Reducing repeat testing of regulatory vertebrate ecotoxicology studies through a critical assessment of Test Guideline criteria

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Introduction

- Regulatory ecotoxicology studies may be repeated if they do not fully comply with the corresponding OECD Test Guideline (i.e. stated validity criteria and/or other parameters).
- Repeat testing may be required when it is unclear for decision makers whether these data are acceptable, or when there is a perception/ uncertainty regarding whether regulatory bodies or sponsors will accept the study.
- Repetition may be completely justified if overall test performance is affected but in some situations, deviation(s) from a study may not affect its scientific robustness and thus overall utility.
- This project will explore the range of validity criteria and other required/ recommended parameters within vertebrate ecotoxicology OECD Test Guidelines and other frequently used standards.
- It will determine which deviation(s)/magnitude of deviation fundamentally undermines study outcomes and overall utility.
- Anticipated outcomes of the project include development of OECD guidance and/or amendments to specific OECD Test Guidelines, and greater harmonisation with other frequently used guidelines. This project was accepted onto the OECD work plan in 2016.
- **The ultimate aim is to, where feasible, reduce the numbers of scientifically robust vertebrate studies being repeated, thus decreasing the overall number of animals used.**

Project plan

Prioritisation of Test Guidelines:

1. Results of an electronic survey completed by establishments conducting or procuring regulatory ecotoxicology studies, assessing the most frequently undertaken studies, those which are most frequently repeated, and the reasons for their repetition.
2. Extent of experience with Test Guidelines.
3. Grouping of Test Guidelines into those likely to have similar/relevant criteria.

Potential impact of Test Guideline deviations:

1. Conducting literature review/background research to systematically ascertain the historical and scientific context of each criterion.
2. Collection and analysis of study data generated with reported deviation(s).
3. Discussion amongst expert scientists and regulators.

Scientific proposals to adjust criteria.

Further data analysis conducted to support this where necessary.

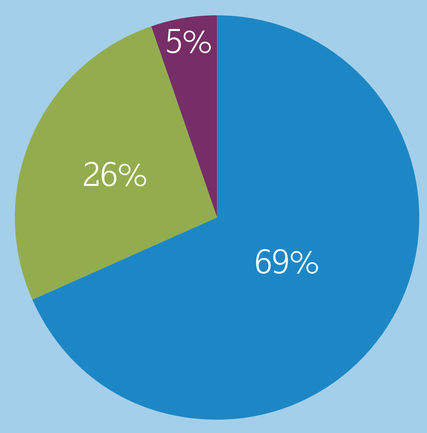
Findings published in peer-reviewed journal.

Suggested Test Guideline revisions submitted to the OECD/other relevant agency (e.g. US EPA) for review.

Process repeated with remaining Test Guidelines identified in the prioritisation process.

Current and next steps

1. The prioritisation survey is currently open for completion.



Eighteen contract research organisations and one applied research organisation have taken part in the survey. The graph shows the proportion of respondents in Europe, North America and Asia. So far no respondents are based in Latin America or Australasia.

Around half of participants were able to provide information on all aspects of the survey:

Question	Number of respondents
For which OECD Test Guidelines did your organisation conduct studies over the past 3 years?	17
Rank which of these studies are conducted most often by your organisation.	16
How many of each study has your organisation conducted over the past 3 years?	11
Which of these studies have been repeated in the past 3 years as a result of deviation(s) from Test Guideline criteria?	9
Please specify the deviations that have led to study repetition for each Test Guideline. If possible indicate which of deviations have been encountered most often.	9

The survey will be closed on 30 December 2016. The responses will then be collated and analysed.

2. The relevant criteria from the prioritised Test Guidelines will be examined.
   - Analysis of the survey results will identify which studies are repeated most often and which Test Guideline deviations triggered repetition.
   - Existing historical information and study data on the relevant criteria from the first set of identified Test Guidelines will be collated during summer 2016 and compared with reported deviations.
   - An expert workshop will be held to discuss these criteria deviations in more detail in early 2017.
   - These discussions and data analysis will be collated into a peer-reviewed publication in 2017, and where appropriate translated into an OECD Guidance Document/request for Test Guideline amendment.

Can you help?

To ensure the success of this project we are looking for:

- Additional establishments conducting or procuring regulatory ecotoxicology studies to participate in the survey, particularly from the under represented regions (only one participant per company, to avoid duplication of responses).
- Experts in the conduct and assessment of vertebrate ecotoxicology studies to participate in working group activities, supporting and guiding the project, and/or to attend the 2017 workshop.
- Volunteers/students to support the literature review aspect of the project.
- Data that companies are able to provide from vertebrate ecotoxicology studies where deviations have occurred.

We appreciate any level of contribution you can make to this project. For further information or to become involved, please contact Dr Natalie Burden at **natalie.burden@nc3rs.org.uk**.

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