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Competing interests

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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.
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All authors are employees of Alnylam Pharmaceuticals with salary and stock options.

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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.

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- 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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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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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 $n \leq 10$
- ☐ ☒ 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)
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☒	☐ Human research participants
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Research animals

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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

- ☒ We have disclosed the name(s) of the board and institution that approved the study protocol in the manuscript.

I certify that all the above information is complete and correct.

Typed signature Vasant Jadhav

Date Oct 7, 2021

