



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: a. The groups being compared, including control groups. If no control group has been used, the rationale should be stated. b. The experimental unit (e.g. a single animal, litter, or cage of animals).	Section 2.1.2 (five groups: Sham, IRI, itaconic acid, citraconic acid, mesaconic acid) Single rat; Section 2.1.2
Sample size	2 a. 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. b. Explain how the sample size was decided. Provide details of any <i>a priori</i> sample size calculation, if done.	Sec. 2.1.2: total n=61 (10/12/13/13/13) Not reported; no <i>a priori</i> sample-size calculation stated.
Inclusion and exclusion criteria	3 a. 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. b. 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. c. For each analysis, report the exact value of <i>n</i> in each experimental group.	No inclusion/exclusion criteria reported. Not reported whether any animals/data were excluded. Figs. 1-5: n=10-13; ASC/DHE n=6 fields/group; TUNEL n=9 fields/group.
Randomisation	4 a. 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. b. 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.	Sec. 2.1.2: rats randomly divided; randomisation method not reported. No confounder-control strategy reported.
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).	Blinding at allocation, experiment, outcome assessment, and analysis not reported.
Outcome measures	6 a. Clearly define all outcome measures assessed (e.g. cell death, molecular markers, or behavioural changes). b. For hypothesis-testing studies, specify the primary outcome measure, i.e. the outcome measure that was used to determine the sample size.	Secs. 2.1.4-2.1.10: CEUS; Cr/Urea/Cys-C; HE; ELISA markers; DHE/ROS; ASC; TUNEL. Primary outcome not specified; no sample-size calculation reported.
Statistical methods	7 a. Provide details of the statistical methods used for each analysis, including software used. b. 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.	Sec. 2.2; figure captions: SPSS 27, one-way ANOVA and Kruskal-Wallis. Sec. 2.2: Shapiro-Wilk normality test; Kruskal-Wallis for non-parametric data.
Experimental animals	8 a. Provide species-appropriate details of the animals used, including species, strain and substrain, sex, age or developmental stage, and, if relevant, weight. b. Provide further relevant information on the provenance of animals, health/immune status, genetic modification status, genotype, and any previous procedures.	Sec. 2.1.2: male Sprague-Dawley rats, 8-10 weeks, 250 +/- 50 g. Sec. 2.1.2: healthy; Animal Experimental Center, Southwest Medical University; license SCXK(Sichuan)2023-0017. Other status not reported.
Experimental procedures	9 For each experimental group, including controls, describe the procedures in enough detail to allow others to replicate them, including: a. What was done, how it was done and what was used. b. When and how often. c. Where (including detail of any acclimatisation periods). d. Why (provide rationale for procedures).	Sections 2.1.2-2.1.10. Secs. 2.1.2-2.1.4: 3-day pretreatment; 45-min ischemia; 24-h reperfusion/CEUS. Sec. 2.1.2: acclimatisation period not reported. Introduction gives rationale for renal IRI model/CEUS; procedural rationale otherwise not stated.
Results	10 For each experiment conducted, including independent replications, report: a. Summary/descriptive statistics for each experimental group, with a measure of variability where applicable (e.g. mean and SD, or median and range). b. If applicable, the effect size with a confidence interval.	Sec. 2.2 and Results/Figs. 1-5: mean +/- SD; n reported per analysis. Not reported: effect sizes and confidence intervals are not provided.