NOTE: Please save this file locally before filling in the table, DO NOT work on the file within your internet browser as changes will not be saved. Adobe Acrobat Reader (available free here) is recommended for completion.

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).	Lines 397-399 of the text. A single animal.
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 *a priori* sample size calculation, if done.	Lines 397 and 372 of the text. Translated with DeepL.com (free version) ③ Statistical Requirements: Sample size determination was informed by statistical considerations, including significance level (α), power (1-β), and effect
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 *a priori.* 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 *n* in each experimental group.	3) Deviation from experimental design: Mice were excluded if they deviated from the experimental design (e.g., unexpected death or unusable tissue samples). Translated with DeepL.com (free version) No exclusions, Clearly indicated on the figure.
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.	Lines 396-397 of the text. Measurements were conducted in random order for each group, and animals were housed in randomly positioned cages under standardized conditions (temperature, humidity, photoperiod), ensuring experimental consistency.
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).	Tianci Zhang and Qianying Wang conducted the experiment and allocation. Linran Gao drafted and revised the manuscript. Jiahui Zheng, Xinyu Wang, and Meng Jiang assessed outcomes and analyzed data. Jinxia Ai reviewed the manuscript and supervised the experiment.
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.	Measurements were conducted in random order for each group, and animals were housed in randomly positioned cages under standardized conditions (temperature, humidity, photoperiod), ensuring experimental consistency. Lines 164-170 of the text.
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.	Lines 493-497 of the text. 6.Data Transformation Non-Normal Data: Logit transformation of β-values (M = log2(β / (1 - β))) to meet linear model assumptions. Heteroscedastic Data: Log2 standardization of methylation signal intensities.
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.	Lines 371-378 of this text. Lines 371-372 of this text.
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).	Lines 393-412 of this text. Figure 12 of the text. Lines 374-378 of this text. atment for UC. 3. 14-day treatment period: Sufficient to monitor the therapeutic efficacy of POA on UC (supported by literature).
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.	Lines 179-222 of this text.

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.	Lines 11-28 of this text.
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.	Lines 32-41 of this text. Lines 42-51 of this text.
Objectives	13	Clearly describe the research question, research objectives and, where appropriate, specific hypotheses being tested.	Lines 48-51 of this text.
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.	Lines 376-378 of this text.
Housing and husbandry	15	Provide details of housing and husbandry conditions, including any environmental enrichment.	Lines 374-376 of this text.
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.	Lines 426-427 of this text. Male rats engage in fighting behavior. Detection of inflammatory factor levels in mouse eye blood and colon tissue-related protein content in mice.
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.	Lines 284-289 of this text. Lines 290-299 of this text.
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).	sults may hold under comparable environmental or treatment parameters (e.g., dose ranges, exposure durations). However, divergent outcomes could arise in systems with distinct baseline stress levels, nutritional status, or microbiome composition. For example, dietary variations or co-morbidities in alternative models might modulate the observed effects.
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.	All procedures were approved by the Institutional Animal Care and Use Committee of Beihua University (Protocol No. 20240703).
Data access	20	Provide a statement describing if and where study data are available.	Lines 523-529 of this text.
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.	Line 531 of this text. Lines 518-519 of this text.