

These instructions are also available in HTML format
<http://mic.sgmjournals.org/misc/ifora.shtml>

Submission of papers for publication

Papers must be submitted via *Microbiology's* online submission system. Papers must not be submitted by e-mail, and hard-copy submissions are no longer accepted. See <http://intl-mic.sgmjournals.org/misc/subonline.shtml> for details of the online submission procedure.

Before submitting, authors should use the following checklist to ensure that they have complied with all the relevant points. All the authors must have agreed to the submission and have agreed that the corresponding author may act on their behalf throughout the review and publication process.

- Authors must provide the names and contact details of at least three (and not more than five) potential reviewers.
- Permission must be obtained for any citations of personal communications or unpublished results; this should be confirmed in the covering letter.
- Continuous line numbering should be used throughout the manuscript, to facilitate online reviewing.
- The contents category for the paper (see the list under *Scope* below) should be indicated on the title page (it should also be entered in the 'Contents Category' field of the online submission form).
- Any supplementary material associated with the paper should be uploaded as supplementary file(s) at the time of submission, for reviewing with the paper.
- If papers that have been accepted for publication but not yet published are cited in the manuscript, PDFs of these must also be uploaded as supplementary file(s).

Queries or comments about online submission should be sent via the email links from the submission site.

General enquiries should be sent to the *Microbiology* Editorial Office, SGM, Marlborough House, Basingstoke Road, Spencers Wood, Reading RG7 1AG, UK
 Tel: +44 (0)118 988 1804. Fax: +44 (0)118 988 1834 (or 5656). e-mail: micro@sgm.ac.uk

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Scope

Microbiology publishes high-quality research papers, reviews and mini-reviews on all aspects of microbiology, with a strong emphasis on fundamental studies on the biology of prokaryotic and eukaryotic micro-organisms; papers elucidating molecular mechanisms are particularly welcome. Papers published must make an original and significant contribution to the field and should be of interest to a general readership. Papers that are preliminary, derivative or merely descriptive, or those that are technically competent but do not make a significant advance in the biology of microbes, are not appropriate for *Microbiology* and may be rejected without review.

Theoretical and predictive papers are considered for publication provided that significant and novel conclusions are drawn or hypotheses formulated. Papers on viruses of bacteria and eukaryotic microbes will be considered, but not those on viruses of higher organisms. Authors submitting papers on viruses should explain in a covering letter why their paper is more appropriate for *Microbiology* than for a virology journal.

Papers should be written concisely, in English, and contain only figures and tables that are essential for conveying the results. Short Communications as such are not published, but there is in principle no lower limit on the length of papers, provided that they are of an appropriate scientific standard. Note that a length charge is applied for publication of papers over a certain length (see below).

Research papers are listed under the subject headings shown below. Examples of topics covered by these headings are indicated. Clearly not every topic can be listed; as noted above, the journal welcomes papers on all aspects of microbiology, from the molecular to the systems level.

- **Cell and Molecular Biology of Microbes**
(*gene expression and regulation, signalling and communication, stress responses, secretion, differentiation and development, cell cycles, ultrastructure*)
- **Environmental and Evolutionary Microbiology**
(*microbial ecology, non-pathogenic plant-microbe interactions, population genetics, community structures and interactions, biodegradation and bioremediation, biodiversity and evolution*)
- **Genes and Genomes**
(*systems biology, genomics and proteomics, metabolomics, metagenomics, synthetic microbiology, bioinformatics, gene transfer, chromosomes and extrachromosomal DNA*)
- **Microbial Pathogenicity**
(*mechanisms of human, animal and plant pathogenesis, virulence and virulence factors, cellular microbiology, infections and immunity, antibiotic-resistance mechanisms*)
- **Physiology and Biochemistry**
(*metabolic pathways and their regulation, bioenergetics and transport, synthesis of macromolecules*)

Authors should indicate the appropriate heading for their paper on the title page and in the Contents Category field of the online submission form.

Reviews and mini-reviews are also published. Authors interested in submitting one should contact the Reviews Editor via the Editorial Office (micro@sgm.ac.uk). Guidelines on presentation of reviews and minireviews can be downloaded from <http://mic.sgmjournals.org/misc/ReviewGuidelines.pdf>

Meeting reports. Submission of short reports of recent meetings of interest to microbiologists is welcomed. See the Meeting Reports guidelines at <http://mic.sgmjournals.org/misc/MeetingReports.pdf> for more information.

Microbiology Comment provides a forum for discussion of scientific issues arising directly from papers published in *Microbiology*. The authors of papers under discussion will be offered an opportunity to respond. Other types of article are no longer considered for publication under the *Microbiology Comment* heading. Contributions to *Microbiology Comment* should be brief and to the point. A single small table or figure may be included, as may a limited number of references. A short title (fewer than 50 characters) should be provided. Approval for publication rests with the Editor-in-Chief, who reserves the right to edit articles. To submit a *Comment* article, select 'Comment Article' in the Category field of the online submission form.

Conditions of publication

Originality, authorship and copyright. Papers submitted must report work that has not been published previously (including publication on the World Wide Web) and is not under consideration for publication elsewhere. All the authors must have agreed to the submission, and to the order of their names on the title page. They must also have agreed that the corresponding author may act on their behalf throughout the editorial review and publication process. The corresponding author is responsible for obtaining such agreement. Requests for changes in authorship after submission must be accompanied by signed agreements from all the parties involved. If the paper is accepted for publication in *Microbiology*, the authors (or other copyright holder) must transfer to the Society for General Microbiology the copyright (including electronic reproduction rights) of the paper where it exists, which will then not be published elsewhere in the same form, in any language or medium, without the consent of the Society.

Online publication ahead of print. *Microbiology* has a Papers in Press feature where accepted manuscripts appear online in an unedited format before they are scheduled to appear in print. Unless the authors inform the Editorial Office staff to the contrary (e-mail submit.mic@sgm.ac.uk), it will be assumed that they agree to their manuscript being used in this way. The PDF used for peer review, and the manuscript title, subject category and author details that authors have entered into the online submission site will be used to generate the Papers in Press record.

Self-archiving. Authors may mount a PDF file of their accepted manuscript on their own or their institution's website or on a centrally organized repository (such as PubMed Central), provided that the PDF is not publicly available until 12 months after online publication in the journal. The PDF file must correspond exactly to the accepted version of the manuscript. Authors may not mount a PDF of the final published version (with the exception indicated below), although they should include a link to the published version. Author manuscripts must not be mounted less than 12 months after publication in the online version of *Microbiology* (again with the exception indicated below); nor must they be mounted on a server for the purpose of commercial sale or systematic external distribution by a third party (e.g. via an e-print server).

Details of the policy of the SGM towards depositing accepted manuscripts in PubMed Central and other repositories can be found at http://mic.sgmjournals.org/misc/sgm_nih_policy.dtl

Authors who pay for immediate open access through our Open Option scheme (see http://mic.sgmjournals.org/misc/open_option.dtl) may deposit the published PDF file of their paper in PubMed Central (or other repositories) at the time of publication with no delay to public access, in addition to their paper being freely available to all without a subscription immediately on online publication.

Length charges. In recent years, *Microbiology* has received an increased number of submissions and the number of pages published each year has grown, despite the application of more stringent acceptability criteria. The average length of published papers has also increased. To encourage authors to be concise, and as a contribution to the extra cost of publishing longer papers, the journal now charges authors a fee to publish papers, other than reviews, that contain more than 4500 words (including the figure and table legends and any appendices, but not the abstract or references) and/or more than 8 figures and tables combined. The charge, assessed on the accepted manuscript, is currently £100 per 500 words or part thereof over 4500 and £100 per figure or table over 8 (plus VAT where applicable).

Papers will continue to incur no colour charges in cases where the use of colour is judged to be necessary for scientific reasons, and no charges are levied on online-only supplementary material.

Editorial policy

Editorial handling of papers. Submitted papers are assigned by the Editorial Office to an Editor or Associate Editor (AE) with appropriate expertise, who is responsible for making the decision on acceptability. Before sending a paper to reviewers, the AE or Editor will pre-screen the paper to check that it fulfils certain basic criteria that would make it potentially suitable for *Microbiology*: nature of the study, quantity and quality of data, general conclusions, and standard of presentation. If the paper

does not fulfil these criteria, it may be rejected at this stage, so that the authors can submit it to a more appropriate journal without further delay. Papers that pass the pre-screening stage will normally be sent to at least one independent reviewer, but the AE or Editor may also act as a reviewer him/herself. The use of reviewers suggested by authors is at the discretion of the Editor or AE.

If revision of a paper is requested, the revised version should be returned within the time specified. If more time is required, the author should contact the Editorial Office, AE or Editor to agree a new deadline. If revision is delayed by the author without prior agreement, the revised version will be treated as a new submission.

Policy on availability of strains and other materials.

Authors of papers published in *Microbiology* are expected to make biological materials, such as strains, plasmids and antibodies, that are described for the first time in the paper available to bona fide researchers in reasonable quantities and at reasonable cost, for non-commercial purposes. Supply of such materials must conform to current local and national laws and regulations.

Policy on materials and results obtained from outside the authors' laboratory.

If a paper includes results that were not obtained by the authors' own experiments (e.g. production of antibodies, identification of strains) this must be explicitly stated, and appropriate acknowledgement be included where appropriate.

Ethics of human and animal experimentation. Papers describing any experimental work with humans should include a statement that the Ethical Committee of the institution in which the work was done has approved it, and that the subjects gave informed consent to the work.

Experiments with animals should be done in accordance with the legal requirements of the relevant local or national authority. Procedures should be such that experimental animals do not suffer unnecessarily. Papers should include details of the procedures and of anaesthetics used.

The Editors will not accept papers where the ethical aspects are, in their opinion, open to doubt.

Policy on scientific publication, security and censorship.

The policy of the Society for General Microbiology, as publisher, is given at <http://www.sgm.ac.uk/pubs/policy.cfm>

Page charges and offprints. There are no page charges. Authors receive 25 offprints free; further copies may be purchased in multiples of 25.

Proof corrections. Only typographical and absolutely essential factual changes may be made. Authors may be charged for the correction of non-typographical errors.

Cover illustrations. The Editors welcome the submission of pictures for possible use on the front cover, and will pay £75 towards expenses for each one used. Pictures need not be linked with a paper in the journal. A picture that is linked with a paper must not be the same as a figure in the paper.

Form of papers submitted for publication

General. Please refer to the guidelines at <http://mic.sgmjournals.org/misc/subonline.shtml> for details of online submission.

The paper must be written in clear and concise English, normally in the past tense, and should normally comprise: (a) Title page; (b) Summary; (c) Introduction; (d) Methods; (e) Results; (f) Discussion, with Conclusions if appropriate; (g) Acknowledgements; (h) References; (i) Tables; (j) Figures, with legends. A Theory section and Appendices may be included. Where appropriate, the Results and Discussion may be combined. Figures and tables should only be used to illustrate points that cannot easily be described in the text. Note that a length charge (see above) is applied to papers with more than 8 figures and tables combined. Authors should consult a recent issue of the journal for the layout of headings, tables, etc. Guidance on the presentation of individual sections is given below.

Papers that do not meet acceptable standards of clarity, presentation or conciseness may be returned to the authors without editorial review.

Title page. This should carry the following information.

- The title of the paper. A good title is very important. It will attract readers and facilitate retrieval by online searches, thereby helping to maximize citations. The title should include topical keywords and allude to the interesting conclusions of the paper. A title that emphasizes the main conclusions, or poses a question, has more impact than one that just describes the nature of the study.
- A short 'running title', of not more than 55 characters (including spaces), for use as a headline.
- The contents category (see the list under **Scope** on p. 2).
- The names of the authors. The author for correspondence must be clearly indicated.
- The name and address of the laboratory or laboratories where the work was done, and present addresses of authors who have since moved.
- An e-mail address, fax and telephone number for the corresponding author.
- If appropriate, a footnote defining any non-standard abbreviations. A list of abbreviations not requiring definition is given in the At-a-glance Style Guide on p. 8 (also available at <http://mic.sgmjournals.org/misc/style.shtml>).

Summary. The summary will be read by more people than the full paper. It must therefore be clear and comprehensible in its own right. References should not be cited, and any abbreviations used must be defined. The summary should if possible introduce the subject in the first sentence and present the main conclusion in the last sentence: when someone is skimming a block of text, the first and last sentences receive the most attention.

Introduction. This should state the objectives of the work, but should not contain a detailed summary of the results. Authors should not assume that all readers will know why an area is worth studying. They should briefly make this clear.

Methods. Sufficient detail should be provided to allow the work to be repeated. The suppliers of chemicals and equipment should be indicated if this may affect the results. Suppliers' addresses should not be given unless this is considered essential for a particular reason.

Results. There should be sufficient subheadings to make clear how the work was organized, what the key questions being addressed were, how one experiment led to another, and perhaps what conclusions were reached. A reader should gain a clear picture of the work from the subheadings.

Reproducibility of results. This should be indicated. It should be stated how many times an experiment was repeated and whether means or representative results are shown. Variability should be indicated statistically wherever possible; when error terms are given, the measure of dispersion and the number of observations should be stated. Statistical techniques used must be specified, and where necessary they should be described fully or a reference given. If results are expressed as percentages, the absolute value corresponding to 100% should be stated.

Discussion. This should not recapitulate the results, and should not be too long. Excessive discussion of few facts often gives an impression of poor science. Subheadings should be used where appropriate, to highlight the points under discussion. It may be helpful to list the main conclusions at the end. A combined Results and Discussion section is encouraged where appropriate.

References. References in the text should be cited as follows: two authors, Smith & Jones (1996) or (Smith & Jones, 1996); three or more authors, Smith *et al.* (1996) or (Smith *et al.*, 1996). References to papers by the same author(s) in the same year should be distinguished in the text and the reference list by the letters a, b, etc. (e.g. 1996a or 1996a, b).

The style of references in the reference list should follow the examples shown in the At-a-glance Style Guide on p. 8. Authors who use EndNote or Reference Manager can download the style for *Microbiology* via the following links: http://mic.sgmjournals.org/misc/EndNote_Microbiology.ens http://mic.sgmjournals.org/misc/Ref_Manager_Microbiology.os Please note the following style points.

References in the list must be given in alphabetical order, except for papers with three or more authors, which should be listed in chronological order after any other papers by the first author. References must include the title of the paper as well as both initial and final page numbers. Titles of journals should be abbreviated according to the system used by MEDLINE (<http://www.ncbi.nlm.nih.gov/PubMed/>). No stops should be used after abbreviated words. References to books should include year of publication, title (in full), edition, editor(s) (if any), town of publication and publisher, in that order. When the reference is to a particular part of a book, the inclusive page numbers and, if appropriate, chapter title must be given.

Only papers accepted for publication but not yet published may be cited as 'in press' in the reference list, and the reference must include the name of the journal. Relevant papers cited as 'in press' should be included as supplementary files with the online submission. References to papers not yet accepted should be cited in the text as unpublished results, giving the surname(s) and initials of all the author(s). Such papers should not appear in the list of references.

Permission must be obtained for any personal communications or citations of other workers' unpublished results.

Tables. These should be broadly comprehensible without reference to the text, but it is not necessary to repeat detailed descriptions of methods, etc. The symbols * † ‡ § || ¶ # should be used for footnotes, rather than superscript letters or numbers. When results are expressed as percentages, the absolute value(s) corresponding to 100 % must be stated. Statements of reproducibility should be included (see **Reproducibility of results** above).

Figures. This section outlines journal policy on figures. For advice on preparing figures for inclusion as a PDF for submission, and on the source files needed for publication, please refer to <http://mic.sgmjournals.org/misc/subonline.shtml>

Figures should not be used to present results that can be described by a brief statement in the text. The points outlined above for tables regarding comprehensibility, relative values and reproducibility also apply to figures and their legends.

Line drawings. These should be of a quality suitable for direct reproduction. The maximum printed size, including lettering and legends, is 176×235 mm. Line thicknesses and symbol sizes should be sufficient to allow for reduction. The preferred symbols for graphs are ○, ●, □, ■, △, ▲, ▽, ▼. Where possible, the same symbol should be used for the same quantity in different figures.

Bar diagrams. Simple bar diagrams reporting only a few values are usually unnecessary; the data can normally be given in a few lines of text. It is editorial policy not to publish bar diagrams with 'three-dimensional' bars unless there is a specific justification for their use.

Sequence data. Figures showing full gene sequences are not published, but selected sequence data, with appropriate annotation, may be published where there is justification (see p. 7 for details). The layout of sequence figures should be designed to fit either the full width of the page (176 mm) or a single column (84 mm). For adequate legibility, the height of the characters should be not less than 1.5–2 mm (or 6–8 point). For printing at full page width with this size of type, a layout with 80–100 nucleotides per line is appropriate (or 60–70 if there are spaces between the codons). For a single-column layout, 50–60 nucleotides per line is about right. The spacing between the lines of sequence should be as close as is consistent with clarity. Note that sequence data must be submitted to GenBank, EMBL or DDBJ (see p. 7).

Photographs (halftones). Authors are advised to supply halftones intended for publication as TIFF or EPS files. The resolution should be at least 300 d.p.i. at final size (approx. 1000 pixels wide for a single-column figure; approx. 2000 pixels wide for a double-column figure). For photomicrographs, magnification should be shown by a scale bar.

Colour figures. These are published at no cost to the author, *if the Editors believe they are essential to show the results*. The printers can produce black-and-white figures from colour images if necessary, but this is not recommended.

Colour figures should preferably be supplied as TIFF or EPS files. The resolution should be at least 300 d.p.i. at final size (approx. 1000 pixels wide for a single-column figure; approx. 2000 pixels wide for a double-column figure). The files should preferably be generated as CMYK (4-colour) images, not RGB. The accurate reproduction of colours from RGB files cannot be guaranteed when the file is converted to CMYK for 4-colour printing.

Supplementary material. Material associated with a paper but not suitable for print publication (e.g. large data sets, extensive sequence alignments, 3D structures, videos) can be linked to the paper in *Microbiology Online*. This material must be submitted at the same time as the main paper and will be reviewed along with it; it will not be published unless it significantly enhances the paper. The Editors may sometimes suggest that figures or tables that the author has included within a paper should be converted into supplementary data.

The parent paper should contain a reference to the supplementary material. Supplementary figures and tables should be named Fig. S1, Table S1, etc., and be referred to accordingly in the paper.

A short text description must be supplied for each supplementary data item. This can be just a heading, or a more detailed explanation, as appropriate.

File types and formatting. Almost any file type can be used for supplementary data. The file type(s) should be indicated by the author on submission. Authors should try to avoid files that require unusual software, because these will be of limited use to readers. Very large files (more than about 2 Mb) should also be avoided where possible because they may be a nuisance to download.

Supplementary data consisting of tables or descriptive material and submitted as word-processor text will normally be converted to one or more PDF files by the editorial staff. Stylistic editing may be applied before conversion. Authors may alternatively prepare their own PDF files of the data before submission.

Quantities, units and symbols

SI units (see <http://physics.nist.gov/cuu/Units/index.html>) should be used.

Chemical and biochemical nomenclature

Authors should follow the recommendations of IUPAC for chemical nomenclature, and those of the

Nomenclature Committee of IUBMB and the IUPAC–IUBMB Joint Commission on Biochemical Nomenclature for biochemical nomenclature (see <http://www.chem.qmul.ac.uk/iupac/jcfn>).

Absorbance, optical density and attenuation

The term absorbance, A , should be used for the quantity $\log(I_0/I)$ in UV and visible absorption spectrophotometry of samples in which there is negligible scattering or reflection of light. If scattering is considerable, as in spectrophotometric measurements of microbial biomass, the term optical density, OD (or attenuation, D), should be used; the path length of the cell or cuvette, and the make and model of the spectrophotometer, must be specified, because optical design dramatically influences such measurements. If a sample is diluted prior to measuring optical density, the dilution and the diluent should be stated. Readings obtained with instruments designed for turbid samples, such as nephelometers or Klett meters, should be reported in appropriate units. Whenever A , OD or D is used, the wavelength (in nm) of the incident light must be specified (e.g. A_{280} , OD_{600}).

Enzyme nomenclature

The system published in *Enzyme Nomenclature* (1992), London & New York: Academic Press, and its supplements, is used (see <http://www.chem.qmul.ac.uk/iubmb/enzyme>). Enzyme Commission numbers should be given where appropriate.

Genetic nomenclature

The following proposals should be adhered to wherever possible. Bacteria: Demerec, M. *et al.* (1966) *Genetics* **54**, 61–76 [also *J Gen Microbiol* (1968), **50**, 1–14]. Plasmids: Novick, R. P. *et al.* (1976) *Bacteriol Rev* **40**, 168–189. Yeasts: Sherman, F. (1981) In *The Molecular Biology of the Yeast Saccharomyces. I. Life Cycle and Inheritance*, pp. 639–640 (edited by J. N. Strathern *et al.* New York: Cold Spring Harbor Laboratory). *Aspergillus nidulans*: Clutterbuck, A. J. (1973) *Genet Res* **21**, 291–296. *Neurospora crassa*: *Neurospora Newsl* (1978), **25**, 29.

Nomenclature of micro-organisms and descriptions of new taxa

The correct name of the organism, conforming with international rules of nomenclature, must be used; if desired, synonyms may be added in parentheses when the name is first mentioned. Names of bacteria must conform with the current Bacteriological Code and the opinions issued by the International Committee on Systematic Bacteriology. Names of algae and fungi must conform with the current International Code of Botanical Nomenclature. Names of protozoa must conform with the current International Code of Zoological Nomenclature. See the *International Journal of Systematic and Evolutionary Microbiology* Instructions for Authors (<http://ijs.sgmjournals.org/misc/ifora.shtml>) for more details.

The following may be found useful:

List of Prokaryotic Names with Standing in Nomenclature (<http://www.bacterio.cict.fr>)

Bergey's Manual of Systematic Bacteriology (<http://www.bergeys.org/pubinfo.html>)

Microbiology does not normally publish papers whose primary purpose is to describe one or more new species of micro-organism. Such papers are more appropriate for a specialized systematics journal such as the *International Journal of Systematic and Evolutionary Microbiology*. However, descriptions of new taxa may be published in *Microbiology* when they form part of a wider study addressing some aspect of systematics or evolution. Papers reporting new taxa must include a formal description complying with the appropriate Code of Nomenclature, and should designate the type strain, which must be held in a publicly accessible culture collection. For bacteria, the authors must notify the *International Journal of Systematic and Evolutionary Microbiology* of the publication of the description so that the name can be validated.

Description of strains

A source (name and brief address) or reference should be given for each strain used. Authors are encouraged to deposit important strains in a recognized culture collection and to refer to the collection and strain number in the paper.

Papers describing solely the purification and/or characterization of enzymes

It is editorial policy not to publish papers on the above subject(s) unless they describe some particular aspect that is of significant novelty and of clear relevance to microbiology, e.g. the purification of a previously uncharacterized enzyme; a description of unique properties of an established class of enzyme; the development of a new and broadly applicable purification technique; or a report of properties of direct relevance to the functions or application of the producing micro-organism.

Descriptions of well-known enzymes that are already known to be produced by a number of micro-organisms are not appropriate for *Microbiology*.

Papers on host–microbe interactions

Papers submitted to *Microbiology* that concern host–microbe interactions, including infectious, symbiotic or probiotic interactions, must increase our understanding of the micro-organism concerned. Papers detailing the host response with minimal reference to the micro-organism or its products do not fall within the scope of *Microbiology*.

Papers describing mathematical models

Authors of papers that include descriptions of mathematical models will normally be expected to supply details of the model to the JWS Online database for validation by the reviewers. See the JWS Online website (<http://jij.biochem.sun.ac.za/microbiology/>) for details. Authors should submit their paper in the normal way and wait until they have received an acknowledgement and paper number from the Editorial Office before submitting a description of the

model as an ASCII text file to JWS Online. Only the author and reviewers will be able to gain access to the online model during the review stage, via passwords. If the paper is accepted for publication, the model can, with the authors' permission, be made available to all, so readers of the paper will be able to adjust model parameters and run the model over the internet.

Physical maps

In papers reporting physical maps of microbial genomes, results for at least two restriction enzymes must be presented. The number and location of the rRNA genes (or operons), and the number of DNA fragments in each ethidium-bromide-stained band, must also be given.

Papers reporting microarray and other genome-wide studies

Microbiology encourages the publication of papers that use genome-wide approaches to answer important questions in microbes. However, papers that report the results of such studies without using them to increase our understanding of a system, process or organism are unlikely to be acceptable to the Editors.

Papers reporting genome-wide studies must contain sufficient details for readers to understand how the data were acquired, to be able to repeat the analysis, and to place the results in the context of the field. There must be enough replicates to make the data biologically meaningful, and the relevant strain(s) must be made available by the authors to bona fide researchers on request at reasonable cost for non-commercial purposes, or be deposited in a public culture collection. Data from microarray gene expression studies must comply with the MIAME guidelines, and relevant criteria from the MIAME checklist (http://www.mged.org/Workgroups/MIAME/miame_checklist.html) should be applied to other genome-wide studies.

Authors who submit papers whose conclusions explicitly or implicitly depend on genome-wide profiling should preferably deposit the relevant complete data sets in a public online database such as GEO (<http://www.ncbi.nlm.nih.gov/geo/>) before submission, with password protection if appropriate (see <http://www.ncbi.nlm.nih.gov/projects/geo/info/faq.html> for guidance), and provide the accession number/password with their submitted paper. The supplementary data files should also include details of organisms, growth conditions, etc. ('metadata'), if these are not given in the paper. If the data sets are not already in a public database at the time of submission, they must be submitted to *Microbiology* as one or more supplementary files for peer review along with the paper. If the paper is acceptable for publication, it will be a condition of acceptance that the genomics data be posted to a public database if this has not already been done, and that an accession number be provided on the title page of the paper.

Papers reporting original nucleotide or amino acid sequence data

Such papers should be accompanied by substantial additional experimentation to characterize the gene(s) and products(s) concerned, and/or substantial computer analysis leading to important, novel conclusions. *Microbiology* will not normally publish DNA sequences from double-stranded genomes unless both strands have been sequenced independently.

Papers reporting new sequence data will not be published unless the sequence has an accession number from one of the public databases: GenBank (<http://www.ncbi.nlm.nih.gov/>), EMBL (<http://www.ebi.ac.uk/>), DDBJ (<http://www.ddbj.nig.ac.jp/>) or PIR (<http://www-nbrf.georgetown.edu/>). The database accession number(s) must be given as a footnote on the title page of the paper, normally in the form: 'The GenBank [or EMBL or DDBJ] accession number for the sequence reported in this paper is X00000'.

Descriptions of new examples of genes already characterized from various micro-organisms are inappropriate for *Microbiology* unless the new gene has unusual features or the description is part of a wider study.

Microbiology does not publish figures whose principal function is to present primary sequence data, since the data can be accessed through the databases. To merit publication, sequence figures must be justified by the additional annotation they present; they should normally be limited to regions of particular interest. Limited sequence alignments of nucleic acids and proteins are acceptable provided they make a significant point. See p. 5 for guidance on presentation of sequence figures.

Supplementary data facility. Sequence data that are not suitable for print publication can, where appropriate, be published as supplementary data linked to the parent paper in *Microbiology Online* (see p. 5 for details). This would not be appropriate for primary sequence data because such data will be available from the public databases; however, it may be useful for sequence alignments that are too long to print.

Use of data from ongoing sequencing projects. Authors making use of data from ongoing sequencing projects must follow the guidelines set by the project and give appropriate acknowledgement of the source of the data. Authors should show evidence that they have discussed their findings with the scientists responsible for the sequencing programme whose data are being used and that the organization has approved what is being submitted.

Papers reporting new insertion sequences

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Abbreviations: should be listed on the title page, and be defined at first mention in both Summary and main text. The following need not be defined: 1D; 2D; 3D; ACES; ADA; ADP, cAMP, ATP, etc.; AIDS; BES; Bicine; Bistris; bp; b.p.; BSA; CAPS; c.f.u.; CHAPS; CHES; CIE; CM-cellulose; CoA; c.p.m.; Da; DEAE-cellulose; DIG; DMSO; DNA, cDNA, CCC DNA, dsDNA, rDNA, ssDNA, DNase; DNP; d.p.m., d.p.s.; DTT; EC₅₀; ED₅₀; EDTA, EGTA; ELISA; EMS; e.o.p.; EPR or ESR; ES-MS; FACS; FAD; FITC; FMN; FPLC; GC or GLC; GFP; GSH, GSSG; HEPES; HEPPS; HPLC; IC₅₀; i.d.; IEF; IgG, IgM, etc.; IPTG; IR; kb, kbp; LD₅₀; LPS; mAb; MALDI-TOF; MES; MIC; m.o.i.; MOPS; MS; MS-MS; NAD, NADP; NMR; nt; NTA; NTG; ONPG; ORF; PAGE; PBS; PCR; PEG; PFGE; p.f.u.; P_i; PP_i; PIPES; PMSF; ppGpp, pppGpp; p.p.m.; p.s.i.; PVDF; Py-GC, Py-MS; RBS; RFLP; RNA, mRNA, rRNA, tRNA, RNase; r.p.m.; RT-PCR; SDS, SDS-PAGE; TAPS; TCA; TES; TLC; Tricine, Tris; UV; X-Gal.

Compound units: µg ml⁻¹ not µg/ml; 10 µg ampicillin ml⁻¹ not 10 µg ml⁻¹ ampicillin.

Concentration: given in g l⁻¹, etc., or molarity, M, not normality, N. The term '%' must be defined as 'w/v', 'v/v' or 'w/w' if this is necessary to avoid ambiguity.

Figures: refer to in text as Fig. 1(a) not FIG 1A, Figure 1(A), etc.; or as (Fig. 1a) not (Figure 1A). Multipart figures should be labelled (a), (b), etc., not A, (A) or B, (B).

Genes and genotypes: use (for bacteria) *gyrA* not *gyrA*; *arg-1* not *arg1* or *arg1*, etc.

Molecular mass in Da, e.g. 31 500 Da or 31.5 kDa; or **relative molecular mass**, *M_r*, without units, e.g. *M_r* 31 500, not molecular weight. In Table headings and Figure axes, for values >1000 use kDa or 10⁻³ × *M_r*.

Pressure: Pa preferred; if given in p.s.i., equivalent in Pa must be given (1 p.s.i. = 6.9 kPa).

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Table footnote symbols: * † ‡ § || ¶ # in that order from left to right and top to bottom.

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