Editorial Policy Checklist

This form is used to ensure compliance with Nature Research editorial policies related to research ethics and reproducibility. For further information, please see our editorial policies site. All relevant questions on the form must be answered.

Competing interests

Policy information about competing interests

Competing interests declaration

In the interest of transparency and to help readers form their own judgements of potential bias, Nature Research journals require authors to declare any competing financial and/or non-financial interest in relation to the work described in the submitted manuscript.

☒ We declare that none of the authors have competing financial or non-financial interests as defined by Nature Research.

☐ We declare that one or more of the authors have a competing interest as defined by Nature Research.

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Policy information about authorship

Prior to submission all listed authors must agree to all manuscript contents, the author list and its order and the author contribution statements. Any changes to the author list after submission must be approved by all authors.

☒ We have read the Nature Research Authorship Policy and confirm that this manuscript complies.

Data availability

Policy information about availability of data

Data availability statement

All manuscripts must include a data availability statement. This statement should provide the following information, where applicable:

- Accession codes, unique identifiers, or web links for publicly available datasets
- A list of figures that have associated raw data
- A description of any restrictions on data availability

☒ We have provided a full data availability statement in the manuscript.

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Confirm that all relevant data are deposited into a public repository and that accession codes are provided.

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Policy information about availability of computer code

Code availability statement

For all studies using custom code or mathematical algorithm that is deemed central to the conclusions, the manuscript must include a statement under the heading "Code availability" describing how readers can access the code, including any access restrictions. Code availability statements should be provided as a separate section after the data availability statement but before the References.

☒ We have provided a full code availability statement in the manuscript
Data presentation
For all data presented in a plot, chart or other visual representation confirm that:

n/a  Confirmed
☐  Individual data points are shown when possible, and always for \( n \leq 10 \)
☐  The format shows data distribution clearly (e.g. dot plots, box-and-whisker plots)
☐  Box-plot elements are defined (e.g. center line, median; box limits, upper and lower quartiles; whiskers, 1.5x interquartile range; points, outliers)
☐  Clearly defined error bars are present and what they represent (SD, SE, CI) is noted

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Policy information about Image integrity
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Where blots and gels are presented, please take particular care to ensure that lanes have not been spliced together, that loading controls are run on the same blot, and that unprocessed scans match the corresponding figures.

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<thead>
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<td>☐  Macromolecular structural data</td>
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<td>☐  Human research participants</td>
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I certify that all the above information is complete and correct.

Typed signature  Haiping Hao  Date  Sep 20, 2022