

UK DRI Animal Research Guidance

The UK DRI is committed to **reproducible, relevant and translatable research**. When using laboratory animals, a number of factors need to be considered to ensure that we generate robust and generalisable data that has high translational value. The animal models programme **provides practical support** to assist UK DRI researchers to undertake high quality research using model organisms and facilitate the highest 3R standards. This guidance provides a reference framework for best practise.

Planning

- Consider how the **model organism differs** (genetically and physiologically) **from humans** in relation to your research question.
- How will you incorporate **male and female** animals in your experimental design? Any single-sex study must be scientifically justified (for example the study the effects of pregnancy).
- How will any planned **movement of animals between facilities** and the **pathogen-status of the facility** affect your work?
- Define and check the **genetic background, integration site of any transgene etc.**, and consider the control strategy and whether mixed backgrounds are truly reproducible.
- Can you **mitigate any limitations or welfare impacts** of the model, by using alternative approaches or models?

Experimental design

- **Define a clear hypothesis with primary and secondary outcome measures.**
- Make a **housing plan**; consider the likelihood of phenocopying (particularly of behavioural changes), harmonisation of the microbiome, if randomisation is required and which interventions/genetic manipulations may be performed in cohoused subjects. (Single housing of mice needs to be strongly justified and used only if essential). Use littermate controls as far as practical, within colony controls may be an appropriate alternative for highly complex crosses of genetically-modified models.
- Make a **plan for statistical analysis and blinding**, and under what circumstance experimental subjects will be excluded from study. **Independent experimental unit** should be defined (individual animal or a cage; this is usually not separate cells or slices isolated from one individual). **Collect pilot data** for primary outcomes to estimate standard deviation and effect size **for power calculations to determine the required group size.**

Experimental procedures

- **Undertake 3R and harm-benefit** assessments of the experimental procedures including;
 - a definition of **humane-endpoints**, and identification of possible refinements
 - a **plan for tissue sampling and sharing** with other colleagues.
- **Communicate** this plan to all **PILs and NACWOs**, discuss **competency** in your team and what (e.g. training /further resources) would **improve efficiency, quality and data management** of the study.
- Collect data on **how, when, where and why** interventions, data acquisition and sampling events occur (see [ARRIVE 2.0](#) for further guidance on this).

Founding funders:



Medical
Research
Council



Reporting and sharing

- New mouse models should be **deposited at the MRC Harwell EMMA** node at the earliest opportunity; a moratorium on distribution can be requested until the date of first publication.
- **Full details of the experiment should be reported (as defined in [ARRIVE 2.0, Essential 10](#))** including study design, genetics (use MGI nomenclature and report background), procedural and husbandry details. Data should be shown for experimental units not group means, data for covariates should be included in supplementary figures/by Figshare. Statistical methods, randomisation/blinding systems and the total number of animals per sex used in the study should be stated.

Further resources

- [Reporting animal research: Explanation and elaboration for the ARRIVE guidelines 2.0](#)
- [PREPARE: guidelines for planning animal research and testing](#)

Version	Date	Updated by	Approved by	Notes
1.0	18.06.2020	Aoife Kiely	Board / Committee	
2.0	29.09.2020	Aoife Kiely	Board / Committee	
3.0	22.02.2023	Frances Wiseman	Sam Jackson	Updated policy in line with MRC guidance

Founding funders:



Medical
Research
Council

