

Editorial Policy Checklist

This form is used to ensure compliance with Nature Portfolio 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

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

Competing interests declaration

- ☐ We declare that none of the authors have competing financial or non-financial interests as defined by Nature Portfolio.
- ☒ We declare that one or more of the authors have a competing interest as defined by Nature Portfolio.

MCT owns the company IAP-GmbH Intelligent Analytics Projects, and IAP collaborates directly with Beckman Coulter. NW is employed by Beckman Coulter. QS is an accepted PhD student at Philipps-University and works at IAP-GmbH. JH, CB, SK, AN, and AU declare no conflicts of interest.

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All authors are encouraged to provide an "Inclusion & Ethics" statement where relevant.

- ☒ We have provided an "Inclusion & Ethics" statement.

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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 description of any restrictions on data availability
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- ☒ 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.

- ☒ All relevant accession codes are provided ☐ Accession codes will be available before publication ☐ No data with mandated deposition

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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.

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Data presentation

For all data presented in a plot, chart or other visual representation confirm that:

n/a Confirmed

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- ☐ ☒ 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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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.

Additional policy considerations

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Does not apply

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- ☒ ☐ Macromolecular structural data
- ☒ ☐ Unique biological materials
- ☒ ☐ Research animals and/or animal-derived materials that require ethical approval
- ☒ ☐ Human embryos, gametes and/or stem cells
- ☐ ☒ Human research participants
- ☒ ☐ Clinical data
- ☒ ☐ Archaeological, geological, and palaeontological materials

Human research participants

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Ethical compliance

- ☒ We have complied with all relevant ethical regulations and include a statement affirming this in the manuscript.

Ethics committee

Confirm that the manuscript states the name(s) of the board and/or institution that:

- ☒ Approved the study protocol -OR- ☐ Provided guidelines for study procedures (if protocol approval is not required)

Informed consent

- ☐ We have obtained informed consent from all participants and this is noted in the manuscript.

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For publication of identifiable images of research participants, confirm that consent to publish was obtained and is noted in the Methods.

Authors must ensure that consent meets the conditions set out in the [Nature Portfolio participant release form](#).

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Typed signature Michael Thrun

Date 29.03.24

