

Journal of Bioscience and Bioengineering

Instructions to Authors

9 January/2004

GENERAL

Policy The Journal of Bioscience and Bioengineering publishes papers on a broad range of topics. It is devoted to the advancement and dissemination of knowledge concerning general and molecular biology, including genetics, biochemistry, and physiology of microorganisms, plant, and animal cells. The Journal also welcomes research in the fields of applied microbiology, enzyme technology, general and environmental biotechnology, food technology, biochemical engineering, plant biotechnology, cell and tissue engineering, medical biotechnology, and bioinformatics. Research articles submitted must be reports of unpublished original research, which are not being considered for publication elsewhere.

Types of paper Five types of papers are accepted by the Editors:

Regular papers: They should be of the minimum length required for precise description and clear interpretation of the experiments. A concise well-written paper tends to be published more rapidly.

Notes: They may be short research reports which contain material of unusual interest but which are not sufficient to form the basis of a regular paper. They must not exceed three printed pages (see below, "How to estimate a printed page"). Each Note must have a short abstract of no more than 50 words. Do not use section headings in the body of the Note; report methods, results and discussion in a single section.

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Authorship Membership in the Society for Biotechnology, Japan is not a prerequisite for consideration of research articles.

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substituted for the original date of receipt. Any extra expenses incurred, for example, in the revision of English and preparation of drawings, will be borne by the authors.

Sequence data submission It is expected that newly determined nucleotide sequence data will be submitted to one of the following databases: DDBJ (<http://www.ddbj.nig.ac.jp>)/EMBL (<http://www.ebi.ac.uk>)/GenBank (<http://www.ncbi.nlm.nih.gov>). Since the sequence information is exchanged between those databases on a daily basis, authors can submit data to any database regardless of which database publishes them. It is also expected that DDBJ/EMBL/GenBank accession numbers will be included in the manuscript. The suggested wording for referring to the accession number information is as follows: "These sequence data have been submitted to the DDBJ/EMBL/GenBank databases under accession no. U12345".

Disk submission When the modification stage is completed, a disk containing the revised version of the manuscript must be provided. The disk should contain the text (including References and figure legends) and tables in separate files. It is important that the manuscript on disk be formatted correctly with all the proper sections and headings. Two hard copies (1 original and 1 copy) which exactly match the files on disk must be supplied at the same time.

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Style The authors should present their material with utmost conciseness, under adequately classified headings such as Abstract; Introduction; Materials and Methods; Results and Discussion; Acknowledgments; and References. These should be preceded by the title of the article, the author's name(s), Institution(s), and a brief running title. All tables and figures should be numbered consecutively using Arabic numerals. Their approximate positions should be indicated in the margin of the typescript.

Title: Each manuscript should present the results of an independent, cohesive study; thus, numbered series titles are not allowed. Avoid the main title/subtitle arrangement and unnecessary articles. On the title page, include the title, running title (not to exceed 54 characters and spaces), name of each author, address(es) of the institution(s) at which the work was performed, and each author's affiliation or a footnote indicating the present address of any author no longer at the institution where the work was performed. Place an asterisk after the name of the author to whom inquiries regarding the paper should be directed. A list of key words must be included on the title page.

Abstract: Abstract should not ordinarily exceed 5 percent of the length of the paper, and should not repeat information already present in the title. It should be suitable for use directly by Biological Abstracts and by Chemical Abstracts. Notes must also have an abstract.

References: The References section must include all relevant published work, and all listed references must be cited in the text. Arrange the References section in order of their appearance in the text, and number consecutively. Abbreviate journal names according to BIOSIS Serial Sources (BIOSIS, 2003 [<http://www.biosis.org>]). Cite each listed reference in the text by number. 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". Three copies of the article "in press" should be enclosed with the manuscript.

The following types of references are not valid for listing: unpublished data, personal communications, manuscripts in preparation, manuscripts submitted, pamphlets, abstracts, patents, theses, dissertations, newsletters, letters to the editor, and material that has not been subjected to peer review. References to such sources should be made parenthetically in the text.

Follow the styles shown in the examples below.

1. **Yoshimura, T. and Esaki, N.:** Amino acid racemases: functions and mechanisms. *J. Biosci. Bioeng.*, **96**, 103–109 (2003).
2. **Nishikawa, S. and Murooka, Y.:** 5-Aminolevulinic acid: production by fermentation, and agricultural and biomedical applications, p. 149–170. *In* Harding, S. E. and Tombs, M. P. (ed.), *Biotechnology and genetic engineering reviews*, vol. 18. Intercept, Andover, Hampshire (2001).
3. **Madigan, M. T., Martinko, J. M., and Parker, J.:** *Brock biology of microorganisms*, 10th ed., p. 965–993. Pearson Education, Upper Saddle River, New Jersey (2003).

Parenthetical references in the text should be cited as follows: (Yamashita *et al.*, Abstr. Annu. Meet. Soc. Biotechnol., Jpn., p. 10, 2003)

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Printing costs of color photographs Authors will be charged for printing costs of color photographs. The cost for color printing will be approximately 40,000 yen per page.

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Units, nomenclatures, abbreviations and symbols: SI units (Système International d'Unités) should be used whenever possible. Much-used symbols, quantities, and units are shown in Table 1. All nomenclatures, abbreviations and symbols except for those in Tables 2 and 3 should be identified at the end of the paper or in the footnotes. For amino acids in peptides and proteins, and for nucleotides in RNA and DNA, standard symbols may be used without definition only in giving the structures of these polymers.

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Before preparing papers, authors should consult a current issue of the *Journal* familiarize themselves with the general format, such as the use of crossheadings, layout of tables, and citation of references. The need for revision of badly prepared typescripts or diagrams will delay publication.

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Method of calculation:

- ① Text: Count the number of characters (including spaces) in the complete text (the title, authors' names, institutional affiliation(s), running title, key words, figure legends, and table titles and footnotes must be included).
- ② Tables and equations that take up half the width of a printed page (1 column*):

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** Please estimate the final printed size of each figure by using a suitable method to reduce the original to an appropriate size. Figures exceeding 8.5 cm in width usually require 2 columns.

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Experiments using human subjects or animals should follow the ethical standards formulated in the Declaration of Helsinki, 1964 (revised in 2002). In manuscripts containing animal experiments, measures taken to protect animals from pain or discomfort should be described.

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The manuscript accepted by JBB contains linguistic and editorial corrections by editorial staff as well as review comments, which require correction and confirmation by the author(s). Please prepare the final manuscript by making all necessary corrections within one week from the receipt of the manuscript.

When significant corrections involving the addition/deletion of terms and sentences are made by the author(s), JBB may charge a necessary fee to the author(s), and/or the manuscript may be published in a later issue.

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On the hard copy, please use a red pen to insert characters and symbols that could not be printed out. Also, please indicate the positions of insertion of figures and tables in the margin.

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3.4 Keywords

Please include 5–10 keywords.

3.5 Input errors

Please note that input errors in the manuscript are printed as they are. Ensure that no errors exist.

3.6 Notes for the preparation of manuscript file**3.6.1 File name**

The main text and tables should be in separate files (recommended file name: the author's name), in the sequence described in the following section. Use the extension of each software. When figure files are included, use file names which are easy to recognize. Figure files may not be used for printing in some cases.

3.6.2 Structure

Use the following sequence:

- (1) title, name(s) of author(s), affiliation(s), address(es), running title,
- (2) keywords, footnote(s), abstract,
- (3) text, acknowledgments, references,
- (4) figure legend(s),
- (5) table(s).

3.7 Word-processor software (English)**3.7.1 Software requiring no conversion**

When you use one of the following software programs, conversion of the manuscript file into a text file is not necessary. Please send the file as it is. Please name the file as described in sec. 3.6.1. Both Macintosh and Windows are acceptable.

Microsoft Word (all versions)

RTF files

3.7.2 Conversion to text files

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TABLE 1. Selected symbols for quantities and units

Symbol	Quantity	Unit
Space, time and related quantities		
l	length	m, mm, μm (not μ), nm, etc.
A	area	m^2 , cm^2 , mm^2 , etc.
V	volume	m^3 , dm^3 (or l), cm^3 (or ml), mm^3 (or μl), etc.
λ	wave length	nm (not $\text{m}\mu$); not \AA .
t	time	d (not day), h (not hr), min, s (not sec), ms, μs , etc.
ν, f	frequency	Hz
Mechanical and related quantities		
m	mass	t, kg, g, mg, μ (not γ), etc.
ρ	density	$\text{g}\cdot\text{cm}^{-3}$
d	relative density	(dimensionless)
F	force	N ($\text{kg}\cdot\text{m}\cdot\text{s}^{-2}$)
E	energy	J (not cal)
P	pressure	Pa ($\text{N}\cdot\text{m}^{-2}$)
p	partial pressure	1 bar= 10^5 Pa (1 atm= 101325 Pa; 1 mmHg=1 torr= 13.2 Pa)
s	sedimentation coefficient	S= 10^{13} s
η	viscosity	P= 0.1 Pa \cdot S
W	watt	$\text{kg}\cdot\text{m}^2\cdot\text{s}^{-3}$
Molecular and related quantities		
n	amount of substance	mol, mmol, μmol , etc.
M_r	relative molecular mass	dimensionless
M	molar mass	$\text{g}\cdot\text{mol}^{-1}$
m	molecular mass	Da (dalton)
$C_B, [B]$	concentration of substance B	M ($\text{mol}\cdot\text{l}^{-1}$), mM, etc.
\bar{v}	partial specific volume	dimensionless
Thermodynamic and related quantities		
T	thermodynamic temperature	K
t, θ	Celsius temperature	$^{\circ}\text{C}$
q, Q	heat	J (not cal)
I	ionic strength	M ($\text{mol}\cdot\text{l}^{-1}$), mM, etc.
G	Gibbs free energy	J (not cal)

Chemical reactions		
K	equilibrium constant	(dimensions depend on the order of reaction)
K_m	Michaelis constant	M, mM, etc.
K_i	inhibition constant	M, mM, etc.
k	rate constant	s^{-1} or $M \cdot s^{-1}$, etc.
v	rate of reaction	$mol \cdot s^{-1}$, $mmol \cdot s^{-1}$, etc.
V_{max}, V_0	rate of enzyme-catalyzed reaction at infinite concentration of substrate	
$k_L a$	volumetric mass-transfer coefficient in liquid film	h^{-1} or min^{-1}
$K_L a$	overall volumetric coefficient of mass transfer	h^{-1} or min^{-1}
Electricity and magnetism		
I	electric current	A
V	potential difference	V
C	capacitance	F
H	magnetic field strength	G (gauss)= 10^{-4} T
R	resistance	Ω
κ	conductivity	S (Ω^{-1})
Light and related electromagnetic radiation		
I	luminous intensity	cd
T	transmittance $I \cdot I_0^{-1}$	(dimensionless)
A	absorbance ($-\log T$)	(dimensionless)
ϵ	molar absorption coefficient	$M^{-1} \cdot cm^{-1}$
Others units		
	Curie, Ci; Roentgen, R; Roentgen equivalent man, rem; Roentgen equivalent physical, resp; acceleration of gravity, g .	
	Prefixes for units are: T, tera (10^{12}); G, giga (10^9); M, mega (10^6); k, kilo (10^3); d, deci (10^{-1}); c, centi (10^{-2}); m, milli (10^{-3}); μ , micro (10^{-6}); n, nano (10^{-9}); p, pico (10^{-12}); f, femto (10^{-15}); a, atto (10^{-18}).	

TABLE 2. Abbreviation for words other than units, physical quantities or chemical compounds

Abbreviation	Full words	Notes
abs.	absolute	<i>e.g.</i> abs. alcohol
BOD	biochemical oxygen demand	
bp	base pair	
BSA	bovine serum albumin	
cf.	compare	<i>e.g.</i> (cf. Ref. 10)
COD	chemical oxygen demand	
concn	concentration	use only in table headings and figure legends
cpm	counts per minute	
DO	dissolved oxygen	
dpm	disintegration per minute	
<i>e.g.</i>	for example	
ELISA	enzyme-linked immunosorbent assay	
Eq. (pl. Eqs.)	Equation	use only when a particular equation is referred to; <i>e.g.</i> Eq. 2
<i>et al.</i>	et alia (and others)	use only in citing in literature, and never in a list of references
Expt. (pl. Expts.)	Experiment	use only when a particular experiment is referred to; <i>e.g.</i> Expt. 2
Fig. (pl. Figs.)	Figure	use only when a particular figure is referred to; <i>e.g.</i> Fig. 2
GC-MS	gas chromatography-mass spectrometry	
HPLC	high-performance liquid chromatography, high-pressure liquid chromatography	
<i>i.e.</i>	that is	
IR	infrared	
LD ₅₀	lethal dose, median	
max.	maximum	
min.	minimum	
MLD	minimum lethal dose	
<i>m-, p-, o-,</i>	<i>meta-, para-, ortho-,</i>	only in names of organic compounds
m.p.	melting point	
MS	mass spectrometry	
<i>m/z</i>	mass-to-charge ratio	
<i>n-</i>	<i>normal</i>	only in names of organic compounds
NMR	nuclear magnetic resonance	
no.	number	use only when followed by a number; <i>e.g.</i> no. 3, do not use nr. or #
OD	optical density	
%	percent	use only when preceded by a number
p. (pl. pp.)	page	
P450	as in cytochrome P450 (P-450, P ₄₅₀)	
PCR	polymerase chain reaction	

ppb	parts per billion	not for concentration of solution
ppm	parts per million	not for concentration of solution
ppt.	precipitate	
Ref. (pl. Refs.)	reference	use only when followed by a number, in the text
R_f	distance travelled by zone, divided by distance travelled by solvent front	
rpm	revolution per minute	
RQ	respiratory quotient	
SD	standard deviation of a series	
SDS-PAGE	sodium dodecyl sulfate-polyacrylamide gel electrophoresis	
SE	standard error of mean of series	
<i>sec-</i>	<i>secondary</i>	in names of organic compounds
sp. (pl. spp.)	species	
temp	temperature	use only in table headings and figure legends
<i>tert-(t-)</i>	<i>tertiary</i>	in names of organic compounds
TLC	thin-layer chromatography	
UV	ultraviolet	
vol. (pl. vols.)	volumes	use only when preceded by a number
vs	versus	
v/v	volume : volume	
vvm	volume per volume per minute	
wt	weight	
w/v	weight : volume	
w/w	weight : weight	

TABLE 3. Abbreviations for semi-systematic or trivial names of organic compounds
(These abbreviations may be used without definition)

ADP	adenosine 5'-diphosphate
AMP	adenosine 5'-monophosphate
cAMP	cyclic adenosine 3',5'-monophosphate
ATP	adenosine 5'-triphosphate
ATPase	adenosine triphosphatase
CDP	cytidine 5'-diphosphate
CMP	cytidine 5'-monophosphate
CoA	coenzyme A
CTP	cytidine 5'-triphosphate
DEAE	diethylaminoethyl
DNA	deoxyribonucleic acid
DNase	deoxyribonuclease
EDTA	ethylenediaminetetraacetic acid
FAD	flavin adenine dinucleotide
FMN	flavin mononucleotide
GDP	guanosine 5'-diphosphate
GMP	guanosine 5'-monophosphate
GTP	guanosine 5'-triphosphate
IDP	inosine 5'-diphosphate
IMP	inosine 5'-monophosphate
ITP	inosine 5'-triphosphate
NAD, NAD ⁺	nicotinamide adenine dinucleotide
NADH	reduced NAD
NADP, NADP ⁺	nicotinamide adenine dinucleotide phosphate
NADPH	reduced NADP
NMN	nicotinamide mononucleotide
RNA	ribonucleic acid
mRNA	messenger RNA
rRNA	ribosomal RNA
tRNA	transfer RNA
RNase	ribonuclease
TDP	thymidine 5'-diphosphate
TMP	thymidine 5'-monophosphate
Tris	tris(hydroxy methyl)aminomethane
TTP	thymidine 5'-triphosphate
DDP	uridine 5'-diphosphate
UMP	uridine 5'-monophosphate
UTP	uridine 5'-triphosphate