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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

Policy information about competing interests

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☒ We have read the Nature Portfolio 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 description of any restrictions on data availability
- For clinical datasets or third party data, please ensure that the statement adheres to our policy

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

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Policy information about availability of computer code

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

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☒ Individual data points are shown when possible, and always for n ≤ 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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<table>
<thead>
<tr>
<th>Does not apply</th>
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<td>☒ Macromolecular structural data</td>
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<td>☒ Unique biological materials</td>
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Macromolecular structural data
Policy information about special considerations for specific types of data

Validation report
☒ We have provided an official validation report from wwPDB for all macromolecular structures studied.

Research animals
Policy information about studies involving animals: ARRIVE guidelines recommended for reporting animal research

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

Ethics committee
☐ We have disclosed the name(s) of the board and institution that approved the study protocol in the manuscript.

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Typed signature: James G Christensen                     Date: 1-10-2022