Ph.D. Program in Pharmaceutical and Biomolecular Sciences

Academic Year 2018/2019
Food-omics: integrated analytical strategies for in-depth chemical characterization of food

Course Schedule	8-9-10-11 July, 9.00 am – 1.00 pm Dipartimento di Scienza e Tecnologia del Farmaco Via Pietro Giuria 9, Turin
Course highlights	✓ Fundamentals of Food-omics - strategies and platforms ✓ Agilent Academia Project - Food omics platforms for in depth characterization of food (LC-HRMS and GC-HRMS) ✓ Sensometabolomics and Nutrimetabolomics principles and strategies ✓ Chemometrics through case studies (off-odors, cocoa origins, coffee notes).
Academic Teachers	Prof. Chiara Emilia Irma Cordero – chiara.cordero@unito.it Dr. Erica Liberto – erica.liberto@unito.it
Experts outside Academia	Dr. Marica Beggio – Agilent Product Specialist GC/GC-MS technologies Dr. Marica Barbieri - Agilent Product Sales Specialist LC/LC-MS technologies

Agenda	
Monday July the 8th Room Aula Magna Guido Tappi Via Pietro Giuria 9 9.00 am – 1.00 pm	Introduction to food-omics: principles, strategies and work-flows (targeted/untargeted analysis), analytical platforms and peculiarities. (Prof. Chiara Cordero) Chemometrics: supervised and unsupervised methods for data mining. Principles and case studies dealing with food quality and safety applications. (Dr. Erica Liberto).
Tuesday July the 9th Room Aula Magna Guido Tappi Via Pietro Giuria 9 9.00 am – 1.00 pm	Agilent meets food-omics analytical needs. Analytical platforms for cutting edge research based on targeted and untargeted investigations in food area: gas chromatography coupled to high/low-resolution mass spectrometry, liquid chromatography coupled to high/low-resolution mass spectrometry. Platforms, operative principles, advanced/integrated technologies and solutions.

Wednesday and Thursday
July the 10th and 11th
Room Aula F and Aula C
Via Pietro Giuria 9
9.00 am – 1.00 pm

Practical activities – students will be split in two groups

Chemometrics: unsupervised approaches based on multivariate statistics (PCA). Heat-maps, hierarchical clustering, classification methods (PLS-DA) and regression analysis. Practical training on XLStat software (https://www.xlstat.com/en/) - Dr. Erica Liberto

Multidimensional data processing: three-dimensional data sets from GC×GC-MS how to explore them and perform advanced fingerprinting. Practical training with GC Image software (https://www.gcimage.com/index.html) – Prof. Chiara Cordero

Important notes:

Students are asked to bring with them their personal computers (laptops with Windows operative systems) to download trial versions of the software package adopted in the practical lessons and to work independently or in small groups on data-set made available during the training.

Remote access by webex will be organized, please send an email with the request to chiara.cordero@unito.it.

For any additional detail please contact: Prof. Chiara Emilia Irma Cordero – chiara.cordero@unito.it