Manuscripts submitted for publication must adhere to these formatting requirements. For initial submissions, *Nature Communications* is flexible with regard to the format; within reason, style and length will not influence consideration of a manuscript.

ARTICLE SECTIONS

The text must be split into the sections given below. No other section headings are permitted.

Title

Authors

Abstract

Introduction

Results

Discussion (optional)

Methods (optional)

Data Availability

Code Availability (if applicable)

References

Acknowledgements (optional)

Author Contributions

Competing Interests

DISPLAY ITEMS

Figures

Tables

SUPPLEMENTARY ITEMS

Supplementary Information

Supplementary Files

OTHER

General formatting

Maths formatting

Subject-specific formatting

FORMATTING INSTRUCTIONS

TITLE

15 words or fewer.

No punctuation or puns.

AUTHORS

List affiliations in the same numerical order as their first appearance in the author list. For each author, present affiliations in numerical order, with affiliation 1 associated with the first author.

Affiliations must refer to only one address/department.

If applicable, present addresses should be supplied after the affiliations and clearly identified as such.

Corresponding author(s) should be identified with an asterisk.

Supply one email address for each corresponding author, which must appear in the same order as in the author list.

Equally contributing or jointly supervising authors must be clearly identified and indicated with these statements.

We allow only one of each statement. Acknowledge the equal contributions or joint supervision of additional authors in the Author Contributions section.

Do not include job titles in the affiliations or author list.

Mandatory guidelines on consortia are [here](#).

ABSTRACT

150 words or fewer.

Begin with the background and rationale for the work.

The final sentence must begin with a phrase like "In this work" or "Here, we show", and contain a brief summary of the major results and conclusions of the current work, written in the present tense.

Do not include references, acronyms or abbreviations.

We do not allow a graphical abstract.

INTRODUCTION

No subheadings.

Begin with the background and rationale for the work.

The final paragraph must begin with a phrase like "In this work" or "Here, we show", and contain a brief summary of the major results and conclusions of the current work, written in the present tense.

The results of the current study must only be discussed in this final paragraph.

RESULTS

Divide into subheaded sections.

Subheadings should be no longer than 60 characters.

Subheadings must not be numbered.

Do not use secondary subheadings.

EXAMPLES

TITLE

Serial protein crystallography in an electron microscope

Tropical cyclone rainbands can trigger meteotsunamis

AUTHORS

Correct:

Author A[1,2,3], Author B[2,4,5]*

[1] Affiliation 1, [2] Affiliation 2...

Incorrect:

Author A[2,3], Author B[1,4,2,5]*

[1] Affiliation 1, [2] Affiliation 2...

For examples, see:

[Article 1](#)

[Article 2](#)

[Article 3](#)

These authors contributed equally: Author A, Author B

These authors jointly supervised this work: Author C, Author D

ABSTRACT

"Snowflakes form under certain conditions..."

"Here, we report..."

INTRODUCTION

"Snowflakes, or single ice crystals, nucleate around..."

"Previous work determined that..."

"In this work, we analyse..."

RESULTS

Subheading

Text

Subheading

Text

DISCUSSION (optional)

No subheadings.

METHODS (optional)

Divide into subheaded sections.

Subheadings should be no longer than 60 characters.

Provide sufficient information such that the experiments can be reproduced without reference to other papers.

DATA AVAILABILITY

All manuscripts must include a Data Availability statement.

If applicable, add a reference to the Source Data file.

CODE AVAILABILITY (if applicable)

All studies using custom code or mathematical algorithms that are central to the conclusions must include a Code Availability statement.

The Data Availability and Code Availability statements must be in separate sections.

REFERENCES

Use the following styles:

Articles: Author list. Title of paper in sentence case. *Name of journal* **volume number**, initial-final page numbers or article number (year).

Preprints: Author list. Title of paper in sentence case. Preprint at [DOI or URL] (year). *[if possible, update reference with details of the published paper]*

Research datasets with assigned DOI: Author list. Title. Repository name, identifier [DOI expressed as URL] (year).

Books: Author list. *Title With All Words Capitalized* (publisher, city of publication, year).

Only published or accepted articles and preprints can be cited; no manuscripts that are "submitted" or "under review".

References to websites are permitted only if they are in common use or curated. Do not reference personal websites.

Do not use footnotes or endnotes.

Each reference must refer to only one work.

References must not be duplicated in the list.

References should be limited to 70.

References must be numbered in the order they are cited in the text first, then in the figure legends, table legends and boxes.

In-text citations must be followed by their corresponding reference number.

If using LaTeX, use numerical references only for citations, and include the references within the manuscript file itself.

If using BibTeX, copy the reference list from the .bbl file, paste it into the main manuscript .tex file, and delete the associated \bibliography and \bibliographystyle commands.

ACKNOWLEDGEMENTS (optional)

Include funding sources.

Must be brief and must not include thanks to Editors or referees, effusive comments or dedications.

DISCUSSION (optional)

Text

METHODS (optional)

Subheading

Text

Subheading

Text

DATA AVAILABILITY

For acceptable examples, see: Data availability policy

"Source data are provided with this paper."

CODE AVAILABILITY (if applicable)

For details of the policy, see: Code availability policy

REFERENCES

1. Eigler, D. M. & Schweizer, E. K. Positioning single atoms with a scanning tunnelling microscope. *Nature* **344**, 524-526 (1990).

2. Cheng, F., Kovács, I. A. & Barabási, A.-L. Network-based prediction of drug combinations. *Nat. Commun.* **10**, 1197 (2019). *[for references with article numbers]*

3. Babichev, S. A., Ries, J. & Lvovsky, A. I. Quantum scissors: teleportation of single-mode optical states by means of a nonlocal single photon. Preprint at http://arXiv.org/abs/quant-ph/0208066 (2002).

4. Hao, Z., AghaKouchak, A., Nakhjiri, N. & Farahmand, A. Global Integrated Drought Monitoring and Prediction System (GIDMaPS) data sets. figshare http://dx.doi.org/10.6084/m9.figshare.853801 (2014).

5. Jones, R. A. L. *Soft Machines: Nanotechnology and Life* Ch. 3 (Oxford Univ. Press, Oxford, 2004).

"Brown et al. show[1]"

ACKNOWLEDGEMENTS (optional)

AUTHOR CONTRIBUTIONS

Include a statement of responsibility that specifies the contribution of every author.

Authors should be denoted by initials. If multiple authors share the same initials, distinguish between them by using their family names.

COMPETING INTERESTS

Must refer to all authors.

Nature Research policy requires declaration of competing financial and non-financial interests.

FIGURES

Title and legend. Each figure must have a short, standalone title, followed by a full legend (up to 350 words) that refers to all panels in the figure.

Include enough information to understand the figure without referring to the text.

Style. Panels should be labeled using the a, b, c, convention. Do not divide into subpanels beyond a, b, c. Avoid use of "top", "bottom", "left", "right", etc.

Formatting of mathematical symbols, including in axes, must be consistent with the text (see page 6 for guidance).

Define acronyms and abbreviations in each figure legend.

The meaning of symbols or colours must be defined. Do not use symbols in your legend; instead write them in words (blue circle, red dashed line, etc.).

Figures that use red and green simultaneously should be updated with alternative colour schemes. Rainbow gradients can be problematic; use alternative gradients if possible (see The misuse of colour in science communication).

Third-party content. The use or adaptation of previously published images is strongly discouraged.

If this is unavoidable, request the necessary rights documentation to re-use such material from the relevant copyright holders.

This also applies to any peer review content. If you wish to opt into publication of the peer review file, we may allow redaction of previously published images.

We will not publish manuscripts which use the "Lena" image, a crop from the November 1972 Playboy centrefold, as a test image. A list of possible alternatives is available here; check the copyright before using any of these images.

Submission details. Figures must be provided as individual vector files, and all text must be editable.

Each figure should be no larger than a single A4 page (260 x 179 mm).

Chemical structures should be drawn using the *Nature Chemistry* ChemDraw template or its settings.

AUTHOR CONTRIBUTIONS

"B. K. performed the experimental studies. R. A. M. carried out the analysis. R. Smith performed the computational studies. R. Small supervised the work."

For details of the policy, see: Author contribution statements

COMPETING INTERESTS

"The authors declare no competing interests."

"B. K. is an employee at X. The remaining authors declare no competing interests."

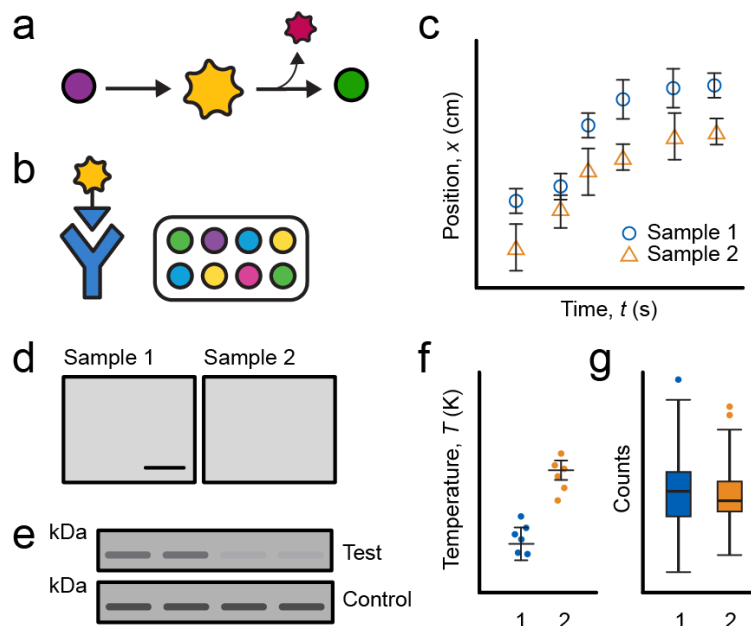For details of the policy, see: Competing interests policy

FIGURES

Figure 1. **Brief title describing figure. a** Description of panel. **b** Description of panel. **c** Error bars represent standard deviation, n = X independent replicates. **d** Micrographs of Sample 1 and Sample 2, images representative of X experiments. Scale bar = 100 nm. **e** Western blot analysis of XXX. Uncropped blots in Source Data. **f** Error bars represent standard deviation, n = X biologically independent replicates. **g** Box plots indicate median (middle line), 25th, 75th percentile (box) and 5th and 95th percentile (whiskers) as well as outliers (single points).

For detailed guidance on figure preparation, see:

Artwork guidelines

For details, see: Chemical Structures Guide

TABLES

Title. Each table must have a short title that summarises the whole table.

Style. Tables must be black and white, and data must be free from bold/italic formatting unless this has been clearly defined in the footnote.

Tables must not include dividing lines to separate text within the same cell; text should be split into separate cells in these instances.

A table must have the same length and width throughout.

Tables must not be subdivided (e.g. "Table 1a", "Table 1b").

Submission details. Tables must be provided in an editable format and prepared using the table menu in Word or the table environment in LaTeX.

SUPPLEMENTARY INFORMATION

Submit as one PDF document. Begin with the article title.

We do not edit Supplementary Information files. The file provided with the final manuscript will be published.

Remove track changes and highlights.

The only items permitted in the Supplementary Information are those given here.

Format Supplementary Figures and Tables as described on pages 4-5.

Supplementary References must be self-contained and numbered from 1, and listed at the end of the Supplementary Information file.

Format Supplementary References as described on page 3.

Supplementary items should be cited with these styles.

Replace general citations to the Supplementary Information ("see Supplementary Information") with specific citations ("Supplementary Fig. 1", "Supplementary Discussion").

SUPPLEMENTARY FILES

Only the files given here may be submitted separately from the Supplementary Information.

Legends for each file must be provided in your cover letter, not in the Supplementary Information file.

Label and cite each file as Supplementary Movie / Audio / Data / Software 1, etc.

Large datasets exceeding an A4 page size should be supplied as Supplementary Data files in an extractable format, rather than as Supplementary Tables.

Each Supplementary file must be cited in the main text.

TABLES

Correct format:

Table subgroup 1	
Header 1	…
x	x
x	x
x	x
Table subgroup 2	
Header 2	…
x	x

Incorrect format:

Table subgroup 1		
Header 1	…	…
x	x	x
x	x	x
x	x	x
Table subgroup 2		
Header 2	…	
x	x	

SUPPLEMENTARY INFORMATION

Allowed items:

Supplementary Figures

Supplementary Tables

Supplementary Methods

Supplementary Notes

Supplementary Discussion

Supplementary References

Correct formats:

Supplementary Fig. 1

Supplementary Table 1

Supplementary Equation (1)

Incorrect formats:

Fig. S1

Supplemental Table 1

See Supplementary Information

SUPPLEMENTARY FILES

Allowed files:

Supplementary Movie

Supplementary Audio

Supplementary Data

Supplementary Software

GENERAL FORMATTING

The main text (not including figure legends or Methods) should be no more than 6,000 words.

We allow up to 10 display items (Figures and Tables).

Avoid phrases like "novel", "new", "for the first time", and "unprecedented" throughout the manuscript.

"We report a mechanism", not "We report a novel mechanism"

Avoid exaggerated language like "extremely", "outstanding", or "amazingly" throughout the manuscript.

"We observe high yield", not "We observe extremely high yield"

Do not use italics, bold, underlining or speech marks unless required for technical terms.

Define acronyms and abbreviations the first time they appear.

"Transmission electron microscopy (TEM) is useful for..."

Figures and tables in the main manuscript must be cited in the order they appear in the text, figure legends, table legends and boxes.

If a figure or table needs to be referred to out of order, use the text "see below" instead of a citation.

If there are references to personal communications, the person cited must send an email to the handling editor giving permission to publish this statement.

Personal communications must not appear as references; they must be referenced in line in the text.

(J. Smith, personal communication 2019)

We do not allow statements based on data that are not present in the manuscript or not published.

MATHS FORMATTING

Supply equations in editable format, not as images.

Scalar variables (x, V, χ) must be italic, whereas multi-letter variables and functions (LD_{50}, log) must be Roman.

$$\frac{\partial f}{\partial t} + \frac{\mathbf{p}}{m} \cdot \nabla f + \mathbf{F} \cdot \frac{\partial f}{\partial \mathbf{p}} = \left(\frac{\partial f}{\partial t}\right)_{\mathrm{coll}} \quad (1)$$

Subscripts or superscripts that are words, abbreviations or acronyms must be Roman, rather than italic.

Subscripts or superscripts that are themselves scalar variables must be italic.

$$S = -k_{\mathrm{B}} \sum_i p_i \ln p_i \quad (2)$$

Vectors (such as the wavevector $\mathbf{k}$ or the magnetic field vector $\mathbf{B}$) must be bold without italics.

Express inverse unit dimensions using negative integers or the word "per".

"kg m^{-1} s^{-2}", not "kg/ms^2"

Display equations must be numbered (X) and cited as Equation (X).

Use consistent formatting for the main text, figures, figure axes and legends, and the Supplementary Information.

SUBJECT-SPECIFIC FORMATTING

Use italics for species names.

Genome editing in *Escherichia coli*

Use italics for gene names, and Roman for protein names.

The gene *EPHA2*... the protein EphA2

Use bold for numbering chemical compounds.

The NMR spectrum of **3** is shown

Chemical abbreviations or formulae should not be bolded.

Trichloroacetic acid (TCA) was used

For detailed guidance on the characterisation of chemical and biomolecular materials, see here