

Conference on Peptides in Cyanobacteria

- Occurrence, regulation, hazard analysis-

9th and 10th May, 2006,
Berlin, Germany



Cyanobacteria contain a wide range of peptides. Some of them – microcystins and nodularins – are known to be highly toxic and may well be the most ubiquitously found hazardous substances in surface waters used by humans. Others are poorly characterised, e.g. aeruginosins, anabaenopeptins, microginins, cyanopeptolins. Which species produce them? How is their production regulated? How can we best detect and quantify them? Are they toxic or bioactive and of concern for human health or aquatic biota? Does an understanding of their occurrence help understand why cyanobacteria produce toxic peptides?

These questions have been addressed by PEPCY, which stands for PEPTides in CYanobacteria and is a 3-year 11-partner EU project finishing this summer. On May 9th and 10th, PEPCY Partners will present project results. Scientists, researchers, regulators, experts in public health and environmental protection are invited to discuss the current status of our understanding of peptide metabolites in cyanobacteria and their implications both for science and for water quality management. Poster presentations will be possible in the discussion workshop.

Conference venue:

German Federal Environmental Agency
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Preliminary Programme Tuesday, 9th May 2006

- 12:00 *Coffee and Tea*
13:00 Opening, Welcome, Housekeeping
13:10 Chorus I et al.: Introduction – Why study peptides in cyanobacteria?
13:20 Welker: Introduction to the cyanopeptides

Occurrence and physiological regulation

- 13:30 Niesel V. et al.: Occurrence of cyanopeptides and toxic cyanobacteria – what do PEPCY data demonstrate for water-bodies studied in Europe?
13:50 Welker & Kurmayer: Diversity of peptide chemotypes in *Planktothrix rubescens* populations from European lakes as revealed by single-filament mass spectral analysis analysis
14:10 Visser et al: The effect of environmental factors on peptide production and content of *Microcystis*, *Planktothrix* and *Anabaena* in cultures.

Genetic regulation and molecular tools

- 14:30 Börner, T.: Molecular tools in assessing the risk of toxic cyanobacteria
14:50 Dittmann, E; Ishida, KI; Christiansen, G., Börner, T. Diversity of peptide synthetases in *Microcystis* and *Planktothrix*
15:10 Sivonen, K: Biosynthetic gene clusters in *Anabaena*, *Nostoc* and *Nodularia* and the applications of molecular detection of microcystin/nodularin producers in Finnish Lakes and the Baltic Sea

15:30 *Afternoon Coffee and Tea*

- 16:00 Tandeau de Marsac, N., Cadel, S., Welker, M., Dauga, C., Quillardet, P., Castets, AM: Halogenated oligopeptides in *Microcystis aeruginosa*: occurrence and gene cluster plasticity
16:20 Kurmayer, Christiansen, Schober, Fastner: Genetic diversity in the production of small bioactive peptides in Cyanobacteria

Toxicity, Hazard, Risk Assessment and Implications for Management

- 16:40 Grummt, T.; Heinze, R: Screening of cyanobacterial peptides for cytotoxicity and genotoxicity: Are we focusing on the right endpoints ?
17:00 Hoeger, S.J., Dietrich, D.R.: New data on toxicity of cyanobacterial peptides and the consequences for hazards characterisation
17:20 Chorus I.: Advances in cyanotoxin risk assessment and risk management

17:45 *collective trip to*

19:00 *Conference Dinner in Rotating TV-Tower and Berlin Nightlife*



Preliminary Programme Wednesday, 10th May 2006

Detection and Analysis

- 9:00 Morrison, Louise; Codd, Geoffrey: Detection, purification and optimised extraction of cyanopeptides
- 9:20 Christoffersen, K. S., U. Friberg-Jensen, G. Mulderij and T. Rohrlack: Inhibition of physiological processes in *Daphnia* by cyanobacterial toxins - what are the implications and potentials?!

9:40 Morning Coffee Workshop in small groups and poster session

Suggested working-group topics:

1. What are the key perspectives for genetic approaches methods in cyanobacterial metabolite research for the next 5 years ?
2. Which knowledge gaps on occurrence of cyanobacterial metabolites are critical?
3. Which are the most pressing unresolved issues in understanding cyanobacterial toxicity?
4. In the light of the current uncertainties, how can cyanotoxin risks best be assessed and managed locally?

Posters to highlight any of these aspects are welcome !

- 11:30 Plenary: Panel with 1-2 rapporteurs from each working-group to introduce working-group outcomes for general discussion
- 12:00 *lunch*
- 13:00 Departure

Public transport to the conference:

- Bus 148 and Bus 101, Von-Laue-Str. (4 minutes to walk)
- S-Bahn S1, Lichterfelde-West (10 minutes to walk)
- U3, Thielplatz (10 minutes to walk)

Public transport to the conference dinner (19:45 at the television tower; password for reduced entrance fee: „Umweltbundesamt“)

- S Bahn S1, Unter den Linden, then the Bus 100 to Alexanderplatz

Fees: This conference will be operated without a registration fee, but the conference dinner is at your own costs. To make this work, we do need your cooperation regarding reliable registration both for the scientific meeting and for the dinner (for which we need to make a legally binding reservation). Please send your registration form to pepcy.conference@uba.de or fax to Verena Niesel, +4930 8903 1800 by April 15th.

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