



## REPORT:

- 1st CEFSER Training Course "*Capabilities of UPLC-MS/MS in Analysis of Contaminants and Pharmaceutical Compounds in Food and the Environment*"
- 2nd CEFSER Training Course "*Quality Assurance (QA) and Quality Control (QC) Procedures in Analysis of Contaminants and Pharmaceutical Compounds in Food and the Environment*"

The CEFSER project held its first two training courses at the Faculty of Technology, from April 06 to April 09, 2010. Both trainings were organized as a part of the project Work Package no. 3 (WP3) „Reinforcement of human resources“.

The first CEFSER TRAINING COURSE “Capabilities of UPLC-MS/MS in Analysis of Contaminants and Pharmaceutical Compounds in Food and the Environment” started on April 06, with the presentation of the CEFSER project and the newly established CEFSER laboratory for mass spectrometry of chemical contaminants in food and the environment by Prof. Biljana Škrbić.



During a lunch break, the guest lecturers met the Dean of the Faculty of Technology, Prof. Zoltan Zavargo, and discussed the opportunity for future collaboration and mobility activities.

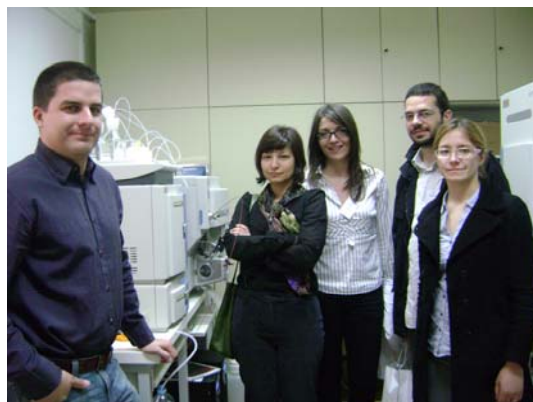


Program continued with oral presentations of the key personnel of the CEFSER supporting partners: Prof. Jana Hajšlová, Head of Department of Food Chemistry & Analysis at Institute of Chemical Technology (ICT), Prague, Czech Republic and Dr. Jon E. Johansen Director of CHIRON AS, Trondheim, Norway. The first-day program finished with the presentation of Dr. Michal Godula, Food Safety Specialist from Thermo Fisher Scientific, Prague, Czech Republic.

During the second and third day of the 1<sup>st</sup> CEFSER course the invited lecturers gave presentations providing the participants knowledge in the application of Ultra Performance Liquid Chromatography with triple quadrupole mass spectrometric detector (UPLC-MS/MS) and other advanced MS techniques in targeted analysis of contaminants and pharmaceutical compounds in food and the environment.



During the practical sessions organized at the CEFSER lab for mass spectrometry, the participants were introduced with hardware and software of the U-HPLC-TSQ Vantage MS/MS, its maintenance and troubleshooting, and with “TRACE FINDER” software for the targeted food safety analysis. The participants had also the opportunity to be informed and to discuss about QuEChERS for quick and simple sample preparation method for subsequent mycotoxins analysis by liquid chromatography coupled to MS.



The 2<sup>nd</sup> CEFSEER TRAINING COURSE “Quality Assurance (QA) and Quality Control (QC) Procedures in Analysis of Contaminants and Pharmaceutical Compounds in Food and the Environment” followed the 1<sup>st</sup> CEFSEER course and it was organized on April 09, 2010. The main aim of the training course was to present theoretical basis of the quality assurance/quality control (QA/QC) procedures in laboratories dealing with trace contaminants and pharmaceuticals in food and environmental matrices. Dr. Michal Godula had an opening lecture on quality control procedures in food labs, followed by the lecture of Mr. Gerhard Stadlmann from Thermo Fisher Scientific, Vienna, Austria, “Fast Chromatography UHPLC New Accela 600/1000 New LTQ Velos development in Linear Ion Trap Technology” enabling participants to get an impression of the latest developments in performing the online sample preparation and advanced LC/MS analytical procedures.



Dr. Jon E. Johansen presented the reference materials production in Europe with the role and product list of his company CHIRON. Since Dr. Stefan van Leeuwen from the Institute for Environmental Studies (IVM) at the Amsterdam Free University canceled the participation at the last moment, the presentations he prepared about the importance of interlaboratory studies (ILSs) and the conclusions from first three

ILSs on perfluorinated compounds organized by his institution, were presented by Prof. Biljana Škrbić. Final presentation of Prof. B. Škrbić also gave insight into the results and conclusions emerged after the ILSs organized by EC-Joint Research Centre-Institute for Reference Materials and Measurements for the presence of polycyclic aromatic hydrocarbons (PAHs) in food.





The closing ceremony was followed by the certificate award and announcement of the following third CEFSER course dedicated to the high-resolution mass spectrometry in quantitative analysis and screening of organic contaminants in food and environment that will be held on September 16-17, 2010.



In total, 61 participants attended both courses. Eight participants from the Western Balkan Countries were the CEFSER grant holders, to whom the attendance costs were fully reimbursed by the CEFSER project. They were chosen based on their interest expressed in the Application form. They participated in both courses.



In the 1<sup>st</sup> CEFSER course there were 51 participants from the following institutions:

- Faculty of Technology, University of Novi Sad, Novi Sad, Serbia
- Institute for Food Technology-FINS, University of Novi Sad, Novi Sad, Serbia
- Institute of Chemistry, Technology and Metallurgy, University of Belgrade, Belgrade, Serbia
- The Vinca Institute of Nuclear Sciences, Belgrade, Serbia
- Medical Faculty, University of Novi Sad, Novi Sad, Serbia

- Alkaloid, Skopje, Macedonia
- Public health Institute of Republic of Srpska
- Bosnalijek, Sarajevo, Bosnia and Herzegovina
- Food Safety and Veterinary Institute, Tirana, Albania
- Montenegro Institute for public health, Podgorica, Montenegro
- Ministry of Interior Affairs, Banja Luka, Republic of Srpska
- PTD Ribarstvo, Backi Jarak, Serbia
- Hemofarm, Vrsac, Serbia
- A BIO TECH LAB DOO, Novi Sad
- Veterinary Medicine Institute Inc. Zemun, Serbia
- Public Institution Centre for Toxicological Research of Montenegro, Podgorica, Montenegro
- Belgrade City Institute for Public Health, Belgrade, Serbia
- Medicines and Medical Devices Agency of Serbia, Belgrade, Serbia
- SP Laboratory, Serbia
- Institute of Pharmacology, Belgrade, Serbia
- Faculty of Agriculture, Sarajevo, Bosnia and Herzegovina
- Faculty of Agriculture, Zemun, Serbia



In the 2<sup>nd</sup> CEFSE course there were 46 participants from the following institutions:

- Faculty of Technology, University of Novi Sad, Novi Sad;
- Institute for Food Technology-FINS, University of Novi Sad, Novi Sad;

- Institute of Chemistry, Technology and Metallurgy, University of Belgrade, Belgrade;
- The Vinca Institute of Nuclear Sciences, Belgrade;
- Medical Faculty, University of Novi Sad, Novi Sad;
- Republic Hydrometeorological Service of Serbia, Belgrade, Serbia
- Alkaloid, Skopje, Macedonia
- Public health Institute of Republic of Srpska
- Bosnalijek, Sarajevo, Bosnia and Herzegovina
- Food Safety and Veterinary Institute, Tirana, Albania
- Montenegro Institute for public health, Podgorica, Montenegro
- Ministry of Interior Affairs, Banja Luka, Republic of Srpska
- PTD Ribarstvo, Backi Jarak, Serbia
- A BIO TECH LAB DOO, Novi Sad
- Veterinary Medicine Institute Inc. Zemun, Serbia
- Public Institution Centre for Toxicological Research of Montenegro, Podgorica, Montenegro
- Belgrade City Institute for Public Health, Belgrade, Serbia
- SP Laboratory, Serbia
- Institute of Pharmacology, Belgrade, Serbia
- Faculty of Agriculture, Sarajevo, Bosnia and Herzegovina
- Faculty of Agriculture, Zemun, Serbia



Programs of the 1st and 2nd CEFSER courses were slightly changed in comparison to the announced course agendas to be in line to the professional obligations of the presented lecturers:

<b>06.04.2010</b>	
09.30-10.00	Registration
10.00-10.15	Welcome, Prof. Biljana Škrbić, Coordinator of the CEFSER project, Faculty of Technology, Novi Sad, Republic of Serbia
10.15-11.15	Presentation of the Centre of Excellence in Food Safety and Emerging Risks at the Faculty of Technology, Prof. Biljana Škrbić, Coordinator of the CEFSER project, Faculty of Technology, Novi Sad, Republic of Serbia
11.15-11.30	<i>Coffee break</i>
11.30-12.30	Visit to the CEFSER laboratory for mass spectrometry
12.30-14.00	<i>Lunch break</i>
14.00-15.00	Overview of the running projects with participation of the Institute of Chemical Technology: advanced instruments and labs in the analysis of food and environmental matrices, Prof. Jana Hajšlová, Head of Department of Food Chemistry & Analysis at Institute of Chemical Technology (ICT), Prague, Czech Republic; Member of the EU FP7 Program Committee “Food, Agriculture and Biotechnology”
15.00-15.15	<i>Coffee break</i>
15.15-15.45	Reference materials: where can find them, which material is the right for particular analysis, how to storage, how much of materials to use, Dr. Jon E. Johansen, Director of CHIRON AS, Trondheim, Norway
15.45-16.15	Overview of the advanced instrumental analysis of the chemical contaminants of food and the environment, Dr. Michal Godula, Food Safety Specialist, Thermo Fisher Scientific, Prague, Czech Republic
16.15-16.30	Discussion

<b>07.04.2010</b>	
10.00-10.45	Advances in separation instruments: UPLC vs. HPLC, Dr. Michal Godula, Food Safety Specialist, Thermo Fisher Scientific, Prague, Czech Republic
10.45-11.15	Advances on methods employing mass spectrometry in food quality/safety control, Prof. Jana Hajšlová, Head of Department of Food Chemistry & Analysis at Institute of Chemical Technology (ICT), Prague, Czech Republic
11.15-11.30	<i>Coffee break</i>
11.30-12.00	Sample preparation for targeted food analysis, Prof. Jana Hajšlová, Head of Department of Food Chemistry & Analysis at Institute of Chemical Technology (ICT), Prague, Czech Republic
12.00-12.30	UPLC-MS/MS - general introduction to the instrument and basic functions, Prof. Mira Petrović, Aleksandra Jelić, CSIC-IDAEA, Barcelona, Spain
12.30-14.00	<i>Lunch break</i>
14.00-16.00	<b>PRACTICAL SESSION:</b> Dr. Michal Godula, Food Safety Specialist, Thermo Fisher Scientific, Prague, Czech Republic U-HPLC-TSQ Vantage MS/MS: introduction with hardware and software, maintenance, troubleshooting Setting the required parameters for targeted analysis by UPLC-MS/MS

<b>08.04.2010</b>	
10.00-10.30	UPLC-MS/MS - general introduction to the instrument and basic functions, mass spectrum-what it is, how to analyze it, practical simple examples, Prof. Mira Petrović, Aleksandra Jelić, CSIC-IDAEA, Barcelona, Spain
10.30-11.00	UPLC-MS/MS in food safety multicomponent analysis, Dr. Michal Godula, Food Safety Specialist, Thermo Fisher Scientific, Prague, Czech Republic
11.00-11.15	<i>Coffee break</i>
11.15-12.00	Application of UPLC-MS/MS in the environmental studies and emerging risks, Prof. Mira Petrović, Aleksandra Jelić, CSIC-IDAEA, Barcelona, Spain
12.00-14.00	(12-13 Practical session) <i>Lunch break</i>
14.00-16.00	<b>PRACTICAL SESSION</b>



<b>09.04.2010</b>	
10.00-10.45	QA/QC procedures in trace analysis, Dr. Michal Godula, Food Safety Specialist, Thermo Fisher Scientific, Prague, Czech Republic
10.45-11.45	Fast chromatography and improving method robustness and sensitivity in clinical/food/toxicology Turboflow TLX1/TSQ, Gerhard Stadlmann, Sales Manager, Thermo Fisher Scientific, Vienna, Austria
11.45-12.00	<i>Coffee break</i>
12.00-12.30	Presentation of a company for fine chemicals: CHIRON AS, Dr. Jon E. Johansen, Director of CHIRON AS, Trondheim, Norway
12.30-14.00	<i>Lunch</i>
14.00-14.15	Interlaboratory testing, Dr. Stephan van Leeuwen, Vrije University, Amsterdam, The Netherlands
14.15-14.45	Conclusions from some interlaboratory studies: PFCs, Dr. Stephan van Leeuwen, Vrije University, Amsterdam, The Netherlands
14.45-15.15	Conclusions from some interlaboratory studies: PAHs, Prof. Biljana Škrbić, Coordinator of the CEFSEER project, Faculty of Technology, Novi Sad, Republic of Serbia
15.15-15.45	Discussion and Certificate ceremony