

FINAL ANNOUNCEMENT

INTERNATIONAL CONFERENCE

MARKETPLACE

MATCHMAKING EVENT

PROGRAMME AND REGISTRATION

Rapid Methods

**EARLY BIRD
REGISTRATION
ENDS
13 NOVEMBER
2009**

EUROPE 2010

**ANALYTICAL METHODS
AND INSTRUMENTATION
FOR FOOD AND FEED
SAFETY AND QUALITY**

25-27 JANUARY 2010

**THE BIG CHALLENGES: MULTITARGET SCREENING
LOWER DETECTION LIMITS
WIDER RANGE OF MATRICES
SHORTER TIME**

**NH CONFERENCE CENTRE LEEUWENHORST,
NOORDWIJKERHOUT, THE NETHERLANDS**

Monday 25 January 2010

PROGRAMME

13:30 Opening of Rapid Methods Europe 2010

PLENARY MEETING SPEED, SELECTIVITY AND SENSITIVITY

Chair: Dr. Bert Popping, Eurofins Scientific Group, UK

13:45 **SLaptamers provide amazing tools for multiplex protein or pathogen measurements**
Dr. Larry Gold, SomaLogic, Inc., USA

14:30 **Rapid and sensitive immuno-biosensor based on actuated magnetic nanoparticles**
Dr. André H.J. Immink, Philips Corporate Technologies, the Netherlands

15:15 **Networking break/instrument & manufacturers exhibition**

PARALLEL SESSION 1 MICROORGANISMS

Chair: Dr. Aart van Amerongen, Wageningen University, Agrotechnology & Food Sciences Group, the Netherlands

15:45 **Genomotyping: a fast and flexible approach for microbial diagnostics**
Dr. Frank H.J. Schuren, TNO Quality of Life, Microbial Genomics Group, the Netherlands

16:15 **Rapid and simple detection of VTEC specific genes by carbon nanoparticles-based immunoassays**
Prof.dr. Patricia S. Noguera Murray, Polytechnic University of Valencia, Department of Chemistry, Spain

16:45 **Back on food safety radar screen: rapid methods to spot foodborne bacterial toxins**
Dr. Andreja Rajkovic, Ghent University, Food Safety & Quality, Belgium

PARALLEL SESSION 2 CHEMICAL CONTAMINANTS

Chair: Prof.dr. Sarah De Saeger, Ghent University, Department of Bio-analysis, Belgium

15:45 **Experiences with multiplex diagnostic platforms for contaminants**
Willem Haasnoot, RIKILT-Institute of Food Safety, the Netherlands

16:15 **Molecularly imprinted clean-up of fumonisins B and T-2 toxin, and promising applications in mycotoxin sensing**
David De Smet, M.Sc., Ghent University, Department of Bio-analysis, Belgium

16:45 **Aptamer technology as a rival to antibodies in residue diagnostics**
Sara Stead, Central Science Laboratory, UK

17:15 - 19:00 **Rapid Methods Lounge Party**

WELCOME

...to deal with today's big challenges in food and feed analysis...

MULTITARGET SCREENING
LOWER DETECTION LIMITS
WIDER RANGE OF MATRICES
SHORTER TIME

...by visiting **Rapid Methods Europe 2010!**

Rapid Methods Europe is a series of events dedicated to the latest developments in analytical methods and instrumentation for food and feed safety and quality. During years it has strengthened its position as an important meeting point for science and industry. **Rapid Methods Europe** presents new and cutting-edge technologies, with two main topics being microbiology and contaminants detection.

Rapid Methods Europe 2010 features:

Primary lectures & parallel sessions
Reviews and case studies
Contributed papers (oral presentations)

The Advisory Committee particularly encourages the submission of contributed papers in the specific topic areas. All scientists working in the field of rapid testing research are invited to submit their most recent research papers to the conference.

Interactive sessions
Interactive workshops & demonstrations
Technical presentations

A special presentation facility for sponsors and exhibitors to promote their products in more detail.

Instrument & manufacturers exhibition
Networking event

The best opportunity to meet companies and research institutes throughout Europe and to identify possibilities for international R&D co-operation.

A comprehensive overview **Rapid Methods Europe 2010** offers an excellent way to network and to share ideas, providing a reference source for anyone wishing to gain insight into the latest developments in analytical methods and instrumentation for food and feed safety and quality.

ADVISORY COMMITTEE

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**ABSTRACTS OF LECTURES
AND POSTERS**

**INTERNATIONAL CONFERENCE
MARKETPLACE
MATCHMAKING EVENT**

Rapid Methods

EUROPE 2010

**ANALYTICAL METHODS
AND INSTRUMENTATION
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NOORDWIJKERHOUT, THE NETHERLANDS**

Andreja Rakovic

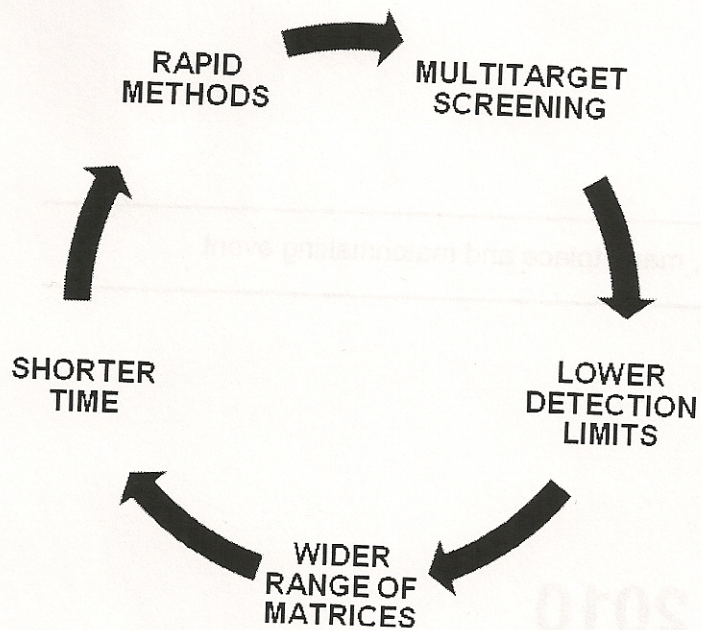
**FINAL PROGRAMME
&
ABSTRACTS OF LECTURES AND POSTERS**

International conference, marketplace and matchmaking event

***Rapid
Methods
Europe 2010***

Analytical methods and instrumentation for food and feed safety and quality

**25-27 January 2010
Noordwijkerhout, the Netherlands**



Rapid Methods Europe 2010

Advisory Committee

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Key to the abstracts of lectures and posters:

- abstracts of lectures and posters are grouped separately;
- the lectures are grouped according to the daily programme;
- the posters are grouped in an alphabetical order according to the corresponding author.

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Back on food safety radar screen: rapid methods to spot foodborne bacterial toxins

Andreja Rajkovic

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Foodborne pathogens can cause a disease through infection, toxico-infection and intoxication. In the last two forms of microbial foodborne diseases toxins play a major role in disease causing potential. In the case of toxico-infection bacterial outgrowth and toxin production occur upon the ingestion, while in the case of intoxication this occurs in the food prior to ingestion. It is for the intoxications that detection of toxins in food matrix is of utmost importance [1]. For toxico-infections detection of toxins mainly serves in the characterization of the isolates for evaluation of the risk of consuming the food containing these isolates and for detection of toxin in faeces and serum in post outbreak studies. Moreover, the detection methods are required for research purposes [2].

The rapidness with which bacteria produces toxins depends on different factors and so does the rapidness of the assays used to spot these toxins [3-12]. The toxin production will be primarily dependent on microorganism inherent characteristics, characteristics of a surrounding environment and relationship between these and other factors [13-17].

The development of the detection method will depend on:

- the objective need;
- type and characteristics of the toxin;
- dose/response relationship and required sensitivity;
- the complexity of the food matrix in which the bacterial growth and toxin production occurs;
- the role and modus-operandi of the toxin in the disease.

The use of the method in analysis will depend on:

- availability and acceptability of the methods;
- complexity of the method and required infrastructure and human capacities;
- speed with which methods provides required results;
- financial constrains;
- purpose of the analysis and the resulting actions;
- data interpretation complexity;
- legal and industrial framework.

The current presentation: (i) outlines pros and cons of different techniques in immunological, biological, molecular and combined methods for detection of selected bacterial protein exotoxins, e.g. *Bacillus cereus* diarrheal enterotoxins and cereulide [14,18], *Staphylococcus aureus* enterotoxins [19-21], *Clostridium botulinum* neurotoxins [22-29] and *Clostridium perfringens* enterotoxin [30-35]; (ii) discusses the relevancy of increased speed and sensitivity of specific methods in the overall sample analysis and with reflection to risk assessment and variability factors; and (iii) discusses laboratory versus field use of detection methods. Moreover, some of the latest scientific achievements and their importance are taken in a broader perspective under discussion [36-41].

References

1. Notermans, S. and Wernars, K., 1991. Immunological methods for detection of foodborne pathogens and their toxins. *International Journal of Food Microbiology* 12:91-102.
2. Rajkovic, A., 2006. Biological and immuno-molecular methods for monitoring of *Bacillus cereus* emetic toxin and *Staphylococcus aureus* enterotoxin. Ph.D. Dissertation, Ghent University, Belgium

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