

3rd HBM4EU Training School Preliminary Programme

Organization remarks

Accommodation – hotel Garni, Vinařská, <http://www.skm.muni.cz/hotel/garni-vinarska?en>, including breakfast and wi-fi connection

Registration - Monday 17 June, 8:30-9:00, RECETOX, pavilion A29, Kamenice 5, lecture room RCX 1, 2nd floor

Note: The first day students from RECETOX will pick up participants of the Training School at the reception of the Garni hotel at 8:15 a.m. and accompany them to RECETOX

Commuting to the venue - every morning and evening – yourself, please respect the time in the programme

Coffee-breaks - Na Lávce café, area of University Campus, 2nd floor, very close to lecture room

Lunches – Na Lávce café – area of Campus Square, 2nd floor, for the time see the detailed programme – you receive 'meal tickets'

How to get access to Wifi

- First day you receive a username and password at the registration desk (valid for whole week)
- Connect to the **Eduroam/MUNI** network and enter your username and password.

Other

- We will prepare for you a memory stick with all presentations and photos – you will get it on Friday
- The presentations will also be made available on <https://www.hbm4eu.eu/online-library/>
- Summer school is credited – 4 credits for theoretical part and 4 credits for laboratory practice
- All news will be announced by RECETOX staff and published on the noticeboard before the lecture room

Please note that this is the preliminary version of the programme and (minor) changes are still possible. All registered participants will receive the final programme at the venue.



Detailed Programme

3rd HBM4EU Training School

Date: Monday, 17 June, 2019 – Friday, 21 June, 2019

Location: RECETOX, pavilion A29, Kamenice 5, lecture room RCX 1, 2nd floor

Instructors

Petra Apel, Umweltbundesamt (UBA), Berlin, Germany

Jos Bessems, Flemish Institute for Technological Research (VITO), Mol, Belgium

Luděk Bláha, RECETOX, Masaryk University, Czech Republic

Martin Bobák, UCL, United Kingdom

Jurgen Buekers, Flemish Institute for Technological Research (VITO), Mol, Belgium

Tony Fletcher, Public Health England (DH), UK

Alenka Franko, University Medical Centre Ljubljana, Slovenia

Alberto Gotti, Aristotle University of Thessaloniki, Greece

Klára Hilscherová, RECETOX, Masaryk University, Czech Republic

Milena Horvat, Department of Environmental Sciences, Jožef Stefan Institute, Ljubljana, Slovenia

Spyros Karakitsios, Aristotle University of Thessaloniki, Greece

Jana Klánová, RECETOX, Masaryk University, Czech Republic

Lisbeth E. Knudsen, Department of Public Health, University of Copenhagen, Denmark

Rosa Lange, Umweltbundesamt (UBA), Berlin, Germany

Katarina Magulová, Secretariat of the Stockholm Convention, UNEP, Switzerland

Eva Ougier, ANSES, Maisons-Alfort Cedex, France

Hynek Pikhart, UCL, United Kingdom

Tiina Santonen, Finnish Institute of Occupational Health (FIOH), Finland

Denis Sarigiannis, Aristotle University of Thessaloniki, Greece

Paul Scheepers, Radboud university medical center, Nijmegen, The Netherlands

Martin Scheringer, Institute for Chemical and Bioengineering, ETH Zürich, Switzerland

Hanna Tolonen, National Institute of Health and Welfare (THL), Helsinki, Finland

Haim Yacobi, UCL, United Kingdom



Detailed Programme for Day 1-2

Delineating behavior (pharmacokinetics models) and effects (adverse outcome pathways) of HBM priority compounds

Objectives

The main objective is to provide an up-to-date overview of frameworks, methods and examples (case studies) that are currently available for delineating of toxico/pharmacokinetic ADME processes (PBPK models) and mechanistic adverse outcome pathways (AOPs). In addition, the research-policy transfer processes and examples of success stories will be presented. The focus will be primarily on HBM4EU priority compounds and other chemicals of regulatory concern. The training will be a combination of classes, computer exercises, workshops and also laboratory demonstrations (illustration how the actual experimental data for PBPK models and/or AOPs are being derived).

Learning objectives

After the training participants will:

- have an overview of available frameworks and modeling approaches of pharmaco/toxicokinetics;
- have in depth understanding and hands-on experience with the use of selected PBPK models;
- be able to properly understand and interpret the PBPK outcomes and will be aware of limitations and uncertainties;
- be able to use research data to development of conceptual AOPs;
- be able to critically discuss quality and plausibility of AOPs using the weight-of-evidence approach;
- be able to independently work with the online platforms such as AOPWiki;
- know examples of toxicokinetics and AOPs specific for HBM4EU priority compounds;
- be aware of various ways how the researchers may directly support policy making at national and international levels.



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Day-1 Monday, June 17th, 2019

A12 PBPKs in HBM - basics, applications, interpretation, case studies

Prof. Jana Klánová, course leader/moderator

08:30 Registration of participants

09:00 Welcome and introductory remarks

09:30 Jana Klánová

Environmental exposures and human biomonitoring in Europe

11:00 *Coffee Break: Na Lávce café, area of University Campus, 2nd floor*

11:30 Denis Sarigiannis, Spyros Karakitsios, Alberto Gotti

[Title to be determined]

13:00 *Lunch: Na Lávce café, area of University Campus, 2nd floor*

14:00 Martin Scheringer

Environmental and human exposure to persistent toxic substances: what can we learn from environmental fate models and pharmacokinetic models?

15:30 *Coffee Break: Na Lávce café, area of University Campus, 2nd floor*

16:00 Katarina Magulová

The role of human biomonitoring in the global agenda to prevent and control releases of PTS



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Info: Email: HBM4EU@uba.de

Day-2 Tuesday, June 18th, 2019

A13 Adverse outcome pathways (AOPs) & mechanistic toxicology

Prof. Luděk Bláha, course leader/moderator

9:00 Luděk Bláha

Welcome to Day 2, Introduction - mechanistic toxicology and AOPs in chemical risk assessment and HBM

9:15 Denis Sarigiannis, Spyros Karakitsios, Alberto Gottl, Luděk Bláha et al.

Training on AOPs – part 1 – Introduction to AOPs, linking AOPs to PBPK models

10:30 *Coffee Break: Na Lávce café, area of University Campus, 2nd floor*

11:00 Denis Sarigiannis, Spyros Karakitsios, Alberto Gotti, Luděk Bláha et al.

Training on AOPs – part 2 – Preparing AOPs, Weight of Evidence, Practical aspects

12:30 *Lunch: Na Lávce café, area of University Campus, 2nd floor*

14:00 Iva Sovadinová, Pavel Babica, Lola Bajard, Luděk Bláha et al.

Workshop – prepare, construct and discuss your AOP

Hands on – explore AOPWiki online

15:30 *Coffee Break: Na Lávce café, area of University Campus, 2nd floor*

16:00 Lola Bajard, Klára Hilscherová, Pavel Babica

Case studies and advanced approaches - flame retardants, thyroid “disruptome”

Advanced approaches in mechanistic toxicity assessment

18:30 *Dinner*





Detailed Programme for Day 3-4

Objectives

The main objective is to provide an up-to-date overview of frameworks, methods and approaches that are - currently available for including HBM internal exposure data into risk assessment and environmental burden of disease calculations, highlighted by examples (case studies). This will include an overview of the derivation of health-based human biomonitoring guidance values (HBM-GV) that can be used to interpret HBM exposure data. Additionally, an example will be presented on epidemiological data and the difficulties that go with interpretation of the data in a health context. The objective is also to show-case use of HBM data to see time-trends, age group differences and regional differences in internal exposure. Lastly, attention will be given to communication of potential risks to risk managers and society.

Learning objectives

After the training participants will have:

- an overview of human risk assessment and the support HBM data can provide;
- an understanding how HBM exposure data can be introduced into refinement of risk assessment for the general population as well as for the worker population;
- some understanding of how HBM exposure data can be used to calculate the burden of disease related to cadmium exposure;
- some understanding of how health-based human biomonitoring guidance values (HBM-GV) can be derived for the general population versus the worker population;
- some understanding of use of HBM exposure data to calculate excess life-time cancer risk;
- some understanding of how epidemiological data on PFAS could be used in a health impact assessment context;
- an understanding of how HBM data can be used to show time-trends and differences between age groups, subpopulations and regions.





Day-3 Wednesday, June 19th, 2019

A14 Risk assessment and use of HBM data - Case studies illustrating opportunities, challenges and gaps

Jos Bessems, course coordinator/moderator

9:00 Tiina Santonen, Jos Bessems

Introduction to risk assessment

Use of HBM in risk assessment

10:30 *Coffee Break: Na Lávce café, area of University Campus, 2nd floor*

11:00 Jos Bessems, Tony Fletcher

Data needs (e.g. toxicokinetics) for use of HBM in risk assessment/health impact assessment

PFAS Case study: Human epidemiological data versus animal toxicity data

12:30 *Lunch: Na Lávce café, area of University Campus, 2nd floor*

14:00 Tiina Santonen

Two or three case studies illustrating the use of HBM in Excess Lifetime Cancer Risk (ELCR) assessment: Cr(VI), MOCA, o-toluidine (all occupational) and/or PAH (general and occupational populations)

15:30 *Coffee Break: Na Lávce café, area of University Campus, 2nd floor*

16:00 Jurgen Buekers, Jos Bessems

HBM-Based indicators for time trends and for differences between age groups, subpopulations and regions

Cadmium case study: Environmental burden of disease





Day-4 Thursday, June 20th, 2019

A15 HBM-Based indicators/Risk Communication and HBM Guidance Values (HBM-GV)

Jos Bessems, course coordinator/moderator (morning); Lisbeth E. Knudsen, moderator (afternoon)

9:00 Eva Ougier

Phthalates case study: Use of HBM-GV (as in HBM4EU) compared to DNEL internal approach
ECHA RAC

Paul Scheepers

Risk communication, principles and cases in the context of HBM applications

10:30 *Coffee Break: Na Lávce café, area of University Campus, 2nd floor*

11:00 Petra Apel, Rosa Lange, Eva Ougier

Establishing health-based HBM Guidance Values (HBM-GV)

Concept and additional benefit of HBM guidance values for the general population

Case study 1 - Derivation of a HBM-GV for the general population referring to a selected phthalate

Specificities of the HBM-GV derivation for the occupational field

Case study 2 - Derivation of a HBM-GV for workers with regard to cadmium

12:30 *Lunch: Na Lávce café, area of University Campus, 2nd floor*

14:00 Presentations from HBM4EU course participants on own ongoing activities (group work moderated by Lisbeth E. Knudsen, et al.)

15:30 *Coffee Break: Na Lávce café, area of University Campus, 2nd floor*

16:00 Network event presenting the ongoing activities (Lisbeth E. Knudsen, Paul Scheepers, Alenka Franko, Milena Horvat, Hanna Tolonen)





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Day-5 Friday, June 21th, 2019

A16 From contaminants to populations

Prof. Martin Bobák, UCL, United Kingdom, course coordinator/moderator

9:00 Martin Bobák

Air pollution and birth outcomes – epidemiological approach

10:00 Hynek Pikhart

Multi-level models of determinants of health

11:00 *Coffee Break: Na Lávce café, area of University Campus, 2nd floor*

11:30 Haim Yacobi

Determinants of health and wellbeing in urban studies: qualitative approach

12:30 wrap-up

13:00 *Lunch: take away*

End of the Summer school, departures of participants



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