ERAPharm partners

The ERAPharm consortium combines the expertise of 14 partners from seven European countries and Canada:

ECT Oekotoxikologie GmbH
Flörsheim/Main
Germany

AstraZeneca UK Ltd.
Brixham Environmental
Laboratory, UK

Brunel University
Institute for the Environment, UK

Federal Institute of
Hydrology (BfG)
Koblenz, Germany

Centre National du Machinisme
Agricole du Génie Rural des
Eaux et des Forêts
Lyon, France

University of York,
Environment Department, UK

Danish University of
Pharmaceutical Sciences
Department of Analytical
Chemistry
Copenhagen, Denmark

Swiss Federal Institute for Environmental
Science and Technology (EAWAG)
Dübendorf, Switzerland

Geotechnisches
Institut AG
Bern, Switzerland

Utrecht University
Institute for Risk Assessment
Sciences
Utrecht, The Netherlands

Instituto Nacional de
Investigación y Tecnologia
Agraria y Alimentaria
Department of the Environment
Madrid, Spain

National Environmental Research Institute
Department of Terrestrial Ecology
Silkeborg, Denmark

Umweltbundesamt
Berlin, Germany

Canadian Water Network
Waterloo, Ontario
Canada

Project co-ordinator:
Thomas Knacker
ECT Oekotoxikologie GmbH
Böttgerstr. 2-14
D-65439 Flörsheim/Main, Germany
Phone: +49-6145-95 64 11
e-mail: th-knacker@ect.de

Further information: www.erapharm.org

ERAPharm

Environmental Risk Assessment of Pharmaceuticals

A research project funded within the 6th framework programme of the European Union
Contract No 511135

ERAPharm's objectives

A large number of pharmaceuticals is used in the treatment and prevention of diseases. Following administration to humans or animals, pharmaceuticals are released to the environment mainly via sewage effluents and application of sewage sludge and manure to land. The widespread detection of pharmaceuticals in surface waters, soils and groundwater across the world has raised concern about the potential impact of these bioactive substances on the environment.

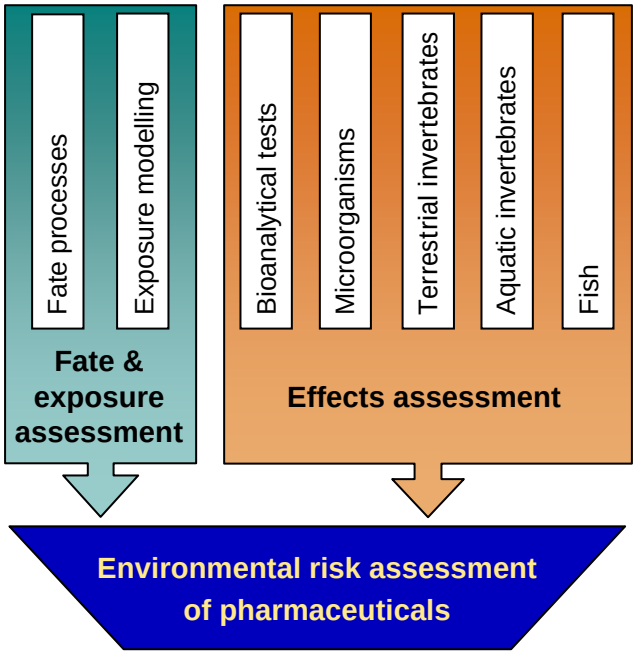
European regulatory guidelines for assessing the environmental risks of veterinary pharmaceuticals have been established; those for human pharmaceuticals are being discussed. However, there are still considerable gaps in the current knowledge on fate and effects of pharmaceuticals in the environment.

ERAPharm will address these gaps by

- investigating factors and processes that affect the fate of pharmaceuticals in the environment
- developing a system for scenario-based exposure assessments
- evaluating approaches to target testing
- investigating if environmentally relevant concentrations of pharmaceuticals cause effects in the environment
- further developing experimental testing approaches for evaluating fate and effects of pharmaceuticals

ERAPharm's work packages

ERAPharm is organised in interdependent work packages (WPs):



ERAPharm will advance existing knowledge and methods for evaluating potential risks that human and veterinary pharmaceuticals pose to the environment.

It will provide recommendations on how to improve environmental risk assessment procedures for human and veterinary pharmaceuticals.

WP 1.1 will study the effects of environmental variables on the fate of pharmaceuticals in water, sediment, soils and manure.

WP 1.2 will develop a scenario-based exposure assessment system for predicting concentrations of pharmaceuticals in soils, surface waters and sediments.

WP 2.1 will explore to what extent in vitro and low complexity bioassays can be used to provide a first hazard characterisation and mode-of-action classification.

WP 2.2 will study the effects of antibiotics on structure and function of microbial communities with a main focus on the spread of genetically encoded resistance.

WP 2.3 will study the effects of human and veterinary pharmaceuticals on terrestrial invertebrates with a main focus on the effects of parasiticides on dung organisms.

WP 2.4 will focus on long-term effects of low levels of human and veterinary pharmaceuticals on aquatic invertebrates.

WP 2.5 will evaluate how data on pharmaco-kinetics and -dynamics in mammals can be used to target the evaluation of potential sub-lethal effects of human pharmaceuticals in fish.

WP 3 will provide recommendations on the environmental risk assessment procedures for human and veterinary pharmaceuticals that will be made available to regulators, industry and the scientific community.