

COSMOS Partners

About COSMOS



Liverpool John Moores University,
England



Commission of the European
Communities – Directorate General
Joint Research Centre, Ispra, Italy

United States Food and Drug
Administration, Silver Spring, MD, USA



Henkel AG & Co. KGaA,
Düsseldorf, Germany



Merck KGaA, Darmstadt, Germany



Institut National de l'Environnement
Industriel et des Risques,
Verneuil-en-Halatte, France



International Life Sciences Institute
Europe, Brussels, Belgium



Altamira LLC, Columbus, OH, USA



Insilico Biotechnology AG,
Stuttgart, Germany



KNIME.com GmbH, Zurich, Switzerland



Molecular Networks GmbH,
Erlangen, Germany



S-IN Soluzioni Informatiche, Vicenza, Italy



Institute of Biophysics and Biomedical
Engineering, Bulgarian Academy of
Sciences, Sofia, Bulgaria



National Institute of Chemistry,
Ljubljana, Slovenia



University of Bradford, England

The COSMOS Project is a unique collaboration addressing the safety assessment needs of the cosmetics industry, without the use of animals. The main aim of COSMOS is to develop freely available (open access and source) tools and workflows to predict the harmful long-term effects of cosmetic ingredients to humans.

This will be achieved using computational tools such as applying thresholds of toxicological concern (TTC), *in silico* toxicology (grouping, read-across and (Q)SAR - (quantitative) structure-activity relationships), *in vitro* data and physiologically-based pharmacokinetic (PBPK) modelling.

The five year project, which started in January 2011, is funded jointly by the European Commission (through the 7th Framework Programme) and the European trade association for the cosmetic, toiletry and perfumery industry (Colipa). It is coordinated by Liverpool John Moores University, England.

The project brings together expertise from industry, SMEs, academia and regulatory agencies from across Europe as well as the USA.

Email: info@cosmostox.eu

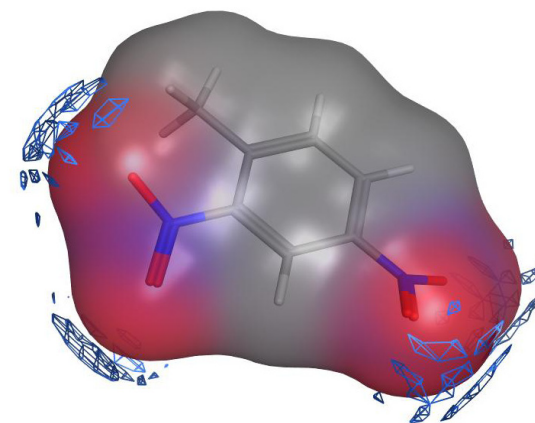
Website: www.cosmostox.eu

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Dr Andrea Richarz – Project manager

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**Integrated *In Silico*
Models for the
Prediction of Human
Repeated Dose
Toxicity of Cosmetics
to Optimise Safety**



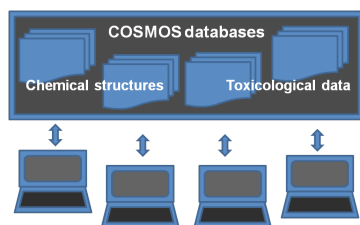
EUROPEAN COMMISSION
Research & Innovation

COSMOS is developing computational tools to predict the effects of long-term exposure to cosmetic ingredients in humans, without the use of animals

New Toxicological Databases

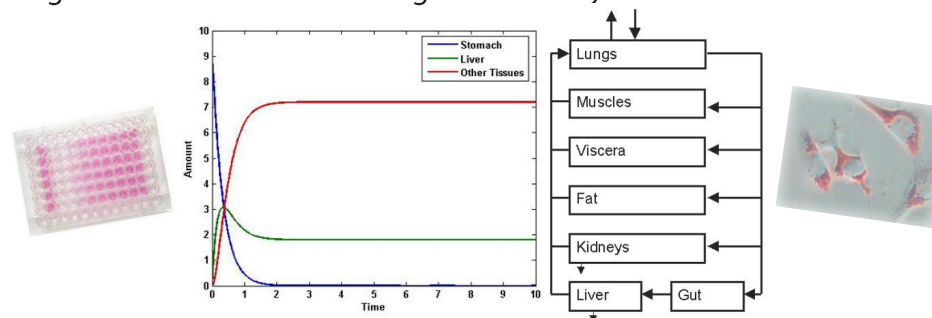
Collation and curation of new sources of toxicological data and information from regulatory submissions and the literature, focussing on chronic toxicity assessment.

Creation of an inventory of known cosmetic ingredients and population with chemical structures.



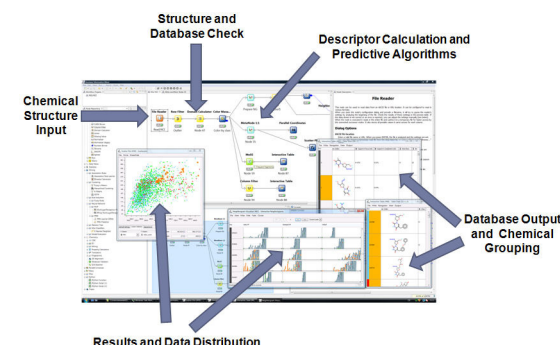
Improving *In Vitro* – *In Vivo* Extrapolations

Establishment of kinetic and physiologically-based pharmacokinetic (PBPK) models, *in vitro*, *in silico* and other relevant data to predict target organ concentrations and long term toxicity to humans.



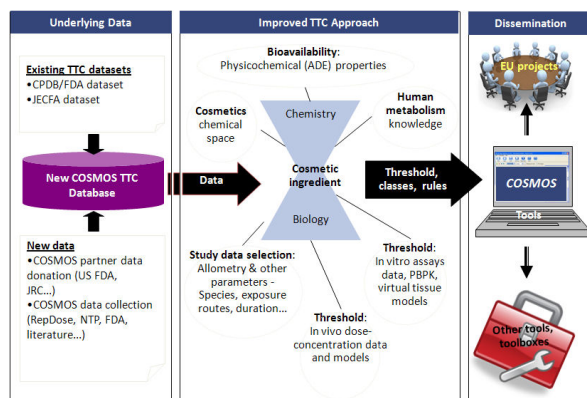
Flexible Computational Workflows for Assessing Toxicity

Integration of open source and open access modelling approaches into adaptable and flexible *in silico* workflows using the KNIME technology.



Thresholds of Toxicological Concern (TTC) for Cosmetics

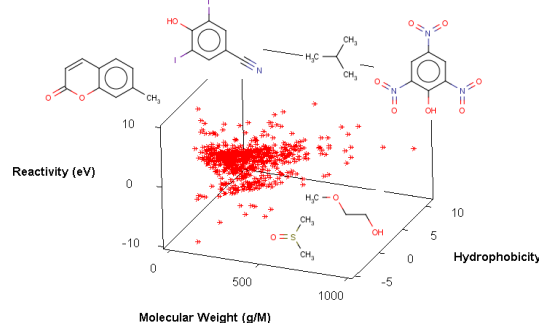
Establishment of thresholds of toxicological concern to ensure safety of chemicals.



COSMOS

In Silico Predictions of Toxicity

Development of innovative strategies based around categories, grouping, read-across and (quantitative) structure-activity relationships ((Q)SARs) to predict toxicity and relate to adverse outcome pathways where possible.



Dissemination

Dissemination of results, integration with other projects of the SEURAT-1 cluster and external initiatives, training.

