



The ARRIVE guidelines 2.0: author checklist

The ARRIVE Essential 10

These items are the basic minimum to include in a manuscript. Without this information, readers and reviewers cannot assess the reliability of the findings.

Item	Recommendation	Section/line number, or reason for not reporting
Study design	1 For each experiment, provide brief details of study design including: <ol style="list-style-type: none"> The groups being compared, including control groups. If no control group has been used, the rationale should be stated. The experimental unit (e.g. a single animal, litter, or cage of animals). 	In the part of "Materials and methods", line 70-191. In the part of "Materials and methods", line 70-191.
Sample size	2 <ol style="list-style-type: none"> Specify the exact number of experimental units allocated to each group, and the total number in each experiment. Also indicate the total number of animals used. Explain how the sample size was decided. Provide details of any <i>a priori</i> sample size calculation, if done. 	In the part of "Materials and methods", Line 78-95. The sample size was decided referred to previous studies.
Inclusion and exclusion criteria	3 <ol style="list-style-type: none"> Describe any criteria used for including and excluding animals (or experimental units) during the experiment, and data points during the analysis. Specify if these criteria were established <i>a priori</i>. If no criteria were set, state this explicitly. For each experimental group, report any animals, experimental units or data points not included in the analysis and explain why. If there were no exclusions, state so. For each analysis, report the exact value of <i>n</i> in each experimental group. 	In the part of "Materials and methods", Line 78-95. None. In the part of "Materials and methods", Line 78-95.
Randomisation	4 <ol style="list-style-type: none"> State whether randomisation was used to allocate experimental units to control and treatment groups. If done, provide the method used to generate the randomisation sequence. Describe the strategy used to minimise potential confounders such as the order of treatments and measurements, or animal/cage location. If confounders were not controlled, state this explicitly. 	The mice were randomly divided into different groups The order of treatments.
Blinding	5 Describe who was aware of the group allocation at the different stages of the experiment (during the allocation, the conduct of the experiment, the outcome assessment, and the data analysis).	The first author and co-first author were aware of the group allocation.
Outcome measures	6 <ol style="list-style-type: none"> Clearly define all outcome measures assessed (e.g. cell death, molecular markers, or behavioural changes). For hypothesis-testing studies, specify the primary outcome measure, i.e. the outcome measure that was used to determine the sample size. 	In the part of "Materials and methods", line 70-190. In the part of "Materials and methods", line 70-191.
Statistical methods	7 <ol style="list-style-type: none"> Provide details of the statistical methods used for each analysis, including software used. Describe any methods used to assess whether the data met the assumptions of the statistical approach, and what was done if the assumptions were not met. 	In the part of "Materials and methods", line 187-191. The data meet the assumptions of the statistical approach in this study.
Experimental animals	8 <ol style="list-style-type: none"> Provide species-appropriate details of the animals used, including species, strain and substrain, sex, age or developmental stage, and, if relevant, weight. Provide further relevant information on the provenance of animals, health/immune status, genetic modification status, genotype, and any previous procedures. 	In the part of "Materials and methods", line 70-191. In the part of "Materials and methods", line 70-191.
Experimental procedures	9 For each experimental group, including controls, describe the procedures in enough detail to allow others to replicate them, including: <ol style="list-style-type: none"> What was done, how it was done and what was used. When and how often. Where (including detail of any acclimatisation periods). Why (provide rationale for procedures). 	In the part of "Materials and methods", line 70-191. In the part of "Materials and methods", line 70-191. In the part of "Materials and methods", line 70-191. In the part of "Materials and methods", line 70-191.
Results	10 For each experiment conducted, including independent replications, report: <ol style="list-style-type: none"> Summary/descriptive statistics for each experimental group, with a measure of variability where applicable (e.g. mean and SD, or median and range). If applicable, the effect size with a confidence interval. 	In the part of "Materials and methods", line 187-191. In the part of "Materials and methods", line 187-191.

The Recommended Set

These items complement the Essential 10 and add important context to the study. Reporting the items in both sets represents best practice.

Item	Recommendation	Section/line number, or reason for not reporting
Abstract	11 Provide an accurate summary of the research objectives, animal species, strain and sex, key methods, principal findings, and study conclusions.	In the part of "Abstract", Line 1-27.
Background	12 a. Include sufficient scientific background to understand the rationale and context for the study, and explain the experimental approach. b. Explain how the animal species and model used address the scientific objectives and, where appropriate, the relevance to human biology.	In the part of "Introduction", Line 28-69. In the part of "Introduction", Line 28-69.
Objectives	13 Clearly describe the research question, research objectives and, where appropriate, specific hypotheses being tested.	In the part of "Introduction", Line 28-69.
Ethical statement	14 Provide the name of the ethical review committee or equivalent that has approved the use of animals in this study, and any relevant licence or protocol numbers (if applicable). If ethical approval was not sought or granted, provide a justification.	In the part of "Materials and methods", Line 78-95, and title page.
Housing and husbandry	15 Provide details of housing and husbandry conditions, including any environmental enrichment.	In the part of "Materials and methods", line 78-8
Animal care and monitoring	16 a. Describe any interventions or steps taken in the experimental protocols to reduce pain, suffering and distress. b. Report any expected or unexpected adverse events. c. Describe the humane endpoints established for the study, the signs that were monitored and the frequency of monitoring. If the study did not have humane endpoints, state this.	In the part of "Materials and methods", Line 78-95. None. None.
Interpretation/ scientific implications	17 a. Interpret the results, taking into account the study objectives and hypotheses, current theory and other relevant studies in the literature. b. Comment on the study limitations including potential sources of bias, limitations of the animal model, and imprecision associated with the results.	In the part of "Discussion" and "Conclusion", Line 277-341. In the part of "Discussion" and "Conclusion", Line 277-341.
Generalisability/ translation	18 Comment on whether, and how, the findings of this study are likely to generalise to other species or experimental conditions, including any relevance to human biology (where appropriate).	Not appropriate to other species.
Protocol registration	19 Provide a statement indicating whether a protocol (including the research question, key design features, and analysis plan) was prepared before the study, and if and where this protocol was registered.	A protocol was prepared before the study without registration.
Data access	20 Provide a statement describing if and where study data are available.	Footnote, line 478-479
Declaration of interests	21 a. Declare any potential conflicts of interest, including financial and non-financial. If none exist, this should be stated. b. List all funding sources (including grant identifier) and the role of the funder(s) in the design, analysis and reporting of the study.	N/A N/A

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*As the checklist was provided upon initial submission, the line number reported may be changed due to copy editing and may not be referable in the published version. In this case, the section may be used as an alternative reference.