iPiE

Intelligence-led Assessment of Pharmaceuticals in the Environment

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imi innovative medicines initiative

efpia

Intelligence-led Assessment of Pharmaceuticals in the Environment (iPiE)

How can we prioritize the environmental testing requirements for pharmaceuticals, which are already on the market, but currently lack sufficient environmental information?

How can we assess environmental risk earlier in the development of new human-use pharmaceuticals?

These are the key questions being addressed by a consortium of university researchers, regulators, small companies and the pharmaceutical industry in the four year iPiE project.

Overall aim of iPiE

iPiE aims to develop predictive frameworks that use information from existing datasets on environmental fate and effects of APIs, toxicological studies, pharmacological mode of action and *in silico* models to support more intelligent environmental testing of pharmaceuticals in development and to prioritise legacy pharmaceuticals for full environmental risk assessment and/or environmental (bio) monitoring.

The iPiE project is being delivered by a public-private partnership involving 9 academic groups, 3 SMEs and 13 pharmaceutical companies and is funded jointly by the EU Commission and the European pharmaceutical industry through the Innovative Medicines Initiative (IMI) program.

The consortium comprises world leading experts in data management and computational modelling, pharmacology, ecotoxicology, environmental chemistry, predictive (eco)toxicology, prioritisation and intelligent testing methodologies and environmental risk assessment.

Achievements up to date

- Environmental fate, ecotoxicological effects, and physico-chemical information for almost 200 pharmaceutical compounds has been collected from industry reports and entered into a high quality data base.
- Models have been developed to estimate concentrations of pharmaceuticals in surface waters, sediments and soils across Europe.
- Models have been developed for predicting effects of pharmaceuticals on aquatic organisms.
- Studies have been initiated to validate the effects assessment models, and environmental monitoring is being used to validate exposure models.
- iPiEsys software version 1 has been released to the project, which allows the database to be searched and predictive models to be run.
- iPiESum has been produced to provide a summary level view of iPiE data for external stakeholders, and will allow for searching for compounds and corresponding studies in the iPiE database.

more info:
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Participants

EFPIA (European Federation of Pharmaceutical Industry and Associations)

- AstraZeneca AB, Sweden
- Bayer AG, Germany
- Boehringer Ingelheim International GmbH, Germany
- Bristol-Myers Squibb Company, USA
- Eli Lilly and Company, Ltd., United Kingdom
- F.Hoffmann-La Roche Ltd, Switzerland
- GlaxoSmithKline plc, United Kingdom
- Janssen Pharmaceutica NV, Belgium
- Merck Sharp & Dohme, Corp., USA
- Novartis Pharma AG, Switzerland
- Pfizer Limited, United Kingdom
- Sanofi Recherche & Développement, France
- TEVA Pharmaceutical Industries Ltd, The Netherlands

Universities, Research organisations, Public bodies, non-profit groups

- Federal Environment Agency, Germany
- Fundació Institut Mar d'Investigacions Mèdiques (IMIM), Barcelona, Spain
- Helmholtz Centre for Environmental Research GmbH, Germany
- Lhasa Limited, Leeds, United Kingdom
- Liverpool John Moores University, United Kingdom
- Stichting Katholieke Universiteit Nijmegen, The Netherlands
- Universitat Pompeu Fabra, Barcelona, Spain
- University of Exeter, United Kingdom
- University of York, United Kingdom

SMEs

- ECT Oekotoxikologie GmbH, Germany
- Molecular Networks GmbH, Germany
- Synapse Research Management Partners S.L., Spain

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