

New OECD guideline for mollusc reproductive toxicity tests with *Lymnaea stagnalis*

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Introduction & Objectives

As part of the OECD test guidelines programme, this project aims at developing standard protocols for reproduction toxicity tests with the freshwater gastropod *L. stagnalis*. These standard protocols will then be made available for use in the *a priori* environmental risk assessment of chemicals, including endocrine disruptors.



Materials & Methods

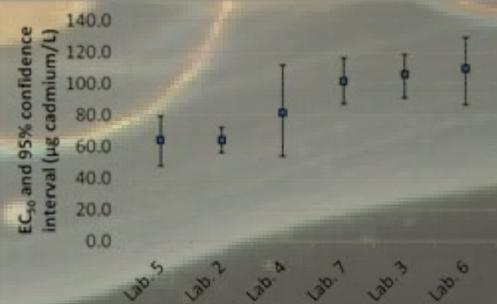
- Snails from the *L. stagnalis* RENILYS® strain, a sensitive and parasite-free strain, were used.
- Seven laboratories were involved in a 56-d ring test.
- Two reference chemicals were tested by each lab: Cadmium (Cd: 32 - 402 µg/L) and Tributyltin (TBT: 5 - 536 ng/L).
- Cumulative individual fecundity was monitored.
- Cadmium concentrations that decrease the reproductive outputs of snails (EC_{50-56d}) by 50% were modelled.



Example of experimental set-up at BASF (1L beakers contain 5 snails, food (lettuce) and toxic medium)

Main Results

- Exposure patterns were consistent among labs.
- Cd and TBT induced a significant decrease of snails reproductive output.
- Consistent concentration-response relations were obtained across labs for both compounds.
- Homogenous, non statistically different EC_{50-56d} values were found for Cd (mean value: 88 ± 21 µg/L).
- Homogenous EC_{50-56d} values were also found for TBT (mean value: 290 ± 115 µg/L), only lab showing a significantly lower EC_{50-56d} value.



Comparison of the EC_{50-56d} values obtained for Cd

Conclusions and further steps

This ring test provided a first validation of the draft standard protocol for testing chemicals in *L. stagnalis*, using Cd and TBT as reference compounds.

The protocol will be optimized (e.g. shortening of test duration, reducing snail number) and further tested for a suite of various (reproductive) toxicants in 2013. A larger scale ring test will be conducted in 2014. A draft test guideline will be submitted to OECD in 2015.