nature
chemical biology

Guide to Authors and Referees

ABOUT THE JOURNAL

AIMS AND SCOPE OF THE JOURNAL

Nature Chemical Biology is a multidisciplinary journal that publishes papers of the highest quality and significance in all areas of chemical biology. The journal is particularly interested in contributions from chemists who are applying the principles, language and tools of chemistry to the understanding of biological problems and from biologists who are interested in understanding biological processes at the molecular level. Priority is given to work that reports fundamental new advances in biology or chemistry. Research areas at the interface of chemistry and biology covered in the journal include, but are not limited to:

Chemical Synthesis
- Diversity-oriented synthesis
- Nucleic acid templated synthesis
- Biomolecular modification and labelling chemistry
- Solid-phase biomolecular synthesis: peptides, oligonucleotides, oligosaccharides
- Synthesis of small biomolecules: lipids, carbohydrates, nucleosides, amino acids
- Combinatorial chemistry
- Natural products synthesis
- Biomimetic synthesis
- Asymmetric catalysis

Expanding Chemistry through Biology
- Enzymatic synthesis
- Natural products isolation and characterization
- Combinatorial biosynthesis
- Biosynthetic engineering
- Virus-based chemistry
- Directed evolution and characterization of macromolecular catalysts and receptors
- Chemical informatics

Chemical Mechanisms in Biology
- Enzyme inhibition and reaction mechanisms
- Mechanisms of drug action in vivo
- Small molecule-biological target interactions
- Evolution and novel chemistry of catalytic nucleic acids
- Pharmacological determination of protein function in vivo
- Molecular probes of biological function
- Mechanistic analyses of post-translational modification chemistry
- Chemical insights into post-genomic approaches, including RNA interference and proteomics
- Metal ions in biological systems
- Chemical imaging agents
- Single molecule chemistry of small molecules and biomolecules
- Theoretical simulations and modelling of biomolecules
- Molecular recognition
- Small molecular model systems for metalloenzymes
- Molecular machines
- Pharmacologically active natural products
- Biosynthetic pathway elucidation
- Chemical approaches to protein interaction networks
- Chemical ecology

Expanding Biology through Chemistry
- Chemical genetics and High Throughput Screening
- Biomolecular and small molecular array fabrication and validation
- Chemical insights into drug design and development
- Synthetic biology
- Unnatural biomolecular analogs in biological systems
- Chemical genomics
- Chemical regulation of biosynthetic pathways
- Chemical methods for protein, carbohydrate and nucleic acid design
- Chemical approaches to systems biology

Nature Chemical Biology is committed to publishing the top-tier of original research in chemical biology through a fair and rapid review process that emphasizes rigorous chemical and biological characterization. The journal features three research paper formats: Brief Communications, Letters and Articles.

In addition to publishing original research, *Nature Chemical Biology* serves as a central source for top-quality information for the chemical biology community through the publication of Commentaries, Research Highlights, News & Views, Perspectives and Reviews, as well as Correspondence.

EDITORS AND CONTACT INFORMATION

Like the other Nature titles, *Nature Chemical Biology* has no external editorial board. Instead, all editorial decisions are made by a team of full-time professional editors, who are Ph.D.-level chemists and biologists. Information about the scientific background of the editors may be found here.

RELATIONSHIP TO OTHER NATURE JOURNALS

Nature Chemical Biology is editorially independent, and its editors make their own decisions, independent of the other Nature journals. If a paper is rejected from one Nature journal, the authors may choose to resubmit to *Nature Chemical Biology*. At the authors' request, the editors can also transfer the referees' reports to *Nature Chemical Biology*. In that case, the journal editors will take the previous reviews into account when making their decision, although in some cases the editors may choose to take advice from additional referees. Alternatively, authors may choose to request a fresh

review, in which case the editors will evaluate the paper without reference to the previous review process. A general explanation of the relationships between Nature titles can be found at http://www.nature.com/nature/author/natureguide.html.

EDITORIAL AND PUBLISHING POLICIES

The Nature journals, including *Nature Chemical Biology*, share a number of common policies including the following:

- Relationship between Nature journals
- License agreement and author copyright
- Embargo policy and press releases
- Use of experimental animals and human subjects
- Competing financial interests
- Availability of materials and data
- Gene nomenclature
- Security concerns
- Refutations and complaints
- Corrections

See Shared Editorial Policies for more detailed information.

IMPACT FACTOR

The ISI impact factor for *Nature Chemical Biology* is due in 2007.

ABBREVIATION

The correct abbreviation for abstracting and indexing purposes is *Nat. Chem. Biol.*

ISSN AND EISSN

The international standard serial number (ISSN) for *Nature Chemical Biology* is 1552-4450, and the electronic international standard serial number (EISSN) is 1552-4469.

CONTENT TYPES

PRIMARY RESEARCH FORMATS

A **Brief Communication** reports a concise study of high quality, broad interest and immediate importance. This format may not exceed 2 printed journal pages. Brief Communications begin with a brief unreferenced abstract (3 sentences, no more than 70 words). The main text is typically 1,000–1,500 words, including abstract, references and figure legends, and contains no headings. Brief Communications normally have no more than 2 display items (schemes, figures and/or tables), although this may be flexible at the discretion of the editor, provided the page limit is observed. References are limited to 15. Article titles are omitted from the reference list.

Brief Communications include a competing financial interests statement and received/accepted dates. They may be accompanied by supplementary information. Brief Communications are peer reviewed.

A **Letter** reports an important novel research study, but is less substantial than an Article. Letters typically occupy four printed journal pages. This format begins with an introductory paragraph (not abstract) of approximately 150 words, summarizing the background, rationale, main results and implications of the study. This paragraph should be referenced, as in *Nature* style, and should be considered part of the main text, so that any subsequent introductory material avoids too much redundancy with the introductory paragraph. The text is limited to 1,500 words, excluding the introductory paragraph, Methods, references and figure legends. References are limited to 30. Letters should have no more than 3-5 display items (schemes, figures and/or tables). Letters are not divided by headings, except for the Methods section.

Letters include a competing financial interests statement and received/accepted dates. They may be accompanied by supplementary information. Letters are peer reviewed.

An **Article** is a substantial novel research study of high quality and general interest to the chemical biology community. The main text (excluding abstract, Methods, references and figure legends) is 4,000-5,000 words. The abstract is typically 150 words (10 lines in print) and is unreferenced. Articles have up to 10 display items (schemes, figures and/or tables). An introduction (without heading) is followed by sections headed Results, Discussion and Methods. The Results and Methods should be divided by topical subheadings; the Discussion may contain subheadings at the editors' discretion. References are limited to 50.

Articles include a competing financial interests statement and received/accepted dates. They may be accompanied by supplementary information. Articles are peer reviewed.

OTHER FORMATS

Correspondence provides readers with a venue to comment on papers published in a previous issue of the journal or to discuss issues relevant to chemical biology. A Correspondence is never more than one printed page and typically is 250-500 words and is limited to one display item and 10 references. Article titles are omitted from the reference list. Titles for correspondence are supplied by the editors.

In cases where a correspondence is critical of a previous research paper, the authors are given the opportunity to publish a brief reply. Criticism of opinions or other secondary matter does not involve an automatic right of reply.

Refutations are always peer reviewed. Other types of Correspondence may be peer reviewed at the editors' discretion.

Commentary articles focus on policy, science and society or purely scientific issues related to chemical biology. They should be of immediate interest to a broad readership and should be written in an accessible, non-technical style. Figures and diagrams are encouraged, but are not a requirement. Commentaries are typically no longer than 1,500 words and include up to 25 references. Because the content is variable, the format also is flexible. Article titles are omitted from the reference list.

Commentaries do not include a formal competing financial interests statement, but authors should note in the text any competing financial interests that are not evident from their affiliation. Commentaries may be peer reviewed at the editor's discretion.

News and Views are by prior arrangement only. They may be linked to articles in *Nature Chemical Biology*, or they may focus on papers of exceptional significance that are published elsewhere. Although unsolicited contributions will not normally be considered, prospective authors may propose topics. News and Views are not peer reviewed, but undergo editing in consultation with the editor.

Book Reviews are by prior arrangement only. Suggestions for appropriate books are welcome. Book reviews are not peer reviewed.

A **Review** is an authoritative, balanced and scholarly survey of recent developments in a research field. Although reviews should be recognized as scholarly by specialists in the field, they should be written with a view to informing non-specialist readers. Thus, reviews should be presented using simple prose, avoiding excessive jargon and technical detail. Reviews are approximately 3,000–4,000 words. Reviews typically include 4-6 display items (figures, schemes or tables). References are limited to 100, with exceptions possible in spe-

cial cases. Citations should be selective. The scope of a Review should be broad enough that it is not dominated by the work of a single laboratory, and particularly not by the authors' own work.

Reviews include a competing financial interests statement. Received/accepted dates are not included. Reviews are always peer reviewed to ensure factual accuracy, appropriate citations and scholarly balance.

A **Perspective** is a second format for scholarly reviews and discussions of the primary research literature, which differs from a review or commentary. Perspectives may advocate a controversial position, present a speculative hypothesis or discuss work primarily from one group. Two reviews advocating opposite sides in a research controversy are normally published as Perspectives. The text should not normally exceed 3,000 words, and include up to 5 display items. References are limited to 50.

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HOW TO SUBMIT

ONLINE SUBMISSION

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Submission to *Nature Chemical Biology* is taken to imply that there is no significant overlap between the submitted manuscript and any other papers from the same authors under consideration or in press elsewhere. (Abstracts or unrefereed web preprints do not compromise novelty.) The authors must include copies of all related manuscripts with any overlap in authorship that are under consideration or in press elsewhere. If a related manuscript is submitted elsewhere while the manuscript is under consideration at *Nature Chemical Biology*, a copy of the related manuscript should be sent to the editor.

Submission is also taken to imply that all coauthors have approved the contents of the manuscript and its submission by the corresponding author, and that the corresponding author is authorized to represent all coauthors in pre-publication discussions with the journal. (The corresponding author for editorial purposes need not be the senior author or the person to whom correspondence is addressed after publication.) The primary affiliation for each author should be the institution where the majority of their work was done. If an author has subsequently moved, the current address may also be stated. Statements of equal contribution from more than one author are permitted.

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Further information on the review process and how editors make decisions can be found here.

Chemical biology is a diverse field. Thus, a high priority of *Nature Chemical Biology* is that all papers be accessible to non-specialists. Manuscripts are subject to substantial editing, in consultation with authors, to achieve this goal. After acceptance, a copy editor may make further changes so that the text and figures are readable and clear to those outside the field, and so that papers conform to our style. Contributors are sent proofs and are welcome to discuss proposed changes with the editors, but *Nature Chemical Biology* reserves the right to make the final decision about matters of style and the size of figures.

The editors also reserve the right to reject a paper even after it has been accepted if it becomes apparent that there are serious problems with the scientific content or with violations of our publishing policies.

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ADVANCE ONLINE PUBLICATION

Nature Chemical Biology provides Advance Online Publication (AOP) of Brief Communications, Letters and Articles, which benefits authors with an earlier publication date and allows our readers access to accepted papers before they appear in print. Note that papers published online are definitive and may be altered only through the publication of a print corrigendum or erratum, so authors should make every effort to ensure that the page proofs are correct. All AOP articles are given a unique digital object identifier (DOI) number, which can be used to cite the paper before print publication. For details, please see About advanced online publication.

COVERS AND OTHER ARTWORK

Authors of accepted papers are encouraged to submit images for consideration as a cover. Cover images normally are linked to a specific paper in that issue, but we may also be able to use other images elsewhere in the journal. Illustrations are selected for their scientific interest and aesthetic appeal. Please send prints or electronic files (rather than slides). Please also include a clear and concise legend explaining the image.

Graphical Abstract. When a Brief Communication, Letter or Article is accepted for publication, a Graphical Abstract figure will be required with submission of the final manuscript. A Graphical Abstract, which summarizes the manuscript in visual way, is designed to attract the attention of readers. The Graphic Abstract may contain chemical structures or images, and textual statements should be kept

to a minimum. Color figures are encouraged and will be published at no additional charge. The figure/scheme must be sized to fit in a rectangle of dimensions 10 cm × 3.5 cm. The graphic should be submitted as a single file using a standard file format (see below) and will be published in the Table of Contents in print and online.

PREPARING THE MANUSCRIPT

Nature Chemical Biology is read by scientists from diverse backgrounds including chemists and biologists. In addition, many are not native English speakers. Authors should therefore give careful thought to how their findings may be communicated clearly. Although a shared basic knowledge of biological and chemical sciences may be assumed, please bear in mind that the language and concepts that are standard in one subfield may be unfamiliar to non-specialists. Thus, technical jargon should be avoided as far as possible and clearly explained where its use is unavoidable. Abbreviations, particularly those that are not standard, should also be kept to a minimum. Chemical abbreviations should be defined in the text or legends at their first occurrence, and abbreviations should be used thereafter. The background, rationale and main conclusions of the study should be clearly explained. Titles and abstracts in particular should be written in language that will be readily intelligible to any scientist. We strongly recommend that authors ask a colleague with different expertise to review the manuscript before submission, in order to identify concepts and terminology that may present difficulties to non-specialist readers.

The types of contributions that may be submitted to the journal are described here, along with their length and figure limits. The journal's format requirements are described below.

Manuscripts should be prepared for online submission. Online submissions include: a cover letter, a manuscript text file, individual scheme/figure files and optional Supplementary Information files.

Cover Letter. Authors should provide a cover letter that includes the affiliation and contact information for the corresponding author. Authors should briefly discuss the work's importance and explain why the work is considered appropriate for the diverse readership of *Nature Chemical Biology*. Authors should provide a statement explaining why their manuscript is most appropriate as a Brief Communication, Letter or Article. Authors are asked to provide the names and contact information for qualified scientific reviewers and may request the exclusion of certain referees. Finally, authors should indicate whether they have had any prior discussions with a *Nature Chemical Biology* editor about the work described in the manuscript.

Manuscript Text. All textual content is provided in a single word processing file; schemes and figures are provided in individual files (see below). The manuscript text file should include, in the following order: a title page with author affiliations and contact information, the sections required for each content type (see information for Brief Communications, Letters and Articles), Acknowledgements (optional), Competing Interests Statement, References, Figure and Scheme Legends, Tables. *Nature Chemical Biology* does not utilize word processing manuscript templates. Thus, the manuscript file should be formatted as double-spaced, single column text without justification. Pages should be numbered using an Arabic numeral in the footer of each page. Please use American English spelling throughout. Standard fonts are recommended and the "symbols" font should be used for representing Greek characters. Molecular structures are identified by bold, Arabic numerals assigned in order of presentation in the text. Once identified in the main text or a figure/scheme, compounds should be referred to using the bold, Arabic numeral. The corresponding author should be identified with an asterisk (*).

Acknowledgements should be brief, and should not include thanks to anonymous referees and editors, or effusive comments. Grant or contribution numbers may be acknowledged.

A *Competing Interests Statement* is required for Brief Communications, Letters, Articles Reviews and Perspectives.

References are numbered sequentially as they appear in the text, tables and figure legends. Only one publication is given for each number. Only papers that have been published or accepted by a named publication should be in the numbered list; preprints of accepted papers in the reference list should be submitted with the manuscript. Meeting abstracts and submitted manuscripts should be mentioned in the text with a list of authors (or initials if any of the authors are co-authors of the present contribution). Authors should avoid excessive use of "unpublished results". Published conference abstracts and URLs for web sites should be cited parenthetically in the text, not in the reference list. Grant details and acknowledgments are not permitted as numbered references. Footnotes are not used.

Nature Chemical Biology uses standard *Nature* referencing style. All authors should be included in reference lists unless there are more than five, in which case only the first author should be given, followed by '*et al.*'. Authors should be listed last name first, followed by a comma and initials of given names. Article titles should be in Roman text and book titles in italics; the first word of the title is capitalized, the title written exactly as it appears in the work cited, ending with a period. Journal names are italicized and abbreviated (with periods) according to common usage; refer to *Index Medicus* for details. Volume numbers appear in bold.

Titles of cited articles are required for Articles, Letters, Perspectives and Reviews.

Example: Prescher, J. A., Dube, D. H. & Bertozzi, C. R. Chemical remodeling of cell surfaces in living animals. *Nature* **430**, 873-877 (2004).

For Commentaries, Brief Communications or News & Views, titles of cited articles are not included. Example: Xu, P. *et al. Nature* **431**, 1107-1112 (2004).

For book citations, the publisher and city of publication are required. Example: Eliel, E. L. & Wilen, S. H. *Stereochemistry of Organic Compounds* Ch. 12 (Wiley, New York, 1994).

Figure or Scheme legends for Articles or Letters begin with a brief title for the whole figure and continue with a short description of each panel and the symbols used; they should not contain any details of methods. Brief Communications have short legends (generally less than 100 words), which may include details of methods. Text for figure legends should be provided in numerical order after the references, followed by Scheme legends.

Tables. Please submit tables in Word format at the end of your text document. Tables that include statistical analysis of data should describe their standards of error analysis and ranges in a table legend.

Schemes and Figures. Schemes are used to indicate a series of chemical reactions or experimental procedures, which typically are connected graphically by arrows. Figures are used for data in all other formats including groups of unlinked chemical structures, graphical data, photographs or images, etc. Schemes and Figures should be numbered separately with Arabic numerals in the order of occurrence in the text of the manuscript. One or two column format schemes and figures are preferred. When appropriate, schemes and figures should include error bars. A description of the statistical treatment of error analysis should be included in the figure or scheme legend.

Figure and scheme lettering should be in a clear, sans-serif typeface (for example, Helvetica); if possible, the same typeface in approximately the same font size should be used for all figures in a paper. Use

symbol font for Greek letters. All display items should be on a white background, and should avoid excessive boxing, unnecessary color, spurious decorative effects (such as three-dimensional 'skyscraper' histograms) and highly pixelated computer drawings. The vertical axis of histograms should not be truncated to exaggerate small differences. Labeling must be of sufficient size and contrast to be readable, even after appropriate reduction. The thinnest lines in the final figure should be no smaller than one point wide. Reasonable requests to enlarge figures will be considered, but editors will make the final decision on figure size. Authors will see a proof of figures.

Figures and schemes divided into parts should be labeled with a lower-case, bold a, b, and so on, in the same typesize as used elsewhere in the figure. Lettering in figures and schemes should be in lower-case type, with only the first letter of each label capitalized. Units should have a single space between the number and the unit, and follow SI nomenclature (for example, ms rather than msec) or the nomenclature common to a particular field. Thousands should be separated by commas (1,000). Unusual units or abbreviations should be spelled out in full or defined in the legend. Scale bars should be used rather than magnification factors, with the length of the bar defined in the legend rather than on the bar itself. In legends, please use visual cues rather than verbal explanations, such as "open red triangles".

Unnecessary schemes or figures should be avoided: data presented in small tables or histograms, for instance, can generally be stated briefly in the text instead. Figures or schemes should not contain more than one panel unless the parts are logically connected; each panel of a multipart figure should be sized so that the whole figure can be reduced by the same amount and reproduced on the printed page at the smallest size at which essential details are visible.

When a manuscript is accepted for publication, we will ask for high-resolution figure files, possibly in a different electronic format. This information will be included in the acceptance letter. See below for detailed digital image production and submission.

Equations. Equations and mathematical expressions should be provided in the main text of the paper and will be inserted as figures during manuscript production. Equations are identified by parenthetical numbers, such as (1), and are referred to in the manuscript as "Eq. (1)".

SUPPLEMENTARY INFORMATION

Supplementary Information should be submitted with the manuscript and will be sent to referees during peer review. Supplementary information is not copy-edited by *Nature Chemical Biology*, so authors should ensure that it is clearly and succinctly presented, and that the style and terminology conform with the rest of the paper. The following guidelines detail the creation, citation and submission of supplementary information. Please note that modification of supplementary information after the paper is published requires a formal correction, so authors are encouraged to check their supplementary information carefully before submitting the final version.

Where there is supplementary information to be included exclusively in the online version of a paper published in *Nature Chemical Biology*, please follow these guidelines, or publication may be delayed.

Refer to each piece of supplementary information at least once within the text of the main article (the article that is published in the print issue of the journal), as follows:

Designate each item as Supplementary Table, Scheme, Figure, Video, Audio, Note, Data, Discussion, Equations or Methods. Number Supplementary Tables and Figures as, for example, "Supplementary Table 1." This numbering should be separate from that used in tables and figures appearing in the main printed article. Supplementary Note or Methods should not be numbered; titles for these are optional.

Refer to each piece of supplementary material at the appropriate point(s) in the main article. Be sure to include the word "Supplementary" each time one is mentioned. Please do not refer to individual panels of supplementary figures.

Use the following samples as a guide (note: abbreviate "Figure" as "Fig." when in parentheses).

"Table 1 provides a selected subset of the most active compounds. The entire list of 96 compounds can be found as Supplementary Table 1 online."

"The biosynthetic pathway of L-ascorbic acid in animals involves intermediates of the D-glucuronic acid pathway (see Supplementary Fig. 2 online). Figure 2 shows..."

Figure files should be submitted as web-ready files through the *Nature Chemical Biology* online submission system at http://mts-nchemb.nature.com.

Submit separate electronic files (each including a brief title and legend) in any of these formats:

txt	Plain ASCII text
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doc	MS Word document
jpg	JPEG image
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File sizes should be as small as possible, with a maximum size of 3 MB, so that they can be downloaded quickly. All panels of a figure or table (e.g., Fig. 1a, b and c) should be combined into one file; please do not send as separate files. Image files should be just large enough to view when the screen resolution is set to 640 x 480 pixels. Audio and video files should use a frame size no larger than 320 x 240 pixels. Remember to include a brief title and legend (preferably incorporated into the image file to appear near the image) as part of every electronic figure submitted, and a title as part of every table.

Further queries about submission and preparation of supplementary information should be directed to chembio@boston.nature.com.

CHARACTERIZATION OF CHEMICAL AND BIOMOLECULAR MATERIALS

Nature Chemical Biology is committed to publishing the highest quality research at the interface of chemistry and biology. Manuscripts submitted to the journal will be held to rigorous standards with respect to experimental methods and characterization of new compounds. Authors must provide adequate data to support their assignment of identity and purity for each new compound described in the manuscript.

Chemical identity for most organic and organometallic compounds should be established through spectroscopic analysis. Standard peak listings (see preparation of methods section below) for ^{1}H-NMR and proton-decoupled ^{13}C-NMR should be provided for all new compounds. Other NMR data should be reported (^{31}P-NMR, ^{19}F-NMR, etc.) when appropriate. For new materials, authors also should provide mass spectral data to support molecular mass identity. High-Resolution Mass Spectral (HRMS) data are preferred. UV or IR spectral data may be reported for characteristic functional group identification, when appropriate. Melting point ranges should be pro-

vided for crystalline materials. Specific rotations may be reported for chiral compounds. Authors should provide references, rather than detailed procedures, for known compounds, unless their protocols represent a departure from or improvement of published methods.

Combinatorial compound libraries. Authors describing the preparation of combinatorial libraries should include standard characterization data for a diverse panel of library members.

Biomolecular identity. For new biopolymeric materials (oligosaccharides, peptides, nucleic acids, etc.) direct structural analysis by NMR spectroscopic methods may not be possible. In these cases, authors must provide evidence of identity based on: sequence (when appropriate) and mass spectral (MS) characterization. Detailed characterization of standard oligonucleotide reagents (e.g., primers) for molecular biology experiments is not required.

Biological constructs. Authors should provide sequencing or functional data which validates the identity of their biological constructs (plasmids, fusion proteins, site-directed mutants, etc.) either in the manuscript text or the Methods section, as appropriate.

Sample purity. Evidence of sample purity is requested for each new compound. Methods for purity analysis depend on the compound class. For most organic and organometallic compounds, purity may be demonstrated by high field ^{1}H-NMR or ^{13}C-NMR data, although elemental analysis (±0.4%) is encouraged for small molecules. Quantitative analytical methods including chromatographic (GC, HPLC, etc.) or electrophoretic analyses may be used to demonstrate purity for small molecules and biopolymeric materials.

Preparation of Methods Section. Authors must ensure that their manuscripts include adequate experimental and characterization data necessary for others in the field to reproduce their work. For Articles and Letters, essential methods should be reported in the Methods section. For Brief Communications, experimental details should be reported in Supplementary Information. Authors of all content types are encouraged to include important additional protocols or data in Supplementary Information, which will be peer reviewed.

General methods. Descriptions of standard protocols and experimental procedures should appear in Supplementary Information. Commercial suppliers of reagents or instrumentation should be identified only when the source is critical to the outcome of the experiments. Sources for kits should be identified in the Methods or Supplementary Information.

Synthetic protocols. When appropriate, experimental protocols that describe the synthesis of new compounds should be included. The systematic name of the compound and its bold, Arabic numeral are used as the heading for the experimental protocol. Thereafter, the compound is represented by its assigned bold numeral. Authors should describe the experimental protocol in detail, referring to amounts of reagents in parentheses, when possible (e.g., 1.03 g, 0.100 mmol). Standard abbreviations for reagents and solvents are encouraged. Safety hazards posed by reagents or protocols should be identified clearly. Isolated mass and percent yields should be reported at the end of each protocol.

Detailed spectral data for new compounds should be provided in list form (see below). Figures containing spectra generally will not be published as a manuscript figure unless the data are directly relevant to the central conclusions of the paper. Authors are encouraged to include high-quality images of spectral data for key compounds in the Supplementary Information. Specific NMR assignments should be listed after integration values only if they were unambiguously determined by multi-dimensional NMR or decoupling experiments. Authors should provide information about how assignments were made in a general Methods section.

Example format for compound characterization data. mp: 100-102 °C (lit.[ref] 99-101 °C); TLC ($CHCl_3$:MeOH, 98:2 v/v): R_f = 0.23; $[\alpha]^{D}_{20}$ = -21.5 (c = 0.1 in n-hexane); ^{1}H-NMR (400 MHz, $CDCl_3$): δ 9.30 (s, 1H), 7.55-7.41 (m, 6H), 5.61 (d, *J* = 5.5 Hz, 1H), 5.40 (d, *J* = 5.5 Hz, 1H), 4.93 (m, 1 H), 4.20 (q, *J* = 8.5 Hz, 2H), 2.11 (s, 3H), 1.25 (t, *J* = 8.5 Hz, 3H); ^{13}C-NMR (125 MHz, $CDCl_3$): δ 165.4, 165.0, 140.5, 138.7, 131.5, 129.2, 118.6, 84.2, 75.8, 66.7, 37.9, 20.1; IR (Nujol): 1765 cm^{-1}; UV/Vis: λ_{max} 267 nm; HRMS (*m/z*): $[M]^+$ calcd for $C_{20}H_{15}Cl_2NO_5$, 420.0406; found, 420.0412; Analysis (calcd, found for $C_{20}H_{15}Cl_2NO_5$): C (57.16, 57.22), H (3.60, 3.61), Cl (16.87, 16.88), N (3.33, 3.33), O (19.04, 19.09).

Crystallographic data for small molecules. Manuscripts reporting new three-dimensional structures of small molecules from crystallographic analysis should include a structural figure with probability ellipsoids and a .cif file. Small molecular crystallographic data should be submitted upon publication to the Cambridge Structural Database (http://www.ccdc.cam.ac.uk/).

Macromolecular structural data. Manuscripts reporting new three-dimensional structures of macromolecules should include a table summarizing structural and refinement statistics. To facilitate assessment of the quality of the structural data, a stereo image of a portion of the electron density map (for crystallography papers) or of the superimposed lowest energy structures (>10; for NMR papers) should be provided with the submitted manuscript. If the reported structure represents a novel overall fold, a stereo image of the entire structure (as a backbone trace) should also be provided.

NOMENCLATURE AND ABBREVIATIONS.

When possible, authors should refer to chemical compounds and biomolecules using systematic nomenclature, preferably using IUPAC and IUBMB rules (http://www.chem.qmw.ac.uk/iupac). Standard chemical and biological abbreviations should be used. Unconventional or specialist abbreviations should be defined at their first occurrence in the text.

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Formats

For publication, we can only use TIFF, EPS or postscript (ps) files in PC or Macintosh format, preferably from PhotoShop or Illustrator software. We cannot accept Freehand, Canvas, PowerPoint, CorelDRAW or MacDrawPro files. Chemical structure files should be provided in EPS format.

Chemical Structure Display Items

Schemes and figures that contain chemical structures should be produced using ChemDraw or a similar program. All chemical compounds must be assigned a bold, Arabic numeral in the order in which the compounds are presented in the manuscript text. Schemes

and Figures containing chemical structures should be submitted in a size appropriate for direct incorporation into the printed journal. Authors using ChemDraw should use the following preferences and submit the files at 100% as eps files.

Drawing settings: chain angle, 120°; bond spacing, 18% of width; fixed length, 14.4 pt; bold width, 2.0 pt; line width, 0.6 pt; margin width 1.6 pt; hash spacing 2.5 pt.

Text settings: font, Arial or Helvetica; size, 10 pt.

Preferences: units, points; tolerances, 3 pixel.

Resolution and figure quality

Figure files must be supplied at an appropriate resolution for print publication:

- Color, 300 d.p.i. minimum; please convert all color files into CMYK mode
- Grayscale, 600 d.p.i. minimum for blots and black & white photographs
- Line art, 1200 d.p.i. minimum for graphs and illustrations

Figures that do not meet these standards will not reproduce well and may delay publication until we receive high-resolution images or high-quality printouts. We cannot be held responsible for assuming the cost of corrected reprints should poor quality images need to be used.

Please do not scan laser printouts of figures and send them to us as digital files. The dot pattern on a laser print often creates a moire pattern when scanned.

Stereo images

Stereo diagrams should be presented for divergent 'wall-eyed' viewing, with the two panels separated by ~5.5 cm. In the final accepted version of the manuscript, the stereo images should be submitted at their final print size.

How to send files

To support compatibility with your digital files, it is important to send them to us with the final version of your manuscript. Figures may be sent on Zip disk, Jaz disk or CD, or by FTP (see below)

FTP site

Using any type of FTP software, you can place files on our FTP site. Name your files with the corresponding author's name, figure number and letter, and file format (for example, Dr. Smith's figure 3a in TIFF format: smith3a.tiff). Do not use slashes (/,\) or hyphens (-) when naming your file. Please compress your files before uploading.

site address: ftp.nature.com
user name: natchembio
password: chembio

If the manuscript is initially submitted in hard copy (which is no longer preferred and may cause delays), please follow the instructions below:

Figures should be presented on separate sheets of paper. Please include one original and three copies of sufficient quality for review. The figures should be attached to the review copies of the manuscript (rather than enclosed in a separate envelope). In general, multi-part figures should be arranged as they would appear in the final version. Please avoid sending oversized figures (larger than 8.5 x 11" or A4) wherever possible. Each copy should be marked with the figure number and the corresponding author's name. Reduction to the scale that will be used on the page is not necessary, but any special requirements (such as the separation distance of stereo pairs) should be clearly specified.

SHARED EDITORIAL POLICIES

RELATIONSHIP BETWEEN NATURE JOURNALS

Nature Chemical Biology is editorially independent, and its editors make their own decisions, independent of the other Nature journals. If a paper is rejected from one Nature journal, the authors may choose to resubmit to *Nature Chemical Biology*. If the paper was reviewed, at the authors' request, the editors can transfer the referees' reports to *Nature Chemical Biology*. In that case, the journal editors will take the previous reviews into account when making their decision, although in some cases the editors may choose to take advice from additional or alternative referees. Alternatively, authors may choose to request a fresh review, in which case the editors will evaluate the paper without reference to the previous review process. A general explanation of the relationships between Nature titles can be found at http://www.nature.com/nature/author/natureguide.html.

LICENSE AGREEMENT AND AUTHOR COPYRIGHT

Since February 2002, the policy of Nature Publishing Group has been to allow authors to retain copyright to their own work. We therefore no longer require authors to transfer copyright to us, although we require that they grant us a license to publish their work in print and electronic form. We cannot proceed with publication until the license form has been signed and returned to us along with the corrected proofs.

The license agreement PDF is available here. US government employees click here. Frequently asked questions about this policy are answered here.

EMBARGO POLICY AND PRESS RELEASES

Publication in *Nature Chemical Biology* is conditional on there being no prior disclosure of the work to the media. Thus, authors should not give press conferences or otherwise encourage media coverage of submitted work, except on the understanding that the embargo will be respected. Failure to do so may prejudice further consideration of the manuscript. This policy is in no way intended to restrict open discussion within the scientific community, however, and so the presentation of results at scientific meetings (including the publication of abstracts) is acceptable, as is the deposition of unrefereed preprints in electronic archives.

Once scheduled for publication, papers are listed in a press release that is distributed to the media, under embargo, about one week before publication. Papers that are deemed especially newsworthy are highlighted by a brief summary, written by the editors. Authors may therefore receive calls from the media during this time; we encourage them to cooperate with journalists to ensure that media coverage of their work is as accurate and balanced as possible. Authors whose papers are already scheduled for publication may also arrange their own publicity (for instance through their institutional press offices), but they must strictly adhere to our press embargo.

USE OF EXPERIMENTAL ANIMALS AND HUMAN SUBJECTS

For manuscripts reporting experiments on live vertebrates or higher invertebrates, authors must identify the committee approving the experiments, and must confirm that all experiments were performed in accordance with relevant guidelines and regulations. For manuscripts reporting experiments on human subjects, authors must identify the committee approving the experiments, and must also include a statement confirming that informed consent was obtained from all subjects. These statements should appear in the Methods section (or

for contributions without Methods sections, within the main text or in the captions of relevant figures or tables). Referees may be asked to comment specifically on any cases in which concerns arise.

COMPETING FINANCIAL INTERESTS

In the interest of transparency, the Nature journals now require authors of research, review and perspective articles to make a declaration of their competing financial interests in relation to papers accepted for publication. For details, please see our policy.

AVAILABILITY OF MATERIALS AND DATA

As a condition of publication, authors are required to make all materials and methods used promptly available to academic researchers for their own use. Authors are required to state in the Methods section of the published manuscript any conditions for use of materials, and to provide full disclosure of the conditions to the editors at submission and on a freely accessible, identified web site after publication. Authors of published papers are allowed to charge a small amount for materials distributed to other researchers to cover the authors' costs in producing the materials.

This requirement includes antibodies and the constructs used to make transgenic animals, but not the animals themselves. Mutant strains of mice generated without the use of constructs must be submitted to a public repository at the time of publication, unless authors can ensure prompt distribution to academic researchers on request.

Papers reporting protein or DNA sequences and crystallographic structures will not be accepted without an accession number to Genbank/EMBL/DDBJ, PDB, SWISS-PROT or other appropriate, identified, publicly available database in general use in the field that gives free access to researchers from the date of initial publication (normally the date of online publication); see *Nature* **394**, 105; 1998 and **404**, 317; 2000. Accession numbers are provided directly to authors by these databases on deposition of data, and must be included in the *Nature Chemical Biology* paper before publication.

Structures: Papers must state that atomic coordinates have been deposited in the Protein Data Bank (or Nucleic Acids Database, as appropriate), and must list the accession code(s). Accessibility must be designated "for immediate release upon publication". At this time, there is no formal requirement for deposition of NMR assignments and constraints, molecular envelope reconstructions from electron microscopy data or coordinates generated from modeling. However, we encourage authors to deposit such data in appropriate, publicly available databases, provide accession codes and release data upon publication.

Microarrays: Please see the MGED open letter specifying microarray standards at http://www.mged.org/Workgroups/MIAME/miame_checklist.html. Authors submitting manuscripts containing microarray data must supply the data as Supplementary Information on CD at time of submission. The data must be MIAME-compliant and supplied in a form that is widely accessible, with the completed checklist also placed on the CD. Five copies of the CD are required, so they can be sent to referees. We also require submission of microarray data to the GEO (www.ncbi.nlm.nih.gov/geo/) or ArrayExpress (www.ebi.ac.uk/arrayexpress) databases, with accession numbers at or before acceptance of the paper for publication. See *Nature* 419, 323; 2002 for further details and explanation.

Any supporting data sets for which there is no public repository must be made available to any interested reader on and after the publication date from the authors directly, the author providing a URL to be used in the paper on publication. Researchers who encounter a persistent refusal to comply with these guidelines should contact the Editor. See *Nature* **416**, 1; 2002 for further details.

GENE NOMENCLATURE

Authors should use approved nomenclature for gene symbols, and use symbols rather than italicized full names *(Ttn*, not *titin)*. Please consult the appropriate nomenclature databases for correct gene names and symbols. A useful resource is LocusLink (<http://www.ncbi.nlm.nih.gov/LocusLink/>). Approved human gene symbols are provided by HUGO Gene Nomenclature Committee (HGNC), e-mail: nome@galton.ucl.ac.uk; see also http://www.gene.ucl.ac.uk/nomenclature. Approved mouse symbols are provided by The Jackson Laboratory, e-mail: nomen@informatics.jax.org; see also http://www.informatics.jax.org/mgihome/nomen.

For proposed gene names that are not already approved, please submit the gene symbols to the appropriate nomenclature committees as soon as possible, as these must be deposited and approved before publication of an article.

Avoid listing multiple names of genes (or proteins) separated by a slash, as in '*Oct4*/*Pou5f1*', as this is ambiguous (it could mean a ratio, a complex, alternative names or different subunits). Use one name throughout and include the other at first mention: '*Oct4* (also known as *Pou5f1*)'.

SECURITY CONCERNS

The editors may seek advice about submitted papers not only from technical referees but also on any aspect of a paper that raises concerns. Very occasionally, concerns may relate to the societal implications of publishing a paper, including threats to security. In such circumstances, advice will usually be sought simultaneously with the technical refereeing process. As in all publishing decisions, the ultimate decision whether to publish is the responsibility of the editor of the journal concerned.

The threat posed by bioweapons raises the unusual need to assess the balance of risk and benefit in publication. Editors are not necessarily well qualified to make such judgments unassisted, and so we reserve the right to take expert advice in cases where we believe that concerns may arise. We recognize the widespread view that openness in science helps to alert society to potential threats and to defend against them, and we anticipate that only very rarely (if at all) will the risks be perceived as outweighing the benefits of publishing a paper that has otherwise been deemed appropriate for a Nature journal. Nevertheless, we think it appropriate to consider such risks and to have a formal policy for dealing with them if need arises.

The editorial staff of Nature journals maintains a network of advisers on biosecurity issues. All concerns on that score, including the commissioning of external advice, will be shared within an editorial monitoring group consisting of the Editor-in-Chief of Nature publications, the Executive Editor of the Nature research journals, the Chief Biological Sciences Editor of Nature, and the chief editor of the journal concerned.

Once a decision has been reached, authors will be informed if biosecurity advice has informed that decision. See *Nature* **421**, 777, 2003 for a joint statement by journal editors, and for other links.

REFUTATIONS AND COMPLAINTS

We recognize our responsibility to correct errors that we have previously published. Our policy is to consider refutations of primary research papers, and to publish them (in concise form) if and only if the author provides compelling evidence that a major claim of the original paper was incorrect. Refutations are peer-reviewed, and where possible they are sent to the same referees who reviewed the

original paper. A copy is normally also sent to the corresponding author of the original paper for signed comments. Refutations are typically published in the Correspondence section, along with a brief response from the original authors if they so choose.

Complaints, disagreements over interpretation and other matters arising should be addressed to the editor. Because debates over interpretation are often inconclusive, we do not automatically consider criticisms of review articles or other secondary material, and in the event that we decide to publish such a criticism we do not necessarily consult with the original authors. Editorial decisions in such cases are based on considerations of reader interest, novelty of arguments, integrity of the publication record and fairness to the parties involved. Publication may take various forms (Correspondence, Corrigendum from the original author, Statement by Editors, etc), and the right of reply is at the discretion of the editor.

CORRECTIONS

Errata: errors introduced by the journal during editing or production and for which the journal takes responsibility. Our policy is to correct such errors in cases where they distort the scientific meaning or the bibliographic record, or where they have significant potential to damage the reputation of the authors, the journal and/or third parties.

Corrigenda: errors introduced by authors, for which they take responsibility. Our policy is to allow authors to correct such errors in cases where they distort the scientific meaning or the bibliographic record, or where they have significant potential to damage the reputation of the journal or third parties.

Addenda: additional information from authors that, while not correcting a specific error, nevertheless alters the interpretation of a paper. Publication of addenda is at the discretion of the editor.

Authors should note that advance online publication (AOP) represents definitive publication. Authors should therefore make every effort to check for errors in their proofs before the paper is published online. In order to maintain the integrity of the publication record, online corrections are normally accompanied by print corrections and are decided by the same criteria.

Supplementary information online is subject to the same policies as the main article. In order to maintain the integrity of the publication record, corrections must be accompanied by a print erratum, corrigendum or addendum.

More detailed information on our corrections policy is available here.

ABOUT THE EDITORS

TERRY L. SHEPPARD, EDITOR

Before assuming the Editorship of *Nature Chemical Biology*, Terry was on the faculty of Northwestern University's Department of Chemistry, where he developed an independent program in nucleic acid chemical biology, which included investigations of oxidative DNA damage and repair, template-directed synthesis, and nucleoside therapeutics. This followed his appointment as a NASA postdoctoral fellow with Gerald F. Joyce at The Scripps Research Institute, where he discovered, using *in vitro* evolution, a "DNA enzyme" that catalyzed DNA depurination and strand cleavage. Terry completed his Ph.D. in organic chemistry with Ronald Breslow at Columbia University in 1995, where he synthesized 2',5'-linked DNA and evaluated its promise for antisense therapeutic applications.

Terry is based in the East Coast US editorial office of *Nature Chemical Biology* in Cambridge and may be reached at: t.sheppard@boston.nature.com.

JOANNE KOTZ, ASSISTANT EDITOR

Prior to joining *Nature Chemical Biology*, Joanne undertook industry based postdoctoral research at Genentech, working with Andrea Cochran, where her research focused on developing combinatorial methods to study protein stability and using chemical tools to investigate the biological role of a mitotic kinase. This followed postdoctoral research in bacterial pathogenesis with Xavier Nassif at the Necker-Enfants Malades Hospital in Paris. Joanne obtained her PhD in 2000 from the University of California, Berkeley, where she studied enzyme mechanism in copper amine oxidases with Judith Klinman.

Joanne is based in the West Coast US editorial office of *Nature Chemical Biology* in San Francisco and can be contacted at: j.kotz@naturesf.com

General contact information for *Nature Chemical Biology* can be found here

EDITORIAL PROCESS

PRESUBMISSION INQUIRIES

Researchers may request informal feedback from the editors on the journal's interest in a particular manuscript. A short 'presubmission inquiry' can be sent through the online submission system. Researchers should supply a brief paragraph stating the interest to a broad scientific readership, address and contact details, title, a fully referenced summary paragraph, and a list of the references cited in the summary paragraph. Time constraints do not permit editors to read entire manuscripts as presubmission inquiries, and so a reply indicating interest in the work is made on the basis of partial information. Papers that were invited after a presubmission inquiry will occasionally be rejected without review, particularly if the degree of novelty, point of the paper, or existence of overlapping references was not clear.

The presubmission process is designed as a timesaver and to aid in the submission decision for authors. Editors do not enter into extended discussions about these responses. Authors who disagree with a presubmission decision should send in the entire manuscript as a regular submission to our online submission system so that the editors can make a fully informed judgment about whether to review the paper.

INITIAL SUBMISSION

Papers should be submitted via the online submission system. Each new submission is assigned to a primary editor, who reads the paper, consults with the other editors, and decides whether it should be sent for peer review. The author should identify if the work describing the manuscript has been discussed with a specific *Nature Chemical Biology* editor before submission. Many papers describing solid studies of interest to those in the field are nonetheless judged to be unlikely to compete successfully with the best work submitted to the journal.

Like other journals in the Nature family, *Nature Chemical Biology* has no external editorial board. However, if a paper's importance within the field is unclear, an editor may request advice from outside experts in deciding whether to review it. The novelty of a submitted paper is considered to be compromised if it has significant conceptual overlap with a published paper or one accepted for publication by *Nature Chemical Biology*. Preprint archives do not compromise novelty.

If a paper was previously reviewed at another Nature journal, at the authors' request, the editors can transfer the referees' reports to *Nature Chemical Biology*. In that case, the journal editors will take the previous reviews into account when making their decision, although in some cases the editors may choose to take advice from additional or alternative referees. Alternatively, authors may choose to request a fresh review, in which case the editors will evaluate the paper without reference to the previous review process. However, this decision must be made at the time of initial submission and cannot be changed later. If the authors ask the editors to consider the previous reviews, they should include a letter explaining the relationship between the submitted manuscript and the previous submission and (assuming it has been revised in light of the referees' criticisms) giving a point-by-point response to the referees. In cases where the work was felt to be of high quality, papers can sometimes be accepted without further review, but if there were serious criticisms, the editors will consider them in making the decision. In the event of publication, the received date is the date of submission to *Nature Chemical Biology*.

PEER REVIEW

The corresponding author is notified by e-mail when the editor decides to send a paper for review. Authors may indicate a limited number of scientists who should not review the paper. Excluded scientists must be identified by name. Authors may also suggest referees; these suggestions are often helpful, although they are not always followed. By policy, referees are not identified to the authors, except at the request of the referee.

Conceptually similar manuscripts are held to the same editorial standards as far as possible, and so they are often sent to the same referees. However, each of the co-submitted manuscripts must meet the criteria for publication without reference to the other paper. Thus if one paper is substantially less complete or convincing than the other, it may be rejected, even if the papers reach the same conclusion.

DECISION AFTER REVIEW AND REVISION

When making a decision after review, editors consider not only how good the paper is now, but also how good it might become after revision. In cases where the referees have requested well-defined changes to the manuscript that do not appear to require extensive further experiments, editors may request a revised manuscript that addresses the referees' concerns. The revised version is normally sent back to some or all of the original referees for re-review. The decision letter will specify a deadline (typically a few weeks), and revisions that are returned within this period will retain their original submission date.

In cases where the referees' concerns are more wide-ranging, editors will normally reject the manuscript. If the editors feel the work is of potential interest to the journal, however, they may express interest in seeing a future resubmission. The resubmitted manuscript may be sent back to the original referees or to new referees, at the editors' discretion. In such cases, revised manuscripts will not retain their earlier submission date.

In either case, the revised manuscript should be accompanied by a cover letter that includes a point-by-point response to referees' comments and an explanation of how the manuscript has been changed.

An invited revision should be submitted via the revision link to the online submission system provided in the decision letter, not as a new manuscript.

FINAL SUBMISSION AND ACCEPTANCE

A request for final submission is sent when the paper is nearly ready to publish, possibly requiring some text changes but no revisions to the data or conclusions. These letters are accompanied by detailed comments on the paper's format from the copy editor. At this stage, authors may receive an extensively edited manuscript from the editor indicating editorial concerns that must be addressed in the revision. A high priority of *Nature Chemical Biology* is that all papers be accessible to nonspecialists. Manuscripts are subject to substantial editing to achieve this goal. After acceptance, a copy editor may make further changes so that the text and figures are readable and clear to those outside the field, and so that papers conform to our style.

For the final revision, authors should use the revision link to the online submission system provided in the decision letter to upload a final version of the text with all the requested format changes. Electronic files of the final figures, at high resolution, should be sent separately on disk or via ftp.

When all remaining editorial issues are resolved, the paper is formally accepted. The received date is the date on which the editors received the original (or if previously rejected, the resubmitted) manuscript. The accepted date is when the editor sends the acceptance letter.

Contributors are sent proofs and are welcome to discuss proposed changes with the editors, but *Nature Chemical Biology* reserves the right to make the final decision about matters of style and the size of figures.

APPEALS

Even in cases where editors did not invite resubmission, some authors ask the editors to reconsider a rejection decision. These are considered appeals, which, by policy, must take second place to the normal workload. In practice, this means that decisions on appeals often take several weeks. Authors should not provide a revised manuscript unless the editors request one.

Decisions are reversed on appeal only if the editors are convinced that the original decision was a serious mistake, not merely a borderline call that could have gone either way. Further consideration may be merited if a referee made substantial errors of fact or showed evidence of bias, but only if a reversal of that referee's opinion would have changed the original decision. Similarly, disputes on factual issues need not be resolved unless they were critical to the outcome. Thus, after careful consideration of the authors' points, most appeals are rejected by the editors.

If an appeal merits further consideration, the editors may send the authors' response or the revised paper to one or more referees, or they may ask one referee to comment on the concerns raised by another referee. On occasion, particularly if the editors feel that additional technical expertise is needed to make a decision, they may obtain advice from an additional referee.

FOR REFEREES

ONLINE MANUSCRIPT REVIEW

We strongly encourage referees to submit their comments via our online submission system by following the link provided in the editor's email. For help with this system, contact the journal's editorial assistant at chembio@boston.nature.com.

ABOUT NATURE CHEMICAL BIOLOGY

Nature Chemical Biology is an international monthly journal, which aims to provide a high-visibility forum for papers of exceptional scientific quality and interest. Although it comes from the same publisher as *Nature* itself, the two journals are editorially independent. As

with the other Nature titles, there is no external editorial board, and all editorial decisions are the responsibility of the full-time editorial staff. More information about *Nature Chemical Biology*, including aims and scope of the journal, can be found on our website at http://www.nature.com/naturechemicalbiology. For any questions about the journal that are not addressed here, we encourage referees to contact the editors.

CRITERIA FOR PUBLICATION

Nature Chemical Biology receives many more submissions than it can publish each month. Therefore, we ask referees to keep in mind that every paper that is accepted means that another good paper must be rejected. To be published in *Nature Chemical Biology*, a paper should meet several general criteria:

- The data must be technically sound.
- The paper provides strong evidence for its conclusions.
- The results are novel (we do not consider abstracts and internet preprints to compromise novelty).
- The manuscript is important to scientists in the specific field.
- The paper will be interesting to a general audience of chemists and biologists.

In general, to be acceptable, a paper should represent an advance in understanding likely to influence thinking in the field. There should be some reason why the work deserves the visibility of publication in *Nature Chemical Biology* rather than a specialist journal.

THE REVIEW PROCESS

All submitted manuscripts are read by the editorial staff. To save authors and referees time, only those papers that seem most likely to meet our editorial criteria are sent for formal review. Those papers judged by the editors to be of insufficient general interest or otherwise inappropriate are rejected promptly without external review (although these decisions may be based on informal advice from experts in the field).

- Manuscripts judged to be of potential interest to our readership are sent for formal review, typically to two or three reviewers. The editors then make a decision based on the reviewers' advice, from among several possibilities:
- Accept, with or without editorial revisions
- Invite the authors to revise their manuscript to address specific concerns before a final decision is reached
- Reject, but indicate to the authors that further work might justify a resubmission
- Reject outright, typically on grounds of specialist interest, lack of novelty, insufficient conceptual advance or major technical and/or interpretational problems

Referees are welcome to recommend a particular course of action, but they should bear in mind that other referees may have different views, and the editors may have to make a decision based on conflicting advice. The most useful reports, therefore, provide the editors with the information on which a decision should be based. Setting out the arguments for and against publication is often as helpful as a direct recommendation one way or the other.

Editorial decisions are not a matter of counting votes or numerical rank assessments, and we do not always follow the majority recommendation. We try to evaluate the strength of the arguments raised by each referee and by the authors, and we may also consider other information not available to either party. Our primary responsibilities are to our readers and to the scientific community at large, and in deciding how best to serve them, we must weigh the claims of each paper against the many others also under consideration.

We may go back to referees for further advice, particularly in cases where referees disagree with each other, or where the authors believe they have been misunderstood on points of fact. We therefore ask that referees should be willing to provide follow-up advice as requested. We are very aware, however, that referees are normally reluctant to be drawn into prolonged disputes, so we try to keep consultation to the minimum we judge necessary to provide a fair hearing for the authors.

When referees agree to review a paper, we consider this a commitment to review subsequent revisions as well. However, editors will not send resubmitted papers to the referees if it seems that the authors have not made a serious attempt to address the referees' criticisms.

We take referees' criticisms very seriously, and in particular, we are very reluctant to disregard technical criticisms. In cases where one referee alone opposes publication, we may consult with the other referees as to whether s/he is applying an unduly critical standard. We occasionally bring in additional referees to resolve disputes, but we prefer to avoid doing so unless there is a specific issue on which we feel a need for further advice.

SELECTING REFEREES

Referee selection is critical to the review process, and we base our choice on many factors, including expertise, reputation, specific recommendations and our own previous experience of a referee's characteristics. For instance, we avoid using referees who are chronically slow, careless, too harsh or too lenient.

We contact potential referees before sending them manuscripts to review. Referees should bear in mind that these messages contain confidential information, which should be treated as such.

WRITING THE REVIEW

The primary purpose of the review is to provide the editors with the information needed to reach a decision. It should also instruct the authors on how they can strengthen their paper to the point where it may be acceptable. As far as possible, a negative review should explain to the authors the weaknesses of their manuscript, so that rejected authors can understand the basis for the decision. This is secondary to the other functions, however, and referees should not feel obliged to provide detailed advice to authors of papers that do not meet the criteria for *Nature Chemical Biology*.

Confidential comments to the editor are welcome, but it is helpful if the main points are stated in the comments for transmission to the authors. The ideal review should answer the following questions:

- What are the major claims of the paper and how significant are they?
- Are the claims novel? If not, please identify the major papers that compromise novelty.
- Who will be interested and why?
- Does the paper stand out in some way from others in its field?
- Are the claims convincing? If not, what further evidence is needed?
- Are there other experiments that would strengthen the paper further? How much would they improve it, and how difficult are they likely to be?
- Are the claims appropriately discussed in the context of previous literature?
- If the manuscript is unacceptable in its present form, does the study seem sufficiently promising that the authors should be encouraged to consider a resubmission in the future?

OTHER QUESTIONS FOR REFEREES TO CONSIDER

For manuscripts that may merit further consideration, it is also helpful if referees can advise on the following points:

- Is the manuscript clearly written? If not, how could it be made more clear or accessible to nonspecialists? (It is unnecessary to provide detailed comments on grammar or spelling, which will be handled by our copy editor in the event of acceptance.)
- Could the manuscript be shortened (given the pressure on space in our pages)?
- Is the manuscript type appropriate for the presented data? Brief Communications report significant results of broad and immediate interest, whereas Letters and Articles represent more extensive studies.
- Have the authors done themselves justice without overselling their claims?
- Have they been fair in their treatment of previous literature?
- Have they provided sufficient methodological detail that the experiments could be reproduced?
- Are the reagents generally available?
- Should the authors be asked to provide supplementary methods or data on the *Nature Chemical Biology* web site? (Such data might include source code for modeling studies, detailed methods or mathematical derivations.)
- Have the authors adequately characterized the chemical compounds prepared and/or discussed in the manuscript?
- Are there any special ethical concerns arising from the use of animals or human subjects?

CONFIDENTIALITY

We ask referees to treat the review process as strictly confidential, and not to discuss the manuscript with anyone not directly involved in the review. It is acceptable to consult with laboratory colleagues, but please identify them to the editors. Consulting with experts from outside the referee's own laboratory may be acceptable, but please check with the editors before doing so, to avoid involving anyone who may have been excluded by the authors.

TIMING

Nature Chemical Biology is committed to rapid editorial decisions and publication, and we believe that an efficient editorial process is a valuable service both to our authors and to the scientific community as a whole. We therefore ask referees to respond promptly (normally within two weeks of receiving a manuscript, although this may be either longer or shorter by prior arrangement). If referees anticipate a longer delay, we ask them to let us know so that we can keep the authors informed and, where necessary, find alternative referees.

ANONYMITY

We do not release referees' identities to authors or to other referees, except when referees specifically ask to be identified. Unless they feel strongly, however, we prefer that referees should remain anonymous throughout the review process and beyond. Before revealing their identities, referees should consider the possibility that they may be asked to comment on the criticisms of other referees; identified referees may find it more difficult to be objective in such circumstances.
We ask referees not to identify themselves to authors without the editor's knowledge. If they wish to reveal their identities, this should be done via the editor.

We deplore any attempt by authors to confront referees or determine their identities. Our own policy is to neither confirm nor deny any speculation about referees' identities, and we encourage referees to consider adopting a similar policy.

EDITING REFEREES' REPORTS

As a matter of policy, we do not suppress referees' reports; any comments that were intended for the authors are transmitted, regardless of what we may think of the content. On rare occasions, we may edit a report to remove offensive language or comments that reveal confidential information about other matters. We ask referees to avoid saying anything that may cause needless offense; conversely, authors should recognize that criticisms are not necessarily unfair simply because they are expressed in robust language.

COMPETING INTERESTS

Our normal policy is to avoid referees whom the authors have excluded, for whatever reason. We also usually try to avoid referees who have recent or ongoing collaborations with the authors, who have commented on drafts of the manuscript, who are in direct competition to publish the same finding, who we know to have a history of dispute with the authors, or who have a financial interest in the outcome. It is not possible for the editors to know of all possible biases, however, so we ask referees to draw our attention to anything that might affect their review, and to decline to review in cases where they feel unable to be objective.

We recognize, however, that competing interests are not always clear-cut, and the above circumstances need not automatically undermine the validity of a report. Indeed, the people best qualified to evaluate a paper are often those closest to the field, and a skeptical attitude toward a particular claim does not mean that a referee cannot be persuaded by new evidence. We try to take these factors into account when weighing referees' reports.

Referees who have reviewed a paper for another journal might feel that it is unfair to the authors for them to re-review it for *Nature Chemical Biology*. We disagree; the fact that two journals have independently identified a particular person as well qualified to review a paper does not, in our view, decrease the validity of his or her opinion.

FEEDBACK TO REFEREES

When we ask referees to re-review a manuscript that has been revised in response to their criticisms, we normally send them copies of the other referees' comments. We routinely inform referees of our decisions and send copies of the other referees' reports by email.

We normally inform referees when a paper is accepted despite their negative recommendation. Referees who are overruled should realize that this does not imply any lack of confidence in their judgment; it is not uncommon for experts to disagree and in the absence of a consensus, the editors must still reach a decision one way or the other.

CONTACT THE JOURNAL

General editorial inquiries and correspondence

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