COURSE: Mass Spectrometry (MS) – the Swiss Knife in Bioanalysis

Contact person: Stjepan Orhanović
phone: +385 98 409 187
skype: stipe@pmfst.hr

Web page: http://split-summerschool.com

Main topics:
- Introduction to mass spectrometry, coupling to GC or HPLC
- Analytical strategies, isotope dilution or verification, project introduction (experiment design)
- Sample preparation, data acquisition, processing, analysis and quality control
- MRM targeted analysis, data independent analysis, databank search, data interpretation in respect to metabolic and signaling pathways
- Recent developments in mass spectrometry instrumentation and applications

Programme structure:
- 5-day course
- Sample data will be provided for practical work and for final presentation
- Every student gets lecture notes bound into a booklet, as well as a CD containing a digital version of the booklet

Important dates:
Course dates: 02/09/2019 – 06/09/2019
Deadline for application: 01/07/2019
Payment due by: 01/08/2019
Confirmation of the course: 10/08/2019

Price of the course (bed & breakfast included): 300 € (tax included)
Contact person: Marina Kero
marina.kero@scst.hr

Programme plan:
Day 1
- Ionisation techniques and mass analysers – instrumentations, advantages and drawbacks (L, 2h)
- Coupling of GC an LC to mass spectrometer, soft ionisation techniques, ESI and APCI (L, 2h)
- Hands-on training in spectra analysis (S, 2h)

Day 2
- Analytical strategies, isotope dilution or verification, (L, 2h)
- MRM targeted analysis (L, 2h)
- Untargeted analysis (L, 2h)

Day 3
Experimental work, sample preparation (extraction, SPE, standards, enrichment, testing recoveries), MRM analysis, untargeted analysis

Day 4
- Data analysis and data banks searching (L, 2h)
- Manual and database assisted molecule identification (S, 2h)
- Data integration in metabolic pathways in relation to the enzymes involved (S, 2h)
- Analysis of experimental data (S, 2h)

Day 5
- Selected topics in diagnostics, newborn screening, toxicology, metabolomics (L, 2h)

Programme lecturers:
Ph. D. Stefan Kalkhof,
Professor at the University of Applied Science, Coburg, Germany & Head of the Fraunhofer Unit “Protein Biomarker” Fraunhofer Institute for Cell Therapy and Immunology IZI, Leipzig, Germany

Ph. D. Stjepan Orhanovic,
Professor at the University of Split, Faculty of Science, Department of Chemistry, Split, Croatia.

Ph. D. Ivana Ujević
Professor at Institute for Oceanography and Fisheries, Split, Croatia.