

Fish and Amphibian Embryos as Alternative Models in Toxicology and Teratology

Aulnay-sous-Bois/Paris, 1-2 December 2016

Programme update (also included in the abstract book that will be provided at the registration desk)

Important note for the shuttle bus

Thursday, December 1

8:00 | Bus shuttle from Novotel Aulnay Sous Bois and registration upon arrival (no shuttle for invited speakers and organisation committee members staying in Hotel du Parc, 10 min walking distance from L'OREAL)

Please note that **registered participants** stay in Novotel Aulnay-sous-Bois (unless not arranged differently)

Novotel Paris Nord Expo Aulnay
65 rue Michel Ange
93600 Aulnay Sous Bois
Tel : +33 (0) 1 58 03 90 84

Invited speakers and members of the organisation committee (unless not arranged differently) stay in Hotel-du-Parc, which is within walking distance of L'OREAL (no transportation required):

Hotel du Parc
16 Avenue Dumont
93600 Aulnay-sous-Bois

For details on the venue location please refer to our web page:

<https://www.ufz.de/fish-frog-embryo/>

See next pages for scientific programme

Programme | Invited speakers are marked with an *

Thursday, December 1

9:15 | Welcome and introduction

09:30 | Topic 1: Automated analysis and feature detection
Chair: Noémie Croze, L'ORÉAL

09:30 | Mehmet Fatih Yanik*
Hyper-dimensional in vivo screening technologies and applications

10:15 | Christian Pylatiuk*
Automated feature detection and screening in zebrafish embryos

11:00 | Coffee break and Posters

11:30 | Topic 2: Neurotoxicity
Chair: Peter de Witte, KU Leuven

11:30 | Thorsten Meinl*
Data Analysis with the KNIME Analytics Platform

11:55 | Daniëlle Copmans*
Phenotypic clustering of 14 classes of neuroactive molecules using the zebrafish photomotor response

12:20 | Jessica Legradi
Application of novel omics tools for zebrafish (neuro-)toxicological research

12:40 | Krishna Tulasi Kirla
Psychoactive substance testing in zebrafish larvae-comparative study of cocaine and meta-chlorophenylpiperazine (mCPP)

13:00 | Lunch break (buffet) in poster and exhibition area

14:30 | Topic 3: Toxicity screening
Chair: Stefan Scholz, UFZ

14:30 | Stephanie Padilla*
Toxicity Screening of a Subset of the ToxCast Chemical Library Using a Zebrafish Developmental Assay: Comparison of Methods

- 15:15** | David C. Volz*
High-Content Screening of Chemical Toxicity in Zebrafish Embryos
- 16:00** | Celia Quevedo
Toxicity profiling of 32 NTP compounds using a battery of assays in zebrafish embryos including teratogenicity, behavior, cardiotoxicity, ototoxicity and hepatotoxicity
- 16:20** | **Coffee break and posters**
- 17:00** | Topic 3: Epigenetics
Chair: Jessica Legradi, VU Amsterdam
- 17:00** | Peter Alestrøm*
Zebrafish as a model for eco-epigenetics studies - effects of environmental IR
- 17:45** | Topic 4: Toxicokinetics and biotransformation
Chair: Aldert Piersma, RIVM
- 17:45** | Thorsten Reemtsma*
Toxicokinetics in zebrafish embryos becoming transparent – benefits and perspectives of chemical analytics
- 18:30** | Steven van Cruchten
Bioactivation of prodrugs in the zebrafish embryo: myth or truth?
- 18:50** | *End of day 1 presentations*
- 19:00** | **Departure for dinner**
Busses will provide transportation back to the hotels.

Friday, December 2

- 08:30** | Bus shuttle from Novotel Paris Nord Expo Aulnay
- 09:15** | Short platform presentation participants
- 09:15** | David du Pasquier
Inter-laboratory OECD validation of the Xenopus Embryonic Thyroid Signalling Assay

- 09:30** | Elodie Puybareau
Automated image analysis of fish embryo for toxicology and teratology assays: a state of the art
- 09:45** | Sepand Rastegar
Zebrafish biosensor for toxicant induced muscle hyperactivity
- 10:00** | Introduction to breakout sessions (Stefan Scholz, Marc Léonard)
- 10:15** | Parallel breakout sessions
(Coffee Break for all 11:00 - 11:30)

Short talks in breakout sessions to be dependent on participants submission. Some session chairs have asked poster presenters to give an additional short talk in the breakout session. Hence, there might be additional presentations.

Topic 1. AOP-targeted predictive assays / biomarkers

Chairs: David Volz, NN, Dries Knapen

Talks should be limited to approx. 7 minutes plus discussion.

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| Marion Sebire | Stickleback FET test: a potential new test guideline? |
| Javier Terriente | ZeGlobalTox, A new way for global toxicity assessment |
| Benjamin Schreiber | Weatherfish embryos (<i>Misgurnus fossilis</i>) as potential alternative for sediment toxicity testing |
| Andrew Tindall | Linking gene induction to physiological effects using transgenic medaka |
| Stefan Scholz | Pumping zebrafish embryos for diagnostic information |
| Thomas Dickmeis | Endocrine disruptor risk evaluation in vivo with transgenic zebrafish larvae indicating glucocorticoid signalling activity |

Topic 2. Behavioural assays / neurotoxicity

Chairs: Jessica Legradi, Peter de Witte, Marc Léonard

Presentations: 10 min plus discussion

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| Xavier Cousin | Marine medaka - a model fish species for ecotoxicology assessment in brackish and seawater: examples from Cd assays and behavioural characterization |
| Varvara Liouisia | Micropollutants in municipal wastewater: ozonate it or not? |
| Cynthia Froc | AMATrace: a core facility for measuring fish behavior |

Topic 3. Exposure, uptake, biotransformation, toxicokinetics

Chairs: Kai-Uwe Goss, Thorsten Reemtsma

Presentations: 10 min plus discussion

- Marek Pipal** Effects of field cyanobacterial biomass extracts with retinoid-like activity on zebrafish embryos
- Carolina Vogs** Understanding toxicokinetic processes in the growing zebrafish embryo
- Ellen Michiels** Nano-injection in the zebrafish embryo as an alternative exposure route for environmental risk assessment of endocrine disrupting pharmaceuticals

Topic 4. Image analysis / developmental toxicology

Chairs: Stephanie Padilla, Noemie Croze, Aldert Piersma

- Jorke Kamstra** Differential DNA methylation at conserved non-genic elements and transgenerational inheritance following mono(2-ethylhexyl)phthalate and 5-azacytidine exposure in zebrafish
- Xuan-Bac Nguyen** Optimization and validation of the IN Cell Analyzer as a tool to quantify drug induced hepatotoxicity in zebrafish larvae
- Elisabet Teixido** ZFminus1: A strategy to reduce animal tests for developmental toxicity testing by a combined use of mammalian models and the zebrafish embryotoxicity test
- Katya Tsaïoun** Zebrafish Embryotoxicity Test - a systematic comparison to mammalian OECD Guideline test
- Francis Smet** VAST Biolmager: Automated sampling, imaging and dispensing of 2-7 day old Zebrafish larvae.

13:00 | Lunch Break

14:30 | Continuation of breakout session
Finish discussion, prepare report for final panel discussion

15:30 | Summary from breakout sessions, discussion, actions to take, final remarks
Panel discussion: Fish and Amphibian Embryos in regulatory use: limitations, perspectives and future research requirements
The following participants had agreed to join the panel at the time the abstract book was printed: Marc Léonard (L'Oréal), Graham Whale (Shell), Francois Busquet (CAAT), Dries Knepen (Univ. of Antwerp), Aldert Piersma (RIVM)

17:00 | End of Symposium

*Please note that **no** shuttle service will be provided at the end of the symposium, since most of the participants will return home. The conference facility is located close to the RER train station "Aulnay-sous-Bois" with trains directly serving the airport Charle des Gaulle or the International train station Gare du L'Est. If you need help with transportation and planning please do not hesitate to contact us.*

LIST OF POSTERS

Name	First name	Abstract title
Bandmann	Oliver	GTP cyclohydrolase I – a novel risk gene for Parkinson's disease
den Broeder	Marjo	Zebrafish as a model for understanding the role of environmental chemicals in developing obesity
Copmans	Danielle	Phenotypic clustering of 14 classes of neuroactive molecules using the zebrafish photomotor response
Dickmeis	Thomas	Endocrine disruptor risk evaluation in vivo with transgenic zebrafish larvae indicating glucocorticoid signalling activity
Faßbender	Christopher	Reducing the number of fish used in acute toxicity testing: Incorporation of the Fish Embryo Acute Toxicity test into the threshold approach
Froc	Cynthia	AMATrace: a core facility for measuring fish behavior
Gabriëls	Isabelle J.	Development of a test method for transgenerational effects of genetically modified crops in food using the zebrafish model.
Gazsi	Gyöngyi	Investigation of fluoride ion oxidative and ossification effect on zebrafish
Gazsi	Gyöngyi	Cardiovascular and neurotoxicity effects of the 2,4-D and chlorpyrifos on zebrafish with acute exposure
Hilscherova	Klara	Retinoid-like activities in surface waters can be associated with teratogenicity in frog and fish embryos
Hoberman	Alan	The Zebrafish Model for Developmental Toxicity Screening of the DASTON List of Chemicals – Initial Results
Johann	Sarah	Can zebrafish larvae be used as a biosensor for contaminant detection in the Baltic Sea?
Kamstra	Jorke	Generational effects of low dose ionizing radiation on DNA methylation in zebrafish
Kupsco	Allison	Tris(1,3-dichloro-2-propyl) phosphate Induces Genome-Wide Hypomethylation Within Early Zebrafish Embryos
Lara	Rafael	Early development of the auditory sense in zebrafish: Effects of hormonal levels and environmental noise conditions

Name	First name	Abstract title
Leuthold	David	The Zebrafish Embryo Toxicity Test as Effect-Based Tool – Validation for Testing Environmental Samples
Michiels	Ellen D. G.	Nano-injection in the zebrafish embryo as an alternative exposure route for environmental risk assessment of endocrine disrupting pharmaceuticals
Michiels	Ellen D. G.	Evaluating complex mixtures in the zebrafish embryo by reconstituting field water samples: a metal pollution case-study
Montgomery	Therese R.	An examination into the toxicity of New Psychoactive Substances (NPS) using Zebrafish
Nguyen	Xuan-Bac	Optimization and validation of the IN Cell Analyzer as a tool to quantify drug induced hepatotoxicity in zebrafish larvae
Nüßer	Leonie	Sensitivity of zebrafish larvae behaviour in the context of on-line contamination event detection in water distribution systems
Periz Stanačev	Jelena	Ontogeny of steroid hormone metabolism gene transcription during zebrafish embryonic development
Quevedo	Celia	Toxicity profiling of 32 NTP compounds using a battery of assays in zebrafish embryos including teratogenicity, behavior, cardiotoxicity, ototoxicity and hepatotoxicity
Schreiber	Benjamin	Weatherfish embryos (<i>Misgurnus fossilis</i>) as potential alternative for sediment toxicity testing
Sebire	Marion	Can fish embryo toxicity (FET) test with three-spined stickleback (<i>Gasterosteus aculeatus</i>) show the similar transcriptional response demonstrated in acute toxicity test?
Steenbergen	Peter J	In vivo high content screening in zebrafish to score developmental nephrotoxicity of approved drugs
Stinckens	Evelyn	Validation of the AOP network “Thyroperoxidase and/or deiodinase inhibition leading to impaired swim bladder inflation”

Name	First name	Abstract title
Teixido	Elisabeth	ZFminus1: A strategy to reduce animal tests for developmental toxicity testing by a combined use of mammalian models and the zebrafish embryotoxicity test (ZFET or ZETA)
Terriente	Javier	ZeGlobalTox. A new way for global toxicity assessment
Tsaioun	Katya	Zebrafish Embryotoxicity Test - a systematic comparison to mammalian OECD Guideline test
Vliet	Sara	High-content behavioral screening reveals that zebrafish embryos are unable to discriminate modes of action for neurotransmission-interfering compounds
Zoupa	Maria	Developmental abnormalities in zebrafish embryos exposed to Triadimefon

Guidance for breakout session

Only a part of the breakout session should be used to inform on specific projects in the field and progress in state of the art. Rather a focus on discussion of recent developments, knowledge gaps, regulatory issues, etc. is foreseen. Presentation should be given in a brief format and an interactive manner, i. e. interruptions should be allowed and findings should be directly discussed when presented. The following major issues should be discussed in all breakout session and summarised for the whole symposium:

1. What are the major recent developments important for the field?
2. AOP concept (does only indirectly apply for the toxicokinetic session): What are the AOPs relevant for the area? What are the relevant molecular initiating and key events and can we develop embryo-based assays to predict adverse outcomes?
3. What are the major knowledge gaps, priority areas that need to be addressed?
4. As a community, how can we address these knowledge gaps (joint projects, joint funding applications, etc.).
5. What are the major concerns/bottleneck – if any? - for regulatory applications in the specific field? What is the perspective of regulatory application – can we expect a potential use of fish and amphibian embryos in the near future? If not – what is the main reason that prevents application?
6. Industry perspective: What is considered by industry as the major area for future developments? What can be achieved prior to or independent of acceptance by regulators (screening)?