

Author Instructions

Welcome to the electronic manuscript submission website for *The Journal of Antibiotics*. The instructions below are structured so you can quickly and easily answer the following questions:

1. Is my manuscript suitable for *The Journal of Antibiotics*? ([Scope](#) + [Editorial Policy](#))
2. How do I format my manuscript for *The Journal of Antibiotics*? ([Format of Papers](#))
3. How do I submit my manuscript to *The Journal of Antibiotics*? ([Submission of Papers](#))

Aims and Scope

The Journal of Antibiotics seeks to promote research on antibiotics and related types of biologically active substances and publishes Articles, Review Articles, Brief Communication, Correspondence and other specially commissioned reports. *The Journal of Antibiotics* accepts papers on biochemical, chemical, microbiological and pharmacological studies. However, studies regarding human therapy do not fall under the journal's scope. Contributions regarding recently discovered antibiotics and biologically active microbial products are particularly encouraged. Topics of particular interest within the journal's scope include, but are not limited to, those listed below:

- Discovery of new antibiotics and related types of biologically active substances
- Production, isolation, characterization, structural elucidation, chemical synthesis and derivatization, biological activities, mechanisms of action, and structure-activity relationships of antibiotics and related types of biologically active substances
- Biosynthesis, bioconversion, taxonomy and genetic studies on producing microorganisms, as well as improvement of production of antibiotics and related types of biologically active substances
- Novel physical, chemical, biochemical, microbiological or pharmacological methods for detection, assay, determination, structural elucidation and evaluation of antibiotics and related types of biologically active substances
- Newly found properties, mechanisms of action and resistance-development of antibiotics and related types of biologically active substances

Prior to Submission

Editorial policy

A manuscript will be considered for publication on the understanding that all named authors have agreed to its submission and that if accepted it will not be later published in the same or similar form in any language without the consent of the publishers.

The editors reserve the right to reject manuscripts without review. Such rejections must be approved by the editor-in-chief, and are intended to alleviate unnecessary workload for the editorial board, as well as provide authors the opportunity to seek other publishing options as soon as possible. Articles that are selected for peer review will be reviewed by two or more referees.

To avoid unnecessary delays in the review process, please consider the following policies carefully before you submit your manuscript. Manuscripts that are not concise or do not conform to the conventions and standards of *The Journal of Antibiotics* will be returned to the authors for revision.

Conflicts of Interest

In the interests of transparency and to help reviewers assess any potential bias, *The Journal of Antibiotics* requires authors of original research papers to declare any competing commercial interests in relation to the submitted work. Referees are also asked to indicate any potential conflict they might have reviewing a particular paper.

Electronic manipulation of images

Digital image enhancement is acceptable practice, although it can result in the presentation of unrepresentative data as well as in the loss of meaningful signals. During manipulation of images a positive relationship between the original data and the resulting electronic image must be maintained. If a figure has been subjected to significant electronic manipulation, the specific nature of the enhancements must be noted in the figure legend or in the 'Materials and methods' section. The editors reserve the right to request original versions of figures from the authors of a paper under consideration.

Supplementary information for the editors and the reviewers

Any manuscripts under review or accepted for publication elsewhere should accompany the submission if they are relevant to its scientific assessment. Authors should also provide upon submission any kind of supplementary material that will aid the review process.

Manuscript types

The types of manuscripts accepted by the *The Journal of Antibiotics* are:

Article

Brief Communication

Correspondence

Review Article

Perspective

Format of Papers

Preparation of manuscripts

Manuscripts are considered with the understanding that they have not been published previously in print or electronic format and are not under consideration by another publication or electronic medium. Copies of possibly duplicative materials that have been previously published or are being considered elsewhere must be provided at the time of manuscript submission.

Cover Letter

The uploaded covering letter must state that the material has not been submitted for publication elsewhere while under consideration for *The Journal of Antibiotics*. Identify the name, full postal address, email address, and fax number, of corresponding author. The authors are free to offer suggestions of suitable expert reviewers. The layout of the paper should be as follows:

Article

Articles should describe studies that are of high scientific quality and that are of interest to the diverse readership of the journal. Such a manuscript should include an abstract, and appropriate experimental details to support the conclusions. Articles should be no more than 6000 words and should not normally include more than six display items (tables and/or figures). Page numbers and line numbers are needed on all pages.

A manuscript describing biological studies should include a title, an abstract, an introduction, materials and methods, results, and discussion sections.

A manuscript describing chemical studies should include a title, an abstract, description (introduction + results + discussion), and experimental sections.

A manuscripts reporting newly discovered substances should include a title, an abstract, an introduction, fermentation/production, taxonomy of producers, isolation/purification, physico-chemical and biological properties, and discussion sections. A separate experimental section is preferred. All reports on newly discovered substances should

show the fundamental and definitive data that support the novelty of the described substances.

Brief Communication

A Brief Communication should describe studies that fall short of the criteria for full research papers (e.g. a short experimental report limited by sample size or duration, a novel hypothesis or commentary) may be submitted as a Brief Communication. Experimental details are not required in a Brief Communication, but a general outline of experimental methods should be included. A Brief Communication should contain no more than 2000 words of text, a maximum of two display items (tables and/or figures) and a maximum of 20 references. Page numbers and line numbers are needed on all pages.

A Brief Communication should include a title, an abstract, and a description section. Apart from keywords there is no obligation to divide the text into sections. In all other respects, the directions for full papers should be followed.

Correspondence

A preliminary report of unusual urgency, significance and interest, whose subject may be republished in expanded form, may be submitted as a Correspondence. Such a manuscript should contain no more than 1000 words of text, one display item (figure or table) and a maximum of 10 references. Page numbers and line numbers are needed on all pages.

A Correspondence **does not** contain an abstract, and apart from keywords there is no obligation to divide the text into sections. In all other respects, the directions for Articles should be followed.

Review Article

A Review Article normally has a word limit of 5000 words including an abstract but excluding references, tables and figures. Page numbers and line numbers are needed on all pages. A number of Review Articles will be solicited by the editors; however, we also welcome timely, unsolicited Review Articles. Authors with proposals for Review Articles should present information concerning the proposed content and co-authors of their Review Articles to the editors prior to submission. Unless otherwise informed, all charges for color images will be the authors' responsibility.

Perspective

The journal invites submissions of a new type of article, Perspective, with the expectation of publishing no more than two Perspectives per issue. Perspective articles should be no more than 1500 words of text and not include more than 2 tables and/or 1 figure, although neither these nor experimental details are required. Up to 10 references are appropriate. Perspectives should be either historical or opinion articles which the author is specifically qualified to present, and which will be of particular interest to a significant portion of the journal's readership. The text should be preceded by a short Abstract of no more than three sentences, which cover the essence of the article. The first two sentences of text should supply an introduction and *raison d'être* for the topic. Any conclusion should be similarly brief.

Article section

Please make spelling consistent with current editions of either Webster's Dictionary or Oxford English Dictionary.

In general, manuscripts should be divided in to the following sections:

Title page

Abstract

Introduction

Materials and methods/ Experimental Procedure

Results

Discussion

Acknowledgements

References

Figure legends

Figures

Tables

Supplementary Information

Title page Title page, giving a concise but informative title, and the first and last names, and other initials, and affiliations (but not degrees) of all contributors (formerly called authors). The order in which the contributors are listed should be agreed amongst the investigators, and should indicate that the first listed made the greatest contribution to the paper. The running head is created automatically and does not need to be provided by the authors. Please note – the running head for a manuscript on all pages after the title page will be the shortened manuscript title followed by an ellipsis.

Up to seven keywords, which may or may not appear in the title, should be given in alphabetical order, below the abstract, each separated by a slash (/).

Abstract An abstract of not more than 250 words. The abstract should be comprehensible to readers before they have read the paper, and abbreviations and reference citations within the abstract should be avoided.

Introduction This should give a short, clear account of the background and reasons for undertaking the study. It should not be a review of the literature.

Materials and methods/ Experimental Procedure This section should contain sufficient detail so that all experimental procedures can be repeated by others, in conjunction with cited references. This section may be divided into subheadings to assist the reader. Names of products and manufacturers should be included only if alternative sources are deemed unsatisfactory. The source of experimental animals and microbial strains should be given. When large numbers of microbial strains and mutants are used in a study they should be listed in a table. The accession number of deposition in publicly accessible culture collections (e.g. American Type Culture Collection, Fermentation Research Institute of The Agency of Industrial Science & Technology, Japan, etc.) should be indicated. The composition of culture media may be described as follows:

1. the seed medium consisted of glucose 2.0%, glycerol 0.5%, Casamino Acids (Difco) 0.5%, K_2HPO_4 0.1% and $MgSO_4 \cdot H_2O$ 0.1%, pH 7.2.
2. the medium contained glucose 20g, soluble starch 20g, Pharmamedia (Traders Protein) 10g, K_2HPO_4 2.0g and $CaCO_3$ 3.0g in 1.0 liter tap water.

Instruments used, as well as standard techniques and procedures applied throughout the work, should appear in a paragraph at the beginning of the Materials or Experimental section. Novel experimental procedures should be described in detail, but published procedures should be referred to by literature citation of the original article and published modifications. The title of an experiment should include the chemical name and compound number (indicated by bold face numeral 1, 1a) of any product prepared; subsequently the compound should be identified by its number. Use of Standard Abbreviations (see the Nomenclature, Abbreviations and Units section), chemical formulas for simple compounds and compound numbers for more complex substances is encouraged. Molar equivalents of all reactants and percentage yields of products should be included.

Results The description of results should not simply reiterate data that appear in tables and figures and, likewise, the same data should not be displayed in both tables and figures. The results section should be concise and follow a logical sequence. If the paper describes a complex series of experiments, it is permissible to explain the protocol/experimental design before presenting the results. Do not discuss the results or draw any conclusions in this section. This section may be divided into subheadings to assist the reader. Large datasets or other cumbersome data pertinent to the manuscript may be submitted as supplementary information.

Discussion Do not recapitulate the results, but discuss their significance against the background of existing knowledge, and identify clearly those aspects that are novel. The final paragraph should highlight the main conclusion(s), and provide some indication of the direction future research should take. This section may be divided into subheadings to assist the reader. Results and Discussion may be combined.

Acknowledgements These should be brief, and should include sources of financial support, material (e.g. novel compounds, strains, etc.) not available commercially, personal assistance, advice from colleagues and gifts.

References

Authors are responsible for the accuracy of the references.

Only papers directly related to the article should be cited. Exhaustive lists should be avoided. References should follow the Vancouver format. In the text they should appear as numbers starting at one and at the end of the paper they

should be listed (double-spaced) in numerical order corresponding to the order of citation in the text. Where a reference is to appear next to a number in the text, for example following an equation, chemical formula or biological acronym, citations should be written as (ref. X) and not as superscript.

Example “detectable levels of endogenous Bcl-2 (ref. 3), as confirmed by western blot”

All authors should be listed for papers with up to five authors; for papers with six or more authors, the first author only should be listed, followed by et al. Abbreviations for titles of medical periodicals should conform to those used in the latest edition of Index Medicus. The first and last page numbers for each reference should be provided.

Only articles that have been published or accepted and waiting for publication (listed as ‘in press’ following digital object identifier number) should be in the reference list. Reference to ‘unpublished data’, ‘personal communications’ and database should not appear in the list but should be cited in the text parenthetically only (e.g. Smith A, 2007, unpublished data). Authors must obtain permission from the individual concerned to quote his/her unpublished work. Written proof for ‘personal communication’ and preprint for ‘in press’ may be requested for review. Abstracts and letters must be identified as such. Abstracts may be cited only if they are the sole sources, and must be identified in the reference list as ‘(Abstract)’. Journal names are italicized and abbreviated (with full stops) according to the List of Journals Indexed for MEDLINE (LJI).

Example of references:

Journal article:

Belkaid Y, Rouse BT. Natural regulatory T cells in infectious disease. *Nat Immunol.* 2005;6:353–60.

Journal article, e-pub ahead of print:

Bonin M, Pursche S, Bergeman T, Leopold T, Illmer T, Ehninger G, et al. F-ara-A pharmacokinetics during reduced-intensity conditioning therapy with fludarabine and busulfan. *Bone Marrow Transplant.* 2007. <https://doi.org/10.1038/sj.bmt.1705565>.

Journal article, in press:

Gallardo RL, Juneja HS, Gardner FH. Normal human marrow stromal cells induce clonal growth of human malignant T-lymphoblasts. *Int J Cell Cloning.* In press 1985.

Complete book:

Atkinson K, Champlin R, Ritz J, Fibbe W, Ljungman P, Brenner MK, editors. *Clinical Bone Marrow and Blood Stem Cell Transplantation.* 3rd ed. Cambridge: Cambridge University Press; 2004.

Chapter in book:

Coccia PF. Hematopoietic cell transplantation for osteopetrosis. In: Blume KG, Forman SJ, Appelbaum FR, editors. *Thomas' Hematopoietic Cell Transplantation.* 3rd ed. Malden: Blackwell Publishing Ltd; 2004. p. 1443–54.

Abstract:

Syrjala KL, Abrams JR, Storer B, Heiman JR. Prospective risk factors for five-year sexuality late effects in men and women after haematopoietic cell transplantation [abstract 107]. *Bone Marrow Transplant* 2006;37 Suppl 1:S4.

Figures These should be labeled sequentially as Figure 1, Figure 2, etc. **Each figure should be saved in a separate file**, numbered and titled and cited in the text. Figure legends should be printed, double spaced, on a separate sheet titled ‘Titles and legends to figures’. Figures should be referred to specifically in the text of the paper but should not be embedded within the text. The use of three-dimensional histograms is strongly discouraged when the addition of the third dimension gives no extra information. If a table or figure has been published before, the authors must obtain written permission to reproduce the material in both print and electronic formats from the copyright owner and submit it with the manuscript. This follows for quotes, illustrations and other materials taken from previously published works not in the public domain. The original source should be cited in the figure caption or table footnote. Colour figures can be reproduced if necessary, but the authors will be expected to contribute towards the cost of publication. Please note that colour figures can be reproduced on the web for FREE (see below for further details).

Number of colour illustrations		1	2	3	4	5	6	7+	
Cost	Rest of world	£573	£853	£1,133	£1,303	£1,473	£1,620	£146	per additional colour figure
	USA/Canada	\$1,144	\$1,705	\$2,264	\$2,606	\$2,946	\$3,238	\$292	

Color charges will not apply to authors who choose to pay an article processing charge to make their paper open access.

Chemical Structures The authors should draw chemical structures with ChemDraw™ software. Please apply settings in the ACS-1996 style sheet. Figures containing chemical structures should be submitted in a size appropriate for direct incorporation into the printed journal.

Colour on the web Authors who wish their articles to have FREE color figures on the web (only available in the HTML (full text) version of manuscripts) must supply separate files in the following format. These files should be submitted as supplementary information and authors are asked to mention they would like color figures on the web in their submission letter.

For single images:

Width	500 pixels (authors should select "constrain proportions", or equivalent instructions, to allow the application to set the correct height automatically.)
Resolution	125 dpi (dots per inch) or "Save for Web" if using Photoshop
Format	JPEG for photographs, GIF for line drawings or charts
File naming	Please save image with .jpg or .gif extension to ensure it can be read by all platforms and graphics packages.

For multi-images:

Width	900 pixels (authors should select "constrain proportions", or equivalent instructions, to allow the application to set the correct height automatically.)
Resolution	125 dpi (dots per inch) or "Save for Web" if using Photoshop
Format	JPEG for photographs, GIF for line drawings or charts
File naming	Please save image with .jpg or .gif extension to ensure it can be read by all platforms and graphics packages.

Tables These should be labeled sequentially as Table 1, Table 2, etc. **Each table should be saved in a separate file**, numbered and titled, and cited in the text. Reference to table footnotes should be made by means of Arabic numerals. Tables should not duplicate the content of the text. They should consist of at least two columns; columns should always have headings. Authors should ensure that the data in the tables are consistent with those cited in the relevant places in the text, totals add up correctly, and percentages have been calculated correctly. Unlike figures or images, tables may be embedded into the word processing software if necessary, or supplied as separate electronic files.

1D and 2D NMR spectral data of new compounds These should be submitted as Supplementary information.

Supplementary information Supplementary information is peer-reviewed material directly relevant to the conclusion of an article that cannot be included in the printed version owing to space or format constraints. It is posted on the journal's website and linked to the article when the article is published and may consist of data files, graphics, movies or extensive tables.

The printed article must be complete and self-explanatory without the supplementary information. Supplementary information enhances a reader's understanding of the paper but is not essential to that understanding.

Supplementary information must be supplied to the editorial office in its final form for peer review. On acceptance the final version of the peer reviewed supplementary information should be submitted with the accepted paper.

To ensure that the contents of the supplementary information files can be viewed by the editor(s), referees and readers, please also submit a 'read-me' file containing brief instructions on how to use the file.

The supplementary information may not be altered, nor new supplementary information added, after the paper has been accepted for publication.

Supplying supplementary information files

Authors should ensure that supplementary information is supplied in its FINAL format because it is not subedited and will appear online exactly as originally submitted. It cannot be altered, nor new supplementary information added, after the paper has been accepted for publication.

Please supply the supplementary information via eJP, the electronic manuscript submission and tracking system, in an acceptable file format (see below). Authors should:

- Include a text summary (no more than 50 words) to describe the contents of each file.
- Identify the types of files (file formats) submitted.
- Include the text eSupplementary information is available at (the journal's name) website at the end of the article and before the references.

Accepted file formats

- Quick Time files (.mov)
- Graphical image files (.gif)
- MPEG movie files (.mpg)
- JPEG image files (.jpg)
- Image tiff files (.tiff)
- Video avi (.avi)
- Sound files (.wav)
- Plain ASCII text (.txt)
- Acrobat files (.pdf)
- MS Word documents (.doc)
- Postscript files (.ps)
- MS Excel spreadsheet documents (.xls)
- PowerPoint (.ppt)
- Tex, Latex (.tex)

File sizes must be as small as possible, so that they can be downloaded quickly. Images should not exceed 640 x 480 pixels (9 x 6.8 inches at 72 pixels per inch) but we would recommend 480 x 360 pixels as the maximum frame size for movies. We would also recommend a frame rate of 15 frames per second. If applicable to the presentation of the supplementary information, use a 256-colour palette. Please consider the use of lower specification for all of these points if the supplementary information can still be represented clearly. Our recommended maximum data rate is 150 KB/s.

The number of files should be limited to eight, and the total file size should not exceed 8 MB. Individual files should not exceed 1 MB. Please seek advice from the editorial office before sending files larger than our maximum size to avoid delays in publication.

Further questions about the submission or preparation of supplementary information should be directed to the editorial office.

House Style

As the electronic submission will provide the basic material for typesetting, it is important that papers are prepared in the general editorial style of the journal.

1. See the artwork guidelines for information on labeling of figures
2. Do not make lines thinner than 1pt (0.36mm)
3. Use a coarse hatching pattern rather than shading for tints in graphs
4. Colour should be distinct when being used as an identifying tool
5. Use SI units throughout
6. Spaces, not commas, should be used to separate thousands
7. Abbreviations should be preceded by the words for which they stand in the first instance of use
8. Text should be double spaced with a wide margin

Conventions

In general, the journal follows conventions given in *Scientific Style and Format: The CBE Manual for Authors, Editors and Publishers* (1994) Cambridge University Press, Cambridge, UK, 6th edn. Please follow *Chemical Abstracts* and its indexes for chemical names. For guidance in the use of biochemical terminology follow the recommendations issued by the IUPAC-IUBMB Joint Commission on Biochemical Nomenclature. In general, genotypes should be indicated in italics; phenotypes should not be italicized.

X-Ray Crystallographic Data

Crystallographic data for small molecules should be submitted to the Cambridge Structural Database (<http://www.ccdc.cam.ac.uk/>) and the deposition number referenced appropriately in the manuscript. Full access must be provided on publication. For detailed information on data deposition please refer to the website <http://www.ccdc.cam.ac.uk/products/csd/deposit/>

Gene Sequences

All gene sequence data described are requested to be deposited, before submission of the draft manuscript, to a publicly accessible database. i.e., GenBank, EMBL or DDBJ. The accession number(s) of the gene sequence data should be indicated in the text.

Nomenclature of Microorganisms

The binary name, consisting of a generic name and a specific epithet (e.g. *Streptomyces griseus*) should be spelled out in italics for all microorganisms the first time they are used in the manuscript. Names of genera and higher categories may be used alone (e.g. *Streptomyces*, *Streptomycetaceae*), but specific and subspecific epithets may not. Subsequently, the generic name may be abbreviated to the initial capital letter (e.g. *S. griseus*) if the context allows the meaning to be clear.

In the tables and figure-legends, the generic names of microorganisms belonging to the same genus as the spelled out strain may be abbreviated as follows:

1)

Strain No	MIC ($\mu\text{g ml}^{-1}$)
<i>Staphylococcus aureus</i> ATCC 6538 P	0.01
<i>S. epidermidis</i> ATCC 12228	0.39
<i>Streptococcus pyogenes</i> S-23	0.10
<i>S. pneumoniae</i> Type I	0.05
<i>S. pneumoniae</i> Type II	12.5
<i>Streptococcus</i> sp. MK 1001	0.78
<i>Enterococcus faecalis</i> ATCC 10541	100

2)

○	<i>Proteus mirabilis</i> MB-838
△	<i>P. vulgaris</i> 345-57G
●	<i>Proteus</i> sp. A-1

In general, microorganisms should be designated by the name appearing in the 8th Edition of *Bergey's Manual of Determinative Bacteriology*, *Ainsworth & Bisby's Dictionary of the Fungi and The Yeasts, a Taxonomic Study*, 2nd edn (ed. J. Lodder, North-Holland Publishing Co., Amsterdam, 1970). A new scientific name proposed for a microorganism should follow the latest versions of *International Code of Nomenclature of Bacteria (Int. J. Syst. Bacteriol)* and the

International Code of Botanical Nomenclature.

Descriptions of Actinomycetes

All authors of papers describing new actinomycetes are requested to adhere to standardized methods for their characterization and to cite a depository number for the culture being described.

Generic Determination: Morphology, physiology, chemical properties according to Lechevalier, 1981.

Species Determination: Follow guidelines in Lechevalier, 1981. New methods may be introduced.

Media: All aerobic actinomycetes can be grown and characterized on the ISP media (Shirling & Gottlieb, 1966). These may be supplemented with specific media cited in generic descriptions.

Availability: All cultures described should be publicly available from a recognized culture collection.

[References]

Lechevalier, H. A. The actinomycetes III. A practical guide to generic identification of actinomycetes. In *Bergey's Manual Systematic Bacteriology* Vol. 4 (ed. Williams, S. T. et al.) 2344-7 (Williams & Wilkins, 1989).

Shirling, E. B. & Gottlieb, D. Methods for characterization of *Streptomyces* species. *Int. J. Syst. Bacteriol.* 16, 313-40 (1966).

Manuscripts dealing with studies on new genera, new species or new subspecies of actinomycetes will be reviewed by an ad-hoc voluntary subcommittee of the Society for Actinomycetes, Japan.

Genetic Nomenclature

1. Phenotypic designations should be used when mutant loci have not been identified. In general, three-letter symbols that are not italicized with the first letter of the symbol capitalized (e.g. Thr) are used. Phenotypic designations of symbols should be defined. It is preferable to use arabic or roman numerals to identify a series of related phenotypes (e.g. Thr², Thr^{II}). Superscript letters may be used for further description of phenotype (e.g. Thr⁻, Str¹).
2. Genotypic designations are similarly indicated by three-letter locus symbols, but use lowercase italics with an italicized capital letter and arabic numeral to indicate a series of loci (e.g. *thrA*, *thrA2*). The recommended nomenclature for genetic loci of *Escherichia coli* (*Microbiol. Rev.* 44, 1-56, 1980), *Streptomyces coelicolor* (*Bacteriol. Rev.* 37, 371-405, 1973) and *Neurospora crassa* (*Microbiol. Rev.* 46, 426-570, 1982) may be applicable to other microorganisms.

The recommended nomenclature of plasmids (*Bacteriol. Rev.* 40, 168-89, 1976) may be applicable for plasmids, including recombinant plasmids constructed in vitro.

Chemical and Biochemical Nomenclature

Authors should attempt to use simple, unambiguous, nomenclature for new compounds and to avoid coining new names if the compound is a straightforward analog of a known natural product.

Names should conform to the IUPAC revised recommendations on nomenclature for Section F: Natural Products and Related Compounds, as published in *Pure and Applied Chemistry* (Vol. 71, No. 4, 587-643, 1999). The conventions will be those used most recently in *The Journal of Antibiotics* by other scientists publishing on related compounds. Typically they rely on generic names found in 'International Nonproprietary Names' (INN) by the World Health Organization, 'United States Adopted Names' (USAN), 'Japan Accepted Names' (JAN) or 'British Approved Names' (BAN).

Symbols, code names, trade names, and proprietary names are to be avoided. Although all previous synonyms should be referred to once in the introduction or as a footnote, under no other circumstance should multiple naming conventions be used within the text of the manuscript.

For the use of biochemical terminology, consult the International Union of Biochemistry: *Biochemical Nomenclature and Related Documents* (The Biochemical Society, London, 1978), and the most recent edition of the *Handbook of Biochemistry and Molecular Biology* (CRC Press Inc.). For enzymes, use the recommended names as assigned by the 'Nomenclature Committee of the International Union of Biochemistry' as described in *Enzyme Nomenclature 1978* (Academic Press Inc., 1979). Use the EC number where it has been assigned.

If the reported antibiotic is similar to, or identical with, a particular antibiotic previously reported in a published patent or

in the published proceedings or abstracts of a scientific meeting, it is the responsibility of the authors to comment accordingly. Should the authors fail to do so, the Editorial Board reserves the right to make such comment at the end of the published manuscript under a heading Editorial Comment.

Manuscripts which include nomenclature of a new substance or structure determination/drawing will be reviewed by an ad-hoc subcommittee.

Abbreviations

It is strongly recommended that all abbreviations except those listed below be defined with their first appearance. Do not use abbreviations that do not occur at least five times in the text (including tables and figure legends). Abbreviations should be used primarily as an aid to the readers, rather than as a convenience to the authors, and therefore their use should be limited.

Standard chemical symbols and symbols for trivial names may be used. However, abbreviations of antibiotics and pharmaceutical drugs should be avoided, because different usage of abbreviations for a single agent has often caused confusion. If, on occasion, a non-standardized abbreviation is used, it will be accepted under the following conditions: (1) It must be defined at the first appearance, (2) it must be clear and unambiguous in meaning, and (3) it must contribute to ease of assimilation by the readers.

Please see [PDF document of the full list of abbreviations.](#)

Numerical Description and Units

Try to restrict the use of abbreviations to SI symbols and those recommended by the IUPAC. Abbreviations should be defined in brackets after their first mention in the text, not in a list of abbreviations. Standard units of measurements (SI symbols) and symbols of chemical elements may be used without definition in the body of the paper. Abbreviations of standard biochemical compounds, e.g. ATP, DNA, nucleotides in nucleic acids, and amino acids in proteins, need not be defined.

Metric system units should be used for all quantities of length, weight, volume, area and pressure. The International System of Units (M for 10^6 , k for 10^3 , m for 10^{-3} , μ for 10^{-6} , n for 10^{-9} and p for 10^{-12}) is used by preference, and each unit should be abbreviated as follows:

MHz; km, m, cm, mm, μm , nm; kg, g, mg, μg , ng, pg;

l, ml, μl ; m^2 , cm^2 , mm^2 ; m^3 , cm^3 , mm^3 ; etc.

Percent, %, may be used but avoid the use of mg%. Use $\mu\text{g ml}^{-1}$ or $\mu\text{g g}^{-1}$ in place of the ambiguous p.p.m. (p.p.m. may be used only for NMR studies). Temperature should be indicated by degree centigrade, $^{\circ}\text{C}$, and pressure by torr, mm Hg or kg cm^{-2} .

Convert numerals from any other measuring system (e.g. 2-inch \times 1-foot column, 20-gallon jar fermentor, aeration at 2 cfm, 5 pounds/ square feet or 10 psi, cultured at 100 $^{\circ}\text{F}$, etc.) into metric system units.

Concentrations of compounds should be expressed as follows:

M NaCl, 1/15 M NaOH, 1.5 N HCl, 1.0 mM ATP, 1.0 mmol ml^{-1} , 3.5 mol kg^{-1} , 1.0 % (w/v) NaHCO_3 , 50% MeOH, 20 mg ml^{-1} ampicillin trihydrate, etc. Ratio and dilution should be expressed as follows:

Ratio and dilution should be expressed as follows:

0.2 N HCl - MeOH (5 : 1); EtOH - CHCl_3 , 1 : 2 (v/v); BuOH - AcOH - H_2O , 4 : 1 : 1 (in volume); 1/10 vol of EtOH, concd to 1/20 vol, etc.

Description of Physico-chemical Properties

1. Analysis;

Analysis Calculated for $\text{C}_{16}\text{H}_{18}\text{N}_2\text{O}_9\text{S}_2$	C 43.04, H 4.06, N 6.27, S 14.36.
Found:	C 43.15, H 4.16, N 6.12, S 14.21.

- Mass Spectrometry; MS m/z 426 (M, C₂₂H₁₈O₉), 408 (M-H₂O), 397 (M-CH₂CH₃). D-MS m/z 405 (M+H)⁺. SI-MS m/z 325 (M-Na)⁻
- Ultraviolet Spectrometry; UV $\lambda_{\text{max}}^{\text{MeOH}}$ nm ($E_{1\text{cm}}^{1\%}$ 242 (465), 290 (sh, 110); UV $\lambda_{\text{max}}^{0.1\text{N HCl}}$ nm (ϵ) 262 (9,500). sh=Shoulder.
- Infrared Spectroscopy; IR ν_{max} (Nujol) cm⁻¹ 3300, 1635 (s, br, C=O); IR (KBr) cm⁻¹ 1784 (s, β -lactam C=O). IR (KBr) $\nu_{\text{C=O}}$ 1784 cm⁻¹.
- Optical Rotation; $[\alpha]_{\text{D}}^{25} \pm 195.5$ (c 0.1, MeOH).
- Nuclear Magnetic Resonance; ¹H NMR (100 MHz, DMSO-*d*₆) δ 6.72 (2H, br s, 2-NH₂), 5.87 (1H, d, $J_{1,2}=6.8$ Hz, 1'-H), 2.23 (2H, br s, CH₂COCH). ¹³C NMR (25.1 MHz, CDCl₃) δ 170.8 (C-1'), 169.9 (C-2), 74.2, 39.5. Multiplicity of signals may be abbreviated as follows: s = singlet, d = doublet, dd = doublet of doublets, t = triplet, q = quartet, ABq = AB quartet, m = multiplet, br = broad.

Description of Isotopically Labeled Compounds

For simple molecules, isotopic labeling is indicated in the chemical formula (e.g. ¹⁴CO₂, ³H₂O, Mg³⁵SO₄). For specific chemicals, the symbol for the isotope introduced is placed in square brackets directly preceding the part of the name that describes the labeled entity. The following examples show the correct usage: [1-¹⁴C]acetic acid, L-[methyl-¹⁴C]methionine, [γ -³²P]ATP, UDP-[U-¹⁴C]glucose.

The radioactivity should be reported by d.p.m., and the specific activity of the labeled compound should be shown; 1.0 $\mu\text{Ci mmol}^{-1}$, 0.5 mCi mM⁻¹, 10 $\mu\text{Ci mg}^{-1}$, 0.7 kBq ml⁻¹.

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