Soil pollution. Assessment of soil quality affected by different anthropogenic impacts (Dept. of Pharmacy, University of Naples Federico II: 3 h). Prof. De Marco A.**

**DATE 6- 27/04/2023**

**9.00-11.00**

**Fundamentals of Mass Spectrometry (Dept. of Pharmacy, University of Naples Federico II: 2 h). Prof. Dell’Aversano C.**

**11.30-13.30**

**Liquid chromatography coupled to mass spectrometry at unit and high resolution (LC-MS/MS and LC-HRMS)**

**(Dept. of Pharmacy, University of Naples Federico II: 2 h). Prof. Dell’Aversano C.**

**14.00-18.00**

**Photochemical reactions in water media and Radical chemistry in**

**water and application for water depollution (Université Clermont Auvergne: 2 h). Prof. Brigante M.**

**Waters Treatments and Environmental analyses by Liquid Chromatography in a French Governmental Research Laboratory (Université Clermont Auvergne: 2 h). Dr. Voyard G.**

***LABORATORIAL PART at UniNa:***

**Hands-on lab activities**

**LAB 1:**

**DATE: 22/05/2023**

**9.00-13.00**

**Sample preparation: practical activity (Dept. of Pharmacy-University of Naples Federico II: 4h) Prof. Varra M.**

**LAB 2:**

**DATE: 22/05/2023**

**14.30-17.30**

**Evaluation of chemical, physical and biological indicators of soil quality. Phytotoxicity assays (Dept. of Pharmacy, University of Naples Federico II: 3 h) Prof. De Marco A.**

**LAB 3:**

**DATE: 23/05/2023**

**9.00-13.00**

**Development of an LC-MS method for quali-quantitative determination of natural toxins in different matrices. (Dept. of Pharmacy, University of Naples Federico II: 4h) Prof. Tartaglione L.**

**LAB 4:**

**DATE: 23/05/2023**

**14.30-18.30**

**Magnetic bead-based assays for the detection of marine toxins (Institute of Agrifood Research and Technology: 4 h) Prof. Campas M.**

**LAB 5:**

**DATE: 24/05/2023**

**9.00-12.00**

**Evaluation of chemical, physical and biological indicators of soil quality. Phytotoxicity assays (Dept. of Pharmacy, University of Naples Federico II: 3 h). Prof. De Marco A.**

**LAB 6:**

**DATE: 24/05/2023**

**14.00-17.00**

**Round table**

**LAB 7:**

**DATE: 25/05/2023**

**9.00-12.00**

**Determination of nitrites in water to assess biodegradation processes of protein substances and organic micropollutants (Dept. of Chemical Sciences, University of Naples Federico II: 3 h). Prof. Zarrelli A.**

**LAB 8:**

**DATE: 25/05/2023**

**14.00-18.00**

**Case study. Toxin identification and quantitation in real sample (Dept. of Pharmacy, University of Naples Federico II: 4h) Prof. Dell’Aversano C.**

**LAB 9:**

**DATE: 26/05/2023**

**9.00-12.00**

**Insoluble cyclodextrin polymers as adsorbents: Green synthesis of epichlorohydrin-cross-linked cyclodextrin polymers (Universitat Rovira i Virgili: 3h) Prof. Fragoso A**

**LAB 10:**

**DATE: 26/05/2023**

**14.00-17.00**

**Insoluble cyclodextrin polymers as adsorbents: 2. Adsorption and release of toxins and emerging pollutants (Universitat Rovira i Virgili:3h) Prof. Fragoso A**