

INSTRUCTIONS TO AUTHORS

AIMS AND SCOPE

The Journal of Microbiology and Biotechnology (JMB) is a monthly international journal devoted to the advancement and dissemination of scientific knowledge concerning microbiology, biotechnology, biomedicine and related academic disciplines. It covers scientific and technological aspects of microbiology, including Bioactive Compounds / Food Microbiology; Biocatalysis and Bioprocess Engineering; Environmental Microbiology / Microbial Diversity; Molecular and Cellular Microbiology / Biomedical Sciences (the subcategories are available in detail online at <http://www.jmb.or.kr/about/about.html>). JMB is published and distributed as a regular issue on the 28th of each month, and occasionally as a special issue, by the Korean Society for Microbiology and Biotechnology (KMB).

EDITORIAL POLICY

Originality, authorship, and copyright

The manuscripts submitted for publication must be previously unpublished research works written in English, which are not being considered for publication elsewhere.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 (order of listing or addition or deletion of name) after submission should be accompanied by signed statements of agreement from all the parties involved. However, please note that changes in authorship are not allowed after a paper has been accepted. To maintain and protect the Society's ownership and rights, and to protect the original authors from misappropriations of their published work, author(s) are required to sign a *Copyright Transfer Agreement*, which will be sent to the corresponding author confirming receipt of the manuscript when a manuscript is accepted for publication. Unless this agreement is executed, KMB will not publish the manuscript.

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Strain identification, culture deposition and fermentation optimization

Manuscripts addressing only the partial identification of microorganisms based on preliminary experiments, such as 16S rRNA gene sequencing and simple growth characterization, are unlikely to be considered by JMB for publication, unless the authors provide in depth molecular, genetic, and/or physiological analysis to accompany the identification. Similarly, the simple optimization of fermentation conditions through statistical methods are unlikely to be considered for publication. Authors are required to provide strains described in their paper upon request. JMB recommends authors deposit any newly identified, or otherwise noteworthy strains, in publicly accessible microbial stock centers or culture collections, and to provide strain numbers and/or deposit numbers in the text of the manuscript.

Ethics

All research involving human subjects must be performed in accordance with the ethical standards given in the Declaration of Helsinki and the research protocol must be approved by the author's institutional review board (IRB) prior to experiments. Experiments involving animals must be conducted in accordance with institution's or national research council's guidelines for the care and use of laboratory animals and must be approved by the author's institutional animal care and use committee (IACUC). Details of the ethical approval status of the research must be described in the Materials and Methods section of the manuscript, including the IRB and/or IACUC approval number. Authors should submit a document indicating approval of the research when submit the revised version of the manuscript.

Conflict of interest

Journal of Microbiology and Biotechnology requires that all authors disclose any potential sources of conflict of interest. Any interest or relationship, financial or otherwise, that might be perceived as influencing an author's

objectivity is considered a potential source of conflict of interest. These must be disclosed when directly relevant or indirectly related to the work that the authors describe in their manuscript. Potential sources of conflict of interest include but are not limited to patent or stock ownership, membership of a company board of directors, membership of an advisory board or committee for a company, and consultancy for or receipt of speaker's fees from a company. The existence of a conflict of interest does not preclude publication in this journal. If the authors have no conflict of interest to declare, they must also state this at submission. It is the responsibility of the corresponding author to review this policy with all authors and to collectively list in the manuscript (under the Acknowledgment section).

Sequence data

Manuscripts reporting new nucleotide and amino acid sequences should be accompanied by substantial additional experimentation to characterize the gene(s) and product(s) concerned, and/or substantial comparable analysis. A sequence alone is unlikely to be acceptable. Papers reporting new sequence data will not be published unless the sequence has an accession number from a public nucleotide database, for example GenBank, EMBL or DDBJ. Accession numbers should be included in the manuscript no later than the modification stage of the review process. The accession numbers should be included in a separate paragraph at the end of the Materials and Methods section for Articles, or at the end of the text for Notes (for example "The GenBank/EMBL/DDBJ accession number of the sequence reported in this paper is AA00000"). Authors should follow the "Sequence data format" detailed below for the preparation of nucleotide and amino acid sequence diagrams.

Omics data

For manuscripts reporting genomics or transcriptomics data (e.g. microarray, next-generation sequencing, or other high-throughput genomics data), the authors should deposit the omics data in the appropriate public database (e.g. Gene Expression Omnibus (GEO) and BioProject in NCBI, ArrayExpress, or CIBEX) and provide an approved accession number in a separate paragraph at the end of the Materials and Methods for Articles, or at the end of the text for Notes.

Page charges

Submission for all authors is free of charge and only accepted papers are subject to page charges. The page charge is US\$70 (₩70,000) and US\$120 (₩120,000) for each printed page, for active KMB members and non members in Korea, respectively. As a special rate, the page charge for overseas authors is US\$60 for each printed page, effective for manuscripts submitted after February 1, 2017. An invoice for page charges will be sent with the galley proofs to the corresponding author. Invited reviews are not subject to page charges.

Editorial review and revision

All papers will be critically read by at least two anonymous reviewers, selected for their competence in the subject area of the paper. Acceptance of the paper will depend upon its scientific merit and suitability for the journal. A paper may be accepted in its original form or subject to revision.

The reviewers' (and editor's) suggestions will be conveyed to the author, who will then have an opportunity to revise the paper. If a manuscript returned to an author for revision is held for longer than two months, or if revision is sufficiently extensive, then the date of receipt of the revised manuscript will be substituted for the initial date of receipt.

Prior to a final decision being made, all manuscripts will be screened through CrossCheck to verify the integrity of the study, and to identify incidences of plagiarism or dual publication. If any issues are discovered in a manuscript during this screening process, it may subsequently be rejected by the editor regardless of the reviewers' comments, and will likely be forwarded to the editorial committee for a more in depth review of its integrity which may result in the application of further penalties.

If necessary, the accepted paper will be edited by native English speakers. The cost of language editing service is currently US\$70-100 (₩70,000-100,000) per manuscript (subject to change without notice) and will be notified when a bill for page charges is sent to the corresponding author. If you require additional information, please send an e-mail inquiry to the production Editor (jmb@jmb.or.kr).

Proofs

Galley proofs (PDF format) for an accepted article will be sent by e-mail to the

4. Kirkman TW. 1996. Statistics to Use. Available from <http://www.physics.csbsju.edu/stats/>. Accessed Nov. 20, 2011.

References to papers accepted for publication but not yet published should show the journal name and, if known, the probable year of publication, and state "in press."

The following types of references are not valid for listing in the References section:

- unpublished data
- personal communication
- manuscripts in preparation or submitted
- pamphlets
- abstracts
- patents
- newsletters
- material that has not been subjected to peer review.

References to such sources should be made parenthetically in the text (e.g., Lee YH et al. 1989. Abstr. Annu. Meet. Kor. Soc. Appl. Microbiol. Seoul, Korea, p. 159).

Figure legends

Figure legends should contain a brief description of the experiments so that the figure can be understood without reference to the body of the text. However, the legend should not repeat Materials and Methods or contain interpretive statements.

Tables

Tables should be typewritten separately from the main text and in an appropriate font size to preferably fit each table on a separate page. Each table must be numbered with Arabic numerals (e.g., Table 1, Table 2) and include a title. Place footnotes to tables below the table body and indicate them with superscript lowercase letters (a, b, c, etc), *not* symbols. Do not use vertical rulings in the tables. Each column in a table must have a heading, and abbreviations, when necessary, should be defined in the footnotes.

Figures

Figures should be provided separately from the main text. Use Arabic numerals to number all figures (e.g., Figure 1, Figure 2) according to their sequence in the text. The figure number must appear well outside the boundaries of the image itself. Multipart figures should be numbered in uppercase and bold font letters (**A**, **B**, **C**, etc) without parenthesis, both on the figure itself and in the figure legends.

Note that figures may have to be reduced in size to fit the one-column (84 mm) or two-column (176 mm) space of the printed page, as determined by the journal designer. Original figures, especially line drawings, must therefore contain fonts and other detail that are large and clear enough to be legible even after a 50% reduction in size. Line drawings must be a minimum of 0.5 mm thickness for clear reproduction. The preferred symbols for graphs are ○, ●, □, ■, △, ▲, ▽, ▼. Where possible, the same symbol should be used for the same quantity in different figures. 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. Tints should not be used as shading for bars.

All figures should be created with applications that are capable of preparing high resolution TIFF or EPS files acceptable for publication. All figures should be embedded at the end of text in a single Word or PDF file when you initially submit manuscript. If your paper is accepted, we will require submission of figures as separate TIFF or EPS files at publication quality resolution. Blurred images will not be accepted. Diagrams and photographs submitted in electronic format must be of the following minimum resolutions:

- 300 dpi for photographs or halftones only, in both black and white and color
- 600 dpi for photographs or halftones with line artwork as insets
- 600 dpi for line artwork or lettering
- 1,200 dpi for fine-line artwork and artwork with gray shades

The author(s) will be required to pay for reproduction of color photographs. The cost is US\$200 (₩200,000) for each illustration containing color. Any figures submitted in color will be reviewed and processed with the understanding that the figure will be published in color. The mode of the TIFF or EPS file must be CMYK, *not* RGB.

II. Notes

Notes are short reports for the presentation of brief observation that have insufficient material to fulfill the structure of a full-length article. They are intended for reporting preliminary studies or brief studies of a descriptive nature. *Notes* should be arranged in the same way as *Articles*, except that the Introduction, Results, and Discussion sections are in a combined section

with no section headings. The abstract should not exceed 100 words. The main text should follow the logical flow of a structured article and should not exceed 1,200 words; the total number of figures and tables should not exceed four. *Notes* should be approximately 3–4 printed page long. The References section is identical to that of *Articles*. *Notes* are subjected to review.

III. Reviews and Minireviews

Authoritative and critical Reviews and Minireviews of the current state of knowledge regarding any aspect of microbiology and biotechnology are preferred. They must be based on original articles, and may address subjects within the scope of the JMB. Reviews should be divided into sections with appropriate headings. The format of the References section is identical to that of *Articles*. While there is no limitation on the length of a Review, it is recommended that a standard Review comprises no more than the equivalent of 12 printed journal pages, including display items and references. References should number no more than 80. The JMB is also happy to publish more compact Minireviews that highlight topics of emerging interest and summarize developments in rapidly advancing areas. A Minireview should occupy no more than 3 printed journal pages, including display items and references. Minireview references should number no more than 30. If, for a particular reason, an author wishes to exceed or diverge from these guidelines significantly, they should contact the Production Editor (jmb@jmb.or.kr) before submitting a manuscript. Unsolicited reviews will be considered but are subject to the approval of the Editor-in-Chief and will be accepted only under special circumstances. Reviews will be subjected to an independent peer review, and the Editor-in-Chief may request changes or decide not to proceed with publication.

NOMENCLATURES, UNITS, ABBREVIATIONS, AND SYMBOLS

Nomenclatures and abbreviations for chemical and biochemical agents, microorganisms, enzymes, proteins, and genes should follow the Instruction to Authors for journals published by the American Society for Microbiology (available online at <http://journals.asm.org/>).

For nomenclature of restriction enzymes, DNA methyltransferases, homing endonucleases, and their genes, refer to the article by Roberts et al. (*Nucleic Acid Res.* 31:1805–1812, 2003)

The JMB follows the same nomenclature for viruses as the Journal of Virology, and more detailed information can be found in the instruction to author of that journal (available online at <http://jvi.asm.org/>).

All abbreviations should be defined at their first use in the text only; do not repeat the definition of abbreviations thereafter.

Note that the JMB uses the following specific design styles (*Nomenclature, abbreviations, units and symbols*):

- The JMB prefers American spelling (e.g., labeling, sulfur, nonspecific, antiviral), abbreviations (Table 1), and nomenclature to follow internationally agreed recommendations. However, authors may use commonly used abbreviations/acronyms but these must be defined in the text at first citation and included in the Abbreviations list.
- It is often convenient, especially in figures and table headings, to give a multiple of the quantity set or measured by multiplying it by a stated factor. The units in which it is expressed should not be multiplied by a number but may be indicated by prefixes such as: M, k, m, μ , n or p (see Table 2).
- The JMB prefers the IUBMB recommendations on symbolism and terminology in rate/equilibrium constants and enzyme kinetics. e.g., K_m , K_s , k_1 , k_{cat} , V_{max} , V_0 , E_0 , E_p , M_p , I_0 , ΔG_a (i.e., subscripted, non-italicized).
- SI (Système International d'Unités) units and quantities should be used (see Tables below) (see http://www.bjpm.fr/enus/3_SI/si.html) but Å, cal, p.p.m. can be used where appropriate.
- Leave a space between a number and its unit of measure. (Exception, do not leave a space between a number and the temperature degree, percent, angular degree, angular minute, or angular second symbols, 15°C, 50%, 90°, 75', 18").
- Use a slash (/) in units of measure (i.e., g/ml rather than g ml⁻¹).
- Use a slash (/) in spelled-out units of measure, not the word "per", before the abbreviation for a unit in complex expressions. e.g., 50 μ g of peptide/ml, 25 mg of drug/kg of body weight, 10 counts/s, 12 domains/cm³, 2×10^3 ions/min, 0.8 keV/channel, and 125 conversions/mm².
- Do not add an "s" to make the plural of any abbreviated units of measure. e.g., 50 mg (not 50 mgs), 3 mol (not 3 mols).
- Do not mix abbreviations and spelled-out units within units of measure.
- Do not capitalize surnames that are used as units of measure.
- Centrifugal force should be preferably expressed as $\times g$, rather than rpm.
- L-amino acid, D-amino acid (i.e., LD in small caps).
- Names for regional bioproducts should be written in non-italicized lowercase letters. The names should be explained in a parenthesis

when used first time in the abstract/text. (e.g., kimchi (Korean traditional fermented cabbages)).

- Usage should be consistent within a paper.

Table 1. Abbreviations

| Name | memo | Name | memo |
|---|---|----------------------------|--|
| DNA | Deoxyribonucleic acid | NADP ⁺ | Nicotinamide adenine dinucleotide phosphate, oxidized |
| cDNA | Complementary DNA | Poly(A) and poly(dT), etc. | Polyadenylic acid and polydeoxythymidylic acid, etc. |
| RNA | Ribonucleic acid | Oligo(dT), etc. | Oligodeoxythymidylic acid, etc. |
| cRNA | Complementary RNA | UV | Ultraviolet |
| RNase | Ribonuclease | PFU | Plaque-forming units |
| DNase | Deoxyribonuclease | CFU | Colony-forming units |
| rRNA | Ribosomal RNA | MIC | Minimal inhibitory concentration |
| mRNA | Messenger RNA | Tris | Tris[hydroxymethyl]aminomethane |
| tRNA | Transfer RNA | DEAE | Diethylaminoethyl |
| AMP, ADP, ATP, dAMP, ddATP, and GTP, etc. | For the respective 5' phosphates of adenosine and other nucleosides | EDTA | Ethylenediamine tetraacetic acid |
| ATPase and dGTPase, etc. | Adenosine triphosphatase and deoxyguanosine triphosphatase, etc. | EGTA | Ethylene glycol-bis[β-aminoethyl ether]-N,N,N',N'-tetraacetic acid |
| NAD | Nicotinamide adenine dinucleotide | HEPES | N-2-hydroxyethyl piperazine-N'-2-ethanesulfonic acid |
| NAD ⁺ | Nicotinamide adenine dinucleotide, oxidized | PCR | Polymerase chain reaction |
| NADH | Nicotinamide adenine dinucleotide | AIDS | Acquired immune deficiency syndrome |
| NADPH | Nicotinamide adenine dinucleotide phosphate | | |

Table 2. Multiplying SI Prefixes

| Factor | Prefix | Symbol |
|------------------|--------|--------|
| 10 ¹ | deca | da |
| 10 ² | hecto | h |
| 10 ³ | kilo | k |
| 10 ⁶ | mega | M |
| 10 ⁹ | giga | G |
| 10 ¹² | Tera | T |
| 10 ¹⁵ | peta | P |
| 10 ¹⁸ | exa | E |

Table 2. Continued

| Factor | Prefix | Symbol |
|-------------------|--------|--------|
| 10 ²¹ | zetta | Z |
| 10 ²⁴ | yotta | Y |
| 10 ⁻¹ | deci | d |
| 10 ⁻² | centi | c |
| 10 ⁻³ | milli | m |
| 10 ⁻⁶ | micro | μ |
| 10 ⁻⁹ | nano | n |
| 10 ⁻¹² | pico | p |
| 10 ⁻¹⁵ | femto | f |
| 10 ⁻¹⁸ | atto | a |
| 10 ⁻²¹ | zepto | z |
| 10 ⁻²⁴ | yocto | y |

Table 3. SI-Derived Units

| Name | Symbol | Quantity | In terms of other units | In terms of SI based units |
|-----------|--------|---|-------------------------|---|
| becquerel | Bq | activity (of a radionuclide) | - | s ⁻¹ |
| coulomb | C | quantity of electricity, electric charge | - | s·A |
| farad | F | capacitance | C/V | m ² ·kg ⁻¹ ·s ⁴ ·A ² |
| gray | Gy | absorbed dose, kerma, specific energy imparted | J/kg | m ² ·s ⁻² |
| henry | H | inductance | Wb/A | m ² ·kg·s ⁻² ·A ⁻² |
| hertz | Hz | frequency | - | S ⁻¹ |
| joule | J | energy, work, quantity of heat | N·m | m ² ·kg·s ⁻² |
| lumen | lm | luminous flux | cd·sr | m ² ·m ⁻² ·cd=cd |
| lux | lx | illuminance | lm/m ² | m ² ·m ⁻⁴ ·cd=m ⁻² ·cd |
| newton | N | force | - | m·kg·S ⁻² |
| ohm | Ω | electric resistance | V/A | m ² ·kg·S ⁻³ ·A ⁻² |
| pascal | Pa | pressure, stress | N/m ² | m ⁻¹ ·kg·S ⁻² |
| siemens | S | conductance | A/V | m ⁻² ·kg ⁻¹ ·s ³ ·A ² |
| sievert | Sv | dose equivalent | J/kg | m ² ·s ⁻² |
| tesla | T | magnetic flux density | Wb/m ² | kg·s ⁻² ·A ⁻¹ |
| volt | V | electric potential, potential difference, electromotive force | W/A | m ² ·kg·s ⁻³ ·A ⁻¹ |
| watt | W | power, radiant flux | J/s | m ² ·kg·s ⁻³ |
| weber | Wb | magnetic flux | V·s | m ² ·kg·s ⁻² ·A ⁻¹ |

Table 4. SI-Derived Compound Units

| Name | Symbol | Quantity | In terms of other units |
|--------------------------|-------------------|------------------------------|-------------------------|
| ampere per meter | A/m | Magnetic field strength | - |
| ampere per square meter | A/m ² | Current density | - |
| candela per square meter | Cd/m ² | Luminance | - |
| coulomb per cubic meter | C/m ³ | Electric charge density | m ⁻³ ·s·A |
| coulomb per kilogram | C/kg | Exposure (X-rays and γ-rays) | - |

Table 4. Continued

| Name | Symbol | Quantity | In terms of other units |
|---------------------------------|-----------------------|--|--|
| coulomb per square meter | C/m ² | Electric flux density | m ⁻² ·s·A |
| cubic meter | m ³ | Volume | - |
| cubic meter per kilogram | m ³ /kg | Specific volume | - |
| farad per meter | F/m | Permittivity | m ⁻³ ·kg ⁻¹ ·s ⁴ ·A ² |
| henry per meter | H/m | Permeability | m·kg·s ⁻² ·A ⁻² |
| joule per cubic meter | J/m ³ | Energy density | m ⁻¹ ·kg·s ⁻² |
| joule per kelvin | J/K | Heat capacity, entropy | m ² ·kg·s ⁻² ·K ⁻¹ |
| joule per kilogram | J/kg | Specific energy | m ² ·s ⁻² |
| joule per kilogram kelvin | J/(kg K) | Specific heat capacity, specific entropy | m ² ·s ⁻² ·K ⁻¹ |
| joule per mole | J/mol | Molar energy | m ² ·kg·s ⁻² ·mol ⁻¹ |
| joule per mole kelvin | J/(mol K) | Molar entropy, molar heat capacity | m ² ·kg·s ⁻² ·K ⁻¹ ·mol ⁻¹ |
| kilogram per cubic meter | Kg/m ³ | Density, mass density | - |
| meter per second | m/s | Speed, velocity | - |
| meter per second squared | m/s ² | Acceleration | - |
| mole per cubic meter | mol/m ³ | Concentration (amount of substance per volume) | - |
| newton-meter | N·m | Moment of force | m ² ·kg·s ⁻² |
| newton per meter | N/m | Surface tension | kg·s ⁻² |
| pascal second | Pa·s | Dynamic viscosity | m ⁻¹ ·kg·s ⁻¹ |
| radian per second | rad/s | Angular velocity | - |
| radian per second squared | rad/s ² | Angular acceleration | - |
| reciprocal meter | m ⁻¹ | Wavenumber | - |
| reciprocal second | s ⁻¹ | Frequency | - |
| square meter | m ² | Area | - |
| square meter per second | m ² /s | Kinematic viscosity | - |
| volt per meter | V/m | Electric field strength | m·kg·s ⁻³ ·A ⁻¹ |
| watt per meter kelvin | W/(m K) | Thermal conductivity | m·kg·s ⁻³ ·K ⁻¹ |
| watt per square meter | W/m ² | Heat flux density, irradiance | kg·s ⁻³ |
| watt per square meter steradian | W/(m ² sr) | Radiance | - |
| watt per steradian | W/sr | Radiant intensity | - |

SEQUENCE DATA FORMATS

Diagrams of nucleotide and amino acid sequences should be prepared in the most effective layout. The layout should be designed to fit the journal page economically, i.e. to fill either the full width of the page (176 mm) or a single column (84 mm). The height of the characters should be about 1.5–2 mm (or 6–8 point). For sequence data 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). A single-column layout would ideally fit 50–60 nucleotides per line. If possible, lines of nucleic acid sequence should be subdivided into blocks of 10 or 20 nucleotides by spaces within the sequences or by marks above it. There should not be too much space between the lines of sequence. Use of the single-letter amino acid code is preferred.

MICROARRAY DATA

Data from microarray gene expression studies must comply with the MIAME guidelines (see <http://www.mged.org/Workgroups/MIAME/miame.html>).

MANUSCRIPT CHECKLIST

It is hoped that this list will be useful during the final checking of your manuscript prior to submitting it to the journal for review. Ensure that the following items are present:

- One author designated as corresponding author
- Telephone and fax numbers, and E-mail address of the corresponding author
- Running title
- Key words
- Page and line numbers
- All tables (including title, description, footnotes) and figures (separated from figure legends) are provided in a single file with main text for initial submission.
- References are in the correct format for this journal.
- All references mentioned in the Reference list are cited in the text, and vice versa.