



BIOCOP/CASCADE Joint Spring School

Contaminants in Food: Metabolic Fate and Analytical Approaches. State-of-the-Art and Future Trends

**National Veterinary School, Nantes, France
March 26-30, 2007**

The Spring School is organised jointly by the School of Advanced Residue Analysis in Food (SARAF), the EU-funded BIOCOP Integrated Project and the CASCADE Network of Excellence.

It will take place at the LABERCA (National Veterinary School of Nantes, France), National Reference Laboratory for Growth Promoters and Contaminants Analysis in food, which enjoys excellent facilities for training and extensive experience of the organisation of SARAF training courses.

The objective of the Spring School is to give the participants in-depth knowledge of the metabolism and analysis of food contaminants. The course will include theoretical lectures and hands-on training in Advanced Analytical Chemistry based on Mass Spectrometry and Bioassays.

This training course will include the following main topics:

- Contaminants in food: context and regulatory aspects
- Analytical chemistry and food safety
- Metabolism of contaminants
- Risk assessment

The expected learning outcome is for the participants to gain knowledge in how to identify chemical contaminants and their metabolites in food and how to use this information in risk assessment. The Spring School also aims at creating a network for further technical and scientific cooperation.

The course is intended for PhD students, post docs and young scientists both within and outside BIOCOP and CASCADE.

Course fee is 150 Euros. Accommodation March 26-31 (6 nights), breakfasts, lunches, coffee breaks, dinners as well as travel to the spring school are included in the fee and are arranged by BIO COP and CASCADE. Payment details will be supplied to accepted participants later.

Deadline for application to the course is January 31, 2007.

For application and further information: www.cascadenet.org and www.biocop.org, www.saraf-educ.org.

Organisers: Pf. Bruno Le Bizec, Director of LABERCA, Ecole Nationale Vétérinaire de Nantes, France and Dr Jean-Pierre Cravedi, INRA, France.

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The following detailed programme will be followed during the week

	Monday	Tuesday	Wednesday	Thursday	Friday
8 h 30	Welcome & presentation of the participants, short presentation of BIO COP & CASCADE & training Introduction	B1 - Analytical Chemistry: introduction, MS vs bio-assays			D - Risk assessment: main principles and concepts
9 h					
9 h 30	Coffee break				
10 h			B3 - Analytical Chemistry: bio-assays (theory)	C - Metabolism: main principles and concepts, examples of application	
10 h 30	A1 - Food contaminants: presentation, EU regulation, basics of risk assessment & management	B2 - Analytical Chemistry: mass spectrometry (theory)			G
11 h					H
11 h 30					H
12 h					G
12 h 30	Lunch	Lunch	Lunch	Lunch	Lunch
13 h					
13 h 30		B2 - Analytical Chemistry: mass spectrometry (hands-on)	B3 - Analytical Chemistry: bio-assays (hands-on)	C - Metabolism (hands-on)	Evaluation (quizz)
14 h	A2 - Endocrine disruption: definition, history state-of-the-art and future trends				Debriefing and conclusions
14 h 30		A	C	E	Certificates, pictures & training closure
15 h		B	D	F	
15 h 30	A3 - Risk assessment: principles and methods				
16 h					
16 h 30		B	D	F	
17 h		A	C	E	
17 h 30					
18 h					

Practical exercise A: analysis of PAH in GC-MSn and GC-HRMS (detection, ident., quantification)
 Practical exercise B: analysis of phytoestrogens in LC-MSn (detection, ident., quantification)
 Practical exercise C: biacore technology applied to food contaminants
 Practical exercise D: optical and electrochemical sensors
 Practical exercise E: Metabolism of bisphenol-A
 Practical exercise F: metabolism of 19-norchlorotestosterone acetate
 Practical exercise G: to be determined
 Practical exercise H: to be determined

Module	Theory / Practice	Duration (h)	Contributor
Welcome & presentation of the participants, presentation of BIO COP & CASCADE & training Introduction		1.5	T. Karjalainen (EC), C. Elliott (UK), I. Pongratz (SW), JP Cravédi (F), B. Le Bizec (F)
A Contaminants in food: context and regulatory aspects			
A1 - Presentation of contaminants (classes, origin, levels in Europe, emerging compounds)	T	2	JP Cravédi or KW Schramm or E Benfenati
A2 - Endocrine Disruption	T	1.5	CASCADE: Contributor to Identify (I Pongratz ?)
A3 - Trends, EU regulation, basics of risk assessment & management	T	2	F. Verstraete (EC)
B Analytical chemistry and food safety			
B1 - Introduction: global strategy, MS vs Bio-assays	T	1	B. Le Bizec (F), C. Elliott (UK)
B2 - Confirmatory techniques: mass spectrometry	T	3	B. Le Bizec (F)
B2 - Hands-on. Practical exercise A (analysis of PAH with GC-MSn & GC-HRMS)	P	2	LABERCA (F)
B2 - Hands-on. Practical exercise B (analysis of phytoestrogens with LC-MSn)	P	2	JP Antignac (F)
B3 - Screening techniques: bio-assays	T	4	C. Elliott (UK), T. Lovgren (NL), G. Palleshi (IT)
B3 - Hands-on. Practical exercise C (Biacore technology applied to food contaminants)	P	2	C. Elliott (UK), T. Lovgren (NL), G. Palleshi (IT)
B3 - Hands-on. Practical exercise D (optical and electrochemical sensors)	P	2	C. Elliott (UK), T. Lovgren (NL), G. Palleshi (IT)
C Metabolism of contaminants			
C1 - Metabolism: What is it? Why does it matter?	T	2	P Cravédi (F), D Zalko (F)
C2 - How to handle metabolic studies (in vivo/in vitro approaches)?	T	1	JP Cravédi (F)
C3 - In silico approaches	T	1	CASCADE Emilio Benfenati (to be confirmed)
C - Hands-on. Practical exercise E (metabolism of bisphenol-A)	P	2	CASCADE (D Zalko, L Debrauwer, E Benfenati)
C - Hands-on. Practical exercise F (metabolism of 19-norchlorotestosterone acetate)	P	2	LABERCA (F)
D Risk assessment			
D1 - Main principles and concepts	T	1	H Hakansson (F)
D2 - Hands-on. Practical exercise G (to be defined)	P	2	CASCADE (To be defined)
D2 - Hands-on. Practical exercise H (to be defined)	P	2	CASCADE (To be defined)
Evaluation (quizz), Debriefing and conclusions, Certificates, pictures & training closure		2.5	B. Le Bizec (F), JP Cravédi (F)