National Centre
for the Replacement
Refinement & Reduction
of Animals in Research

How to speed up the publication of your gateway paper

The NC3Rs gateway is designed to highlight the scientific, practical and 3Rs benefits of our Grant holders' work and to encourage others to adopt these new 3Rs approach. As such, writing for the gateway is a little different to writing traditional scientific publications. For example, it is essential that the 3Rs impact of the work is embedded throughout the manuscript and that additional practical details are included to enable others to easily adopt your approach.

These points, and others, will be assessed before the paper can be published. To assist you in speeding up the publication of your paper, here are the key points that are looked for before accepting a new paper for the gateway:

1. Does the manuscript fit the guidelines for the NC3Rs gateway?

Before submitting the draft manuscript to the NC3Rs Office, it is useful to check that the paper meets the criteria set out in the F1000 Article Guidelines. For example, have you included all the sections required for your article type, has all the data discussed in the manuscript text been included in the article, and have all figures and tables been cited and discussed in the article text?

Top tip –Specific guidance is available on writing for the NC3Rs gateway for Methods articles, Reviews, Registered Reports (Stage 1 Study Protocol and Stage 2 Research Report), and Brief Reports.

2. Has the 3Rs relevance and impact of the approach been incorporated throughout the manuscript?

It is essential that the 3Rs relevance and impact of your approach is clearly articulated throughout the manuscript; from the abstract through to the discussion. Where appropriate, the 3Rs relevance of the approach should be supported by realistic metrics.

In addition to describing how your approach is relevant to the 3Rs, it is also important to describe the current alternative *in vitro, in vivo* and/or *in silico* approaches available, their scientific and 3Rs advantages and limitations, and how your approach fits within this landscape. Similarly, the potential end-users of your approach should be clearly defined, and the manuscript should be written in a way that encourages them to adopt the approach. For example, address why it is important for your 3Rs approach to be adopted and describe the scientific and 3Rs benefits of taking up your 3Rs model/tool/technology.

Where appropriate, the 3Rs impact of your approach should also be supported with logical, relevant and realistic metrics. For example, how many animals have been affected/are no longer used locally (e.g. in your laboratory, department or institution) or in the UK/ internationally? Has the severity classification of the procedure or model been affected (e.g. from severe to moderate)?

Top tip – more information on embedding the 3Rs in your paper can be found in the specific guidance on writing Methods articles, Reviews, Registered Reports (Stage 1 Study Protocol and Stage 2 Research Report), and Brief Reports. In addition, it may be useful to read our guidance on how to write effectively about the 3Rs.

3. Could your manuscript be understood by someone outside of your field?

All articles on the NC3Rs gateway should be written to enable other researchers, typically mammalian/vertebrate model users, to adopt your 3Rs approach. As such, it is important to ensure that the information can be easily understood by someone outside of your field of research. Specialist jargon should only be included where necessary and should be clearly explained, abbreviations need to be spelt out and consistently referenced throughout the manuscript. For example, while it is useful to give the alternative names for a material, model, equipment or technique in brackets, the same name should be used to refer to the item throughout the paper.

Top tip: ask someone outside your field to read and comment on where things are unclear in your draft.

4. Is there enough information to replicate the work or adopt the approach?

The materials, methods and, for methods papers, the protocols must be written in enough detail, to enable researchers from a different field of research to replicate or adopt the approach. Things that seem obvious within your field may not be common knowledge to those outside it, for example, why certain timepoints are used with embryonic zebrafish models, why particular cell lines are used, at what temperature cells are kept and where they are kept.

Top tip – it can be useful to read some of the articles published on the gateway to give you an idea of the level of detail required. These can be filtered by subject area, article type and study type.

It is important to ensure that there is enough detail regarding the experimental design and statistical methods. For example, have you stated why these sample sizes were chosen, have you specified whether randomization or blinding/masking have been used and have you included a figure to demonstrate the timeline of the experimental design? To know if you have included the level of detail needed, take a look at the ARRIVE Essential 10, which describes the basic minimum information you need to include in your manuscript. In addition, consider how best to graph the data and whether using standard deviation may be more appropriate than using standard error of the mean.

Please note - All articles reporting *in vivo* experiments on the NC3Rs gateway must conform with the full ARRIVE 2.0 checklist and authors should include a completed ARRIVE checklist with their article. The online version of your article will not have page numbers, so please use section names rather than page numbers when completing the checklist.

Top tip - The ARRIVE guidelines have more detailed information on reporting sample sizes, statistical methods, randomisation and blinding. We also have a blog post on why F1000 have implemented the ARRIVE guidelines in their publishing policies.

Finally, it can be useful for readers if the materials and methods are split into subsections for clarity. In addition, for Methods papers, the protocols section of a should include full details of the materials and methods used and be written in a step wise manner.

Top tip – Ask someone outside of your field to read the manuscript and comment on whether they would be able to replicate the study or adopt the approach. Also, consider including a 'Notes' section to supplement the materials and methods with practical considerations or tips for implementation.

5. Is there consistency in the manuscript?

It is important to check that the experiments described in the methods section match with the results and figures. For Methods papers, it is also important to ensure that the details in the protocol match those in the materials and methods section, for example, have the same cell lines been referenced? As with all publications, the conclusions should be well evidenced and supported within the manuscript.

6. Has a Research highlights box been included?

A Research highlights box is required for all submissions to the gateway. This feature is included to enable authors to showcase the scientific, 3Rs and practical benefits of their approach, and demonstrate its current and potential applications. The Research highlights box should be written in the format of short and concise bullet points to provide a quick, structured overview of your 3Rs approach.

7. Have you appropriately acknowledged the research funders?

Ensure that all research funders who have supported the work are appropriately acknowledged, including co-funders. Submission to the NC3Rs gateway is solely open to NC3Rs-funded researchers and as such the relevant NC3Rs grants must be acknowledged.