



"Intelligence-led Assessment of Pharmaceuticals in the Environment"

Integration Workshop at iPiE Forum Meeting

Preparing for integration of the different models into a prediction and prioritization framework

On 26th and 27th of February, a small subgroup of the project partners met in Berlin to start the planning of the integration of the different models in the broader framework of prediction and prioritization.

As the project strives to support the prediction of environmental hazard and risks for human pharmaceuticals, which can be applied in various types of use cases, the aim of this workshop was to develop first thoughts on how the different models, which are developed in terms of environmental behavior, spatial and biota exposure predictions, and effects predictions in various environmental taxa, can be integrated into an overall concept of a prediction framework and a description of potential applications in various prioritization scenarios.

Examples of the use cases to be considered, were:

- The development of a new pharmaceutical may be supported by the prediction of potential risks of one or a small number of similar compounds at a stage of development, where environmental studies are not feasible but knowledge on the environmental behavior and effects may help to prepare for an environmental risk mitigation strategy.
- Local or regional water authorities may wish to obtain particular risk predictions for a number of pharmaceutical compounds which occur in their waste water stream, in order to plan for suitable waste water management options.
- Regulators on a regional, national or international level are often faced with the question of the environmental relevance of legacy pharmaceuticals, which have not been assessed for their environmental risk and for which only an insufficient data base exists or no data at all. Since it is neither feasible nor efficient to envisage the testing of all legacy compounds on the market, prioritization of those compounds is an important step to develop a concept for a risk assessment process for legacy compounds. For the purpose of prioritization of a large number of compounds, a description of a workflow for applying the iPiE exposure and effects models needs to be developed.

The integration workshop analyzed the presently available IPIE models for their role in the different use case scenarios and how they could be integrated into an overall framework, which serves those different use cases. A precise description of the different workflows for applying the developed models will be developed in the coming month. We will keep our readers posted.



Reinhard Laenge
project coordinator

iPiE at the SETAC Europe 28th Annual Meeting

SETAC Europe 28th Annual Meeting was held from **13–17 May 2018** in **Rome, Italy**.

The main theme of the meeting was: “**Responsible and Innovative Research for Environmental Quality**”

iPiE partners such as University of York, ECT, RU, UNEXE, LJMU and AZ had the opportunity to engage the audience through posters and platform presentations displayed in different scientific sessions programmed.

Jason Snape from AZ, one of the 4 invited Keynote Speakers, presented a session entitled: “**The Environmental Dimension of Antimicrobial Resistance: Assessing and Managing the Risks of Anti-infectives**”.

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iPiE News



iPiE 6th Forum Meeting

The 6th **iPiE Forum Meeting** was held in Barcelona during the 24th and 25th of April 2018. The meeting counted with the attendance of the Consortium. They discussed on the updates of Work Packages and the progress done in the past months.

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iPiE ECOdrug Database

The collaboration between AstraZeneca and the College of Life & Environmental Sciences at the University of Exeter to understand the environmental risk of medicines has led to a new research platform tool, ECOdrug.

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IMI 10th Anniversary



Congratulations!

IMI is celebrating its 10th anniversary and **iPiE** is proud to be part of its success! IMI is working to overcome some of the biggest medical challenges and our project is contributing taking a collaborative, open innovation approach to some of the biggest challenges in medical research and drug development.

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iPiE Publications

ARTICLE (AZ): [A review of the pharmaceutical exposome in aquatic fauna.](#) Miller TH, Bury NR, Owen SF, MacRae JI, Barron LP. *Environmental Pollution*. (2018) 239, 129-146.

ARTICLE (UoY): [Temporal and spatial variation in pharmaceutical concentrations in an urban river system.](#) Burns E, Carter L, Kolpin D, Thomas-Oates J, Boxall A. *Water Research*. (2018) 137: 72-85.

ARTICLE (AZ): [Establishment and long-term maintenance of primary intestinal epithelial cells cultured from the rainbow trout, *Oncorhynchus mykiss*.](#) Langan LM, Owen SF, Jha AN (2018) *Biology Open* 7(3), bio032870.

ARTICLE (AZ): [Assessing the impact of benzo\[a\]pyrene with the *in vitro* fish gut model: An integrated approach for eco-genotoxicological studies.](#) Langan LM, Arossa S, Owen SF, Jha AN (2018) *Mutation Research/Genetic Toxicology and Environmental Mutagenesis* 826, 53-64.

ARTICLE (RU) [Aqueous-phase photooxygenation of enes, amines, sulfides and polycyclic aromatics by singlet \(\$^1\Delta_g\$ \) oxygen: prediction of rate constants using orbital energies, substituent factors and Quantitative Structure-Property.](#) Nolte T, Peijnenburg W. *Environmental Chemistry* (2018) 14(7) 442-450.

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