

nature

Final submissions

These instructions apply only if your manuscript has been accepted in principle for publication and an editor has asked you to upload production-quality material.

Before your manuscript can be formally accepted for publication and passed to our subediting, art and production departments, you will need to upload electronic files of your text, figures, Extended Data figures and tables, and Supplementary Information (if any) to our server. You will also need to upload scanned copies of any forms and declarations requested by the editorial office for signing.

FINAL TEXT

Instructions for formatting and content of the text are at www.nature.com/nature/authors/gta.

Our preferred format for text is Microsoft Word with the style tags removed.

TeX/LaTeX: If you have prepared your paper using TeX/LaTeX, we will need to convert this to Word after acceptance, before your paper is typeset. For cross-reference purposes, please convert to PDF format and upload the PDF in addition to the TeX/LaTeX file at final submission.

Authors submitting LaTeX files may use any of the standard class files such as `article.cls`, `revtex.cls`, `aastex.cls` or `amsart.cls`. Please remove all personal macros, and avoid loading non-standard packages. All textual material of the paper (including tables, figure captions, online methods, etc.) should be in electronic form, as a **single file**. Graphics should not be called during compilation; they should be supplied individually according to the guidelines on figure preparation below. There is no need to spend time visually formatting the manuscript. Please use numerical citation styles only and ensure that the citations are numbered according to the order they appear in the text (not alphabetically). References should be included within the manuscript file itself. Authors who wish to use BibTeX to prepare their references should copy the reference list from the `.bbl` file that BibTeX generates and paste it into the main manuscript `.tex` file (and delete the associated `\bibliography` and `\bibliographystyle` commands). As a final precaution, authors should ensure that the complete `.tex` file compiles successfully on their own system with no errors or warnings, before submission.

Formatting details in text

Order of elements. Articles should be ordered in the sequence: title, authors, affiliations (plus present addresses), bold first paragraph (or abstract), main text, references, supplementary information line (if any), acknowledgements, author contributions, author information (containing data deposition statement, competing interest declaration and corresponding author line), tables, figure legends, (online-only) Methods (plus any associated references), Extended Data table titles and legends and Extended Data figure legends (any references unique to the Extended Data should be added to the end of the online-only reference list).

Fonts. We prefer the use throughout of a 'standard' font, preferably 12-point Times New Roman. For mathematical symbols, Greek letters, and other special characters, use normal text or symbol font. List non-standard keyboard symbols in the letter accompanying the final accepted version of your paper. Word Equation editor/MathType should be used only for formulae that cannot be produced using normal text or symbol font.

Page layout. Separate paragraphs by a single, not a double, carriage return ('enter'). Do not indent the start of paragraphs or insert page breaks at the end of sections. Do not insert a double space at the end of a sentence.

Reference citations (e.g. Water flows downhill¹³). Please observe the following:

- Use superscripts or subscripts for citations (see above example), not 'raised' or 'lowered' formats.

- **Do not use linked fields** (produced by 'EndNote' and similar programs). For authors using EndNote, please use the one-click removal button provided by EndNote to strip out EndNote macros before saving and submitting your text file.

FINAL PRINT-ONLY ARTWORK

When preparing figures, authors are advised to refer to printed copies of *Nature* to get a sense of general size and style points.

When you send us your final artwork files, please include the e-mail address of a person (an author or author's artist) who can promptly deal with our artwork format queries over a three-week period after your paper is accepted for publication.

For an illustrated guide to preparing production-quality artwork after acceptance, see the information sheet '[Guide to preparing final artwork](#)'.

Lettering

Lettering should be in a sans-serif typeface, preferably Helvetica or Arial, the same font throughout all figures in the paper. Units, capitalization, etc. should follow *Nature* style (see www.nature.com/nature/authors/gta) and refer to recent issues of the journal published after 19 May 2005). Where practical, avoid placing lettering directly over images or shaded areas.

Separate panels in multi-part figures should each be labelled with 8 pt bold, upright (not italic) **a, b, c**. Maximum text size for all other text should be 7 pt; minimum text size should be 5 pt. Amino-acid sequences should be presented in one-letter code in Courier.

Do not rasterize or convert text to outlines.

Sizing

Nature will often reduce figures to the smallest size possible for reasons of space. Authors are encouraged to indicate the smallest possible size they think appropriate for their figures, but *Nature* reserves the right to make the final decision.

For guidance, *Nature's* standard figure sizes are 89 mm wide (single column) and 183 mm wide (double column). The full depth of a *Nature* page is 247 mm. Figures can also be a column-and-a-half where necessary (120–136 mm).

Authors should check (using a reducing photocopier) that, at the smallest possible size, lettering remains readable and lines are sufficiently (but not too) heavy to print clearly. Line weights and strokes should be set between 0.25 and 1 pt at the final size (lines thinner than 0.25 pt may vanish in print). Do not rasterize or outline these lines if possible.

Arrangement of parts

Nature will be guided by the authors' suggested layout of parts within figures, but may rearrange parts if necessary. Authors should indicate essential layout features, for example particular alignments of panels within a figure. We value clear instructions from authors to help us lay out their figures.

Image types

The best format for any particular figure depends partly on what sort of images it contains. Images fall into two basic categories: rasterized images (also called bitmapped images) and line (or vector) art.

Please do not rasterize line art or text in submitted figures and wherever possible supply editable, unflattened vector artwork.

Electronic image formats

If you cannot provide artwork in our preferred formats as described below, or have difficulty in understanding our requirements please send

an e-mail to art@nature.com so we can advise you as to how best to prepare your artwork in a compatible format.

Acceptable electronic formats

Nature preferred formats are:

- **Layered Photoshop (PSD) or TIFF format** (high resolution, 300–600 dots per inch (dpi) for photographic images. In Photoshop, it is possible to create images with separate components on different layers. This is particularly useful for placing text labels or arrows over an image, as it allows them to be edited later. If you have done this, please send the Photoshop file (.psd) with the layers intact.
- **Adobe Illustrator (AI), Postscript, Vector EPS or PDF format** for figures containing line drawings and graphs, including figures combining text and line art with photographs or scans.

If these formats are not possible, we can also accept the following formats: JPEG (high-resolution, 300–600 dpi), CorelDraw (up to version 8), Microsoft Word, Excel or PowerPoint (see below).

Please **do not** send the following formats, as we cannot use them for print-quality reproduction: Canvas, DeltaGraph, Tex, ChemDraw, SigmaPlot. These files should be converted to postscript, EPS or PDF format before submission. For further help and advice, contact our art editors at art@nature.com.

Although PowerPoint can export JPEG format, the resulting files are low resolution and not suitable for printing. The only way to obtain sufficiently high-quality graphics format from Microsoft Office documents is to generate Postscript using 'Print to file'.

All photographic images must be supplied at a minimum of 300 dpi at the maximum size they can be used. Artificially increasing an image's resolution in an artwork program will not improve its quality.

We prefer Photoshop or TIFF format for rasterized images. Where JPEG is the only option available, the quality should be set to the highest possible to minimize loss of information.

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Computer screens display colours using red, green and blue pixels (RGB), whereas the four-colour printing process uses inks in cyan, magenta, yellow and black (CMYK). We recommend supplying your artwork in the RGB colour spectrum. This provides a wider gamut than the CMYK print format and allows more faithful reproduction of fluorescent colours when viewed digitally.

Colour figures supplied in RGB mode will retain the RGB colour space in the online version (web PDF and online images), but they will be automatically converted to CMYK to be printed in the journal.

The range of colours that can be achieved in CMYK is limited, so converting from RGB to CMYK often affects the appearance of images. In particular, brighter colours are likely to appear muted, and the contrast between different coloured areas may be reduced.

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Online-only Extended Data figures and tables should be provided in a different format to print-only figures.

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Figures and tables should be sized such that they fit to a single page (leaving enough room for the legend/footnote to be set below). The

maximum page dimension is 18 cm x 24 cm. Tables can be set at one-column (8.9 cm) or two-column (18 cm) width. For figures with multiple panels, label parts "a", "b", etc, and arrange in a layout that minimizes white space and has the figure centred on the page.

Extended Data figure files should be named with the following convention: CorrespondingAuthorSurname_EDfig1.jpg. Extended Data table files should be named with the following convention: CorrespondingAuthorSurname_EDTable1.jpg.

See [Extended Data Formatting Guide](#) and [Composition of a Nature research paper](#) for further details.

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Supplementary Information (SI) is peer-reviewed material directly relevant to the conclusion of a paper that cannot be included in the printed version for reasons of space or medium (for example, video clips or sound files). Supplementary Information should not contain figures (any figures (or standard tables that fit to one page) additional to those appearing in print should be formatted as Extended Data figures (or tables, as appropriate)).

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1. Each piece of SI designated to one of nine categories, combined where possible into a single PDF.
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3. Formats are among those accepted by *Nature*.
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For further information on SI, including full list of categories and acceptable formats, please see www.nature.com/nature/authors/submissions/final/suppinfo.html.

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The data must be MIAME-compliant, with all variables completed.

See *Nature* editorial of 26 September 2002 (www.nature.com/nature/journal/v419/n6905/full/419323a.html) for further details and explanation.

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Author checklist, and amend your manuscript as appropriate.

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