

Code Number and Title:

LRI-ECO23: Combining passive sampling and toxicity profiling to assess mixture toxicity of surface waters

Background

The current approach used under the Water Framework Directive (WFD) for identifying a priority list of individual substances of concern is problematic. This is increasingly recognized by EU member states. The WFD is exploring possibilities to apply passive samplers for surface water monitoring programmes. Passive sampling is a rapidly developing technological area with already a broad use in applied environmental sciences and in a broader context than just the WFD. Combining passive sampling with classical bioassays and new in-vitro cell-based screening tests provides new opportunities for toxicity assessment of surface waters, emerging pollutants and effluents, while the technique includes the impact of mixtures.

An effect-based monitoring programme has the potential to replace individual substances based approaches and increase cost efficiency and efficacy. Testing the new techniques in well-studied sampling sites would enable good comparison with traditional water sampling methods and enhance proper understanding of the actual ecological effects resulting from the new technology. A benchmarking including urban wastewater treatment plants (WWTP) will enable comparative assessment of measured toxicity.

Objectives

This project aims to:

1. Develop a cost-effective approach that addresses mixture toxicity.
2. Provide a cost-effective alternative to 'chemical quality' assessment under WFD.
3. Increase industry experience and involvement with the proposed techniques and promote industry involvement in the relevant policy developments.
4. Provide a measure of chemical impact of surface waters by including WWTP effluents as a benchmark.

Scope

Apply passive sampling and combining classical bioassays with rapid in-vitro screening tests.

Deliverables

The final report will comprise an executive summary (2 pages max), a main part (max. 50 pages) and a detailed CV and bibliography. It is expected that the findings will be developed into a peer reviewed publication, following presentation at a suitable scientific conference.

Cost and Timing

Start in January 2014, duration 2 years

Budget in the order of € 300.000

Partnering/Co-funding

Applicants should provide an indication of additional partners and funding opportunities that can be appropriately leveraged as part of their proposal. Partners can include, but are not limited to industry, government/regulatory organizations, research institutes, etc. Statements from potential partners should be included in the proposal package.

***Fit with LRI objectives/Possible regulatory and policy impact involvements/
Dissemination***

Applicants should provide information on the fit of their proposal with LRI objectives and an indication on how and where they could play a role in the regulatory and policy areas. Dissemination plans should also be laid down.

References

If applicable

DEADLINE FOR SUBMISSIONS: 1 September 2013

Please see www.cefic-lri.org for general LRI objectives information, project proposal form and further guidance for grant applications. For further assistance do not hesitate to contact lri@cefic.be.