

RADIATION RESEARCH **INFORMATION FOR AUTHORS**

INTRODUCTION

Radiation Research will publish original articles dealing with radiation effects and related subjects in the areas of physics, chemistry, biology and medicine, including epidemiology and translational research. The term *radiation* is used in its broadest sense and includes specifically ionizing radiation and ultraviolet, visible and infrared light as well as microwaves, ultrasound and heat. *Effects* may be physical, chemical or biological. *Related subjects* include (but are not limited to) dosimetry methods and instrumentation, isotope techniques, and studies with chemical agents contributing to the understanding of radiation effects.

ETHICAL CONSIDERATIONS

Manuscripts are accepted for review with the expectation that the highest ethical standards have been followed during the performance of the research described in the manuscript and during the preparation and submission of the manuscript. Several specific expectations are outlined below.

Manuscripts are accepted for review with the understanding that the same paper has not been published previously and that it is not presently submitted for publication elsewhere.

Manuscripts are accepted for review with the understanding that authors submitting papers to the journal have given full consideration to the ethical issues of authorship. We expect that all those who made significant intellectual contributions to the design, performance, analysis or interpretation of the work presented in the manuscript are included as authors. We assume that all authors have read the manuscript and have approved the submission of the manuscript. We expect that all authors have accepted responsibility for the integrity and accuracy of the components of the work within their areas of expertise and for the interpretation and presentation of these components in the manuscript. The Acknowledgments section can be used to thank those individuals who provided assistance, but whose involvement does not rise to the level expected for authorship.

If the institution(s) at which the work has been performed must approve submission of manuscripts, the manuscript is accepted for review with the understanding that this approval has been requested and granted.

Manuscripts are accepted for review (and publication) with the understanding that any person cited as the source of a personal communication has approved such citation.

In the case of reports of studies involving the use of human subjects, the Materials and Methods section should specifically identify the governmental, funding agency, and institutional guidelines that have been followed during the performance of the studies to ensure the ethics of the research and the welfare of the human subjects. The Materials and Methods should also include an assurance that either the study has been reviewed and approved by the committee(s) that oversees the ethics of research involving human subjects and the protection of the human subjects [the committee(s) should be specified] or that the research has been exempted from review, because, for example, it uses only anonymized cell lines or existing anonymized databases. Human subjects research is defined in the broad sense used by the U.S. Public Health Service (USPHS), which includes certain types of epidemiological studies and studies with human cell lines and tissues, as well as medical observations and clinical trials.

In the case of reports of studies involving the use of animals, the Materials and Methods

section should specifically identify the governmental, funding agency, and institutional guidelines that have been followed during the performance of the studies to ensure the ethics of the research and the welfare of the animals. If the welfare of the animals at the institution is also reviewed by external governmental or accrediting agencies (e.g. Association for the Assessment and Accreditation of Laboratory Animal Care, U.S. Department of Agriculture), this should be stated and the agencies identified. The Materials and Methods should also include an assurance that the studies have been reviewed and approved by the committee(s) that oversees the ethics of research involving the use of animals and the welfare of the animals [the committee(s) should be specified].

Real, potential and apparent conflict of interest on the part of the author(s) or the authors' institutions will be considered during the review process. Potential conflicts of interest include financial and other relationships that might reasonably be expected to affect the objectivity of the authors. When that manuscript is submitted for publication, the authors are expected to disclose any relationships that might pose real, apparent or potential conflicts of interest with respect to the results reported in that manuscript. In some cases, the journal may require disclosure of significant relationships, such as grant support from a company owning a drug or device being evaluated or employment of authors by that company, in the published paper. The Editors make every attempt to ensure that conflicts of interest do not compromise the objectivity of the review process, and require that potential editors and reviewers exempt themselves from review process when such conflicts exist.

If an article contains a figure, table or long direct quotation that is to be reprinted from another source, the journal will require the permission of an author of the paper containing the original material, and may in some circumstances also require the permission of the publisher of that paper. Appropriate permissions need not accompany the submission of the article, but will be needed before publication.

MANUSCRIPT CATEGORIES

Regular Papers

As a rule, regular papers should not exceed 40 double-spaced pages *including* references, footnotes, tables, figures and legends. The general guidelines for form outlined below should be followed.

Rapid Communications

The Editorial Board will consider short articles that report a new method or technique and new concepts that are testable. The aim is to provide a more rapid publication for those papers that provide new approaches to technical and conceptual problems and that may be useful and timely for the reader. The selection will be restricted to those communications that meet these criteria.

Rapid Communications will be reviewed by an Associate Editor and at least one expert reviewer. The authors should select the most appropriate format for presenting their communication. Such publications will normally appear in print within 6 weeks of acceptance.

Short Communications

Under the heading Short Communications, the Editor will consider brief reports and other manuscripts that do not fit the overall requirements for general research papers. This may include pertinent discussion of current problems in the field of radiation research as well as contributions

of a didactic nature. For these articles, the topicality and general significance of the subject will be of primary importance, and original research data will not be a prerequisite.

Regular papers and submissions to the Short Communications section will be reviewed similarly. Short Communications will not generally enjoy significantly faster publication times than do regular contributions.

Technical Advances

The Editor will consider papers that report a new technique that could have broad application. The papers will be reviewed in the same manner as regular papers.

Commentaries

The Editor will invite or consider from time to time submissions that deal with subjects of interest and that do not fall into the other categories of manuscripts. The Commentary should be of interest, important and factually correct, but it can express unaccepted views that have not been shown to be unequivocally incorrect. A Commentary can be inflammatory but not defamatory, inflammatory in the sense that it may stimulate Letters to the Editor. Commentaries will be reviewed to ensure that facts are correct but not to eliminate hypotheses or reasonable speculation.

Letters to the Editor

Under this heading, the Editor will consider substantive comments on papers and Editorials published in the journal. The authors should select the most appropriate format for presenting their communication.

Other

The Editor frequently invites or considers review articles covering areas of interest to the readership. Suggestions for topics and authors are encouraged. The journal also publishes book reviews, obituaries and reports of meetings. Extended abstracts or papers from meetings are also published on occasion, either in regular issues of the journal or as supplements. Please contact the editorial office to discuss potential submissions of these types.

FORM OF MANUSCRIPTS

All text, including the abstract, references and figure legends, should be double-spaced. Page 1 should contain the article title, author names(s) and affiliations(s), the name of and complete contact information for the corresponding author, and a proposed running title not exceeding 50 characters including letters and spaces. Page 2 should contain an abstract not exceeding 200 words. Proprietary terms and abbreviations should not be used. The authors' names article title should appear at the top of the abstract as follows:

Bedford, J. S. and Mitchell, J. B. Dose-Rate Effects in Synchronous Mammalian Cells in Culture. *Radiat. Res.*

Radiation Quantities and Units

Authors should use the International System of Units (SI). Centigray (cGy) and centisievert (cSv) should be used only for values less than 1 Gy and 1 Sv, respectively.

Abbreviations and Nomenclature

The use of too many abbreviations, symbols and acronyms makes a paper difficult to read. *Radiation Research* is a multidisciplinary journal, and short forms common in one field may not be recognized by all readers. Thus these short forms should be used sparingly, and only standard abbreviations should be used. A list of some abbreviations that can be used without explanation in the text is included at the end of the Information for Authors.

Authors are referred to the following guides for assistance with abbreviations and nomenclature: *Compendium of Biochemical Nomenclature and Related Documents* (1992); *The ACS Style Guide: A Manual for Authors and Editors*, 2nd ed. (1997); *Scientific Style and Format: The CBE Manual for Authors, Editors, and Publishers*, 6th ed. (1994); *Mathematics into Type*, revised ed. (1979); *AIP Style Manual* (1990). When there is disagreement between a style guide and the journal's style, the journal's style should be followed.

Authors should use the nomenclature for genes and proteins that has been approved by the nomenclature committees for each species. The following Web sites provide information that is updated regularly: Human Gene Nomenclature Committee, <http://www.gene.ucl.ac.uk/nomenclature>; Mouse Genome Informatics, <http://www.informatics.jax.org/>; The Rat Genome Database (RATMAP), <http://ratmap.gen.gu.se/>.

Tables

Tables should be numbered consecutively with Arabic numerals. The proportions of the printed page should be considered in designing the table. Footnotes to tables should be identified with superscript lowercase italic letters, *a, b*, etc., and placed at the bottom of the page containing the table.

Footnotes

Footnote material should be indicated in the text by superscript Arabic numerals and should be cited consecutively throughout the article starting with the title. A double-spaced listing of footnotes should be provided on a separate page at the end of the manuscript.

Figures

With the exception of some chemical structures, all illustrations are to be considered as figures, and each graph, drawing or photograph should be numbered in sequence with Arabic numerals. Figures should be designed to fit the proportions of the printed page (7¹/₈ × 9 in., 11.3 × 8.8 cm; column width 3¹/₂ in., 8.8 cm), with originals no larger than 8¹/₂ × 11 in. (21.3 × 27.5 cm).

If a figure contains more than one panel, each panel (A, B, etc.) should be labeled within the panel, and the same letters should be used in the text and legends. Multiple panels should be placed on the same page. A double-spaced listing of the figure legends should be provided on a separate page as part of the manuscript text.

(a) Line drawings must be of a sufficient quality for reproduction. *All lines, including those used for curve fitting, should not be less than 1 point in weight.* High-quality line drawings should be submitted and should be sharp and show a high contrast. Lettering on drawings should be of professional quality or generated by *high-resolution* computer graphics and should be large enough to be legible when the figure is reduced in print (i.e. 6 to 12 points after reduction). Symbols used to identify points within a graph should be large enough that they will be easily

distinguishable after reduction. Authors are asked to limit the choice of symbols for data points to the following: ● ○ ■ □ ▲ △ ▼ ▽ ◆ ◇ + ×. Grid lines that are to be reproduced must be shown in black.

(b) Halftone and color photographs should be of sufficient quality to permit accurate reproduction. The best results will be obtained if authors match the contrast and density of all figures appearing on a single plate. Magnification scales on photographs should be indicated by means of bars (–). Color plates will be paid for by the author.

Figures may be submitted in the following formats: Adobe Illustrator, Canvas, EPS, Microsoft Excel, Microsoft PowerPoint, Microsoft Word, PDF. Most graphics programs have the option to save figures in one or more of these formats. Please note that pasting figures created in another format into any of these programs will result in poor-quality figures that will not be acceptable.

Acknowledgments

The Acknowledgments section can be used to thank those individuals who provided technical support, reagents or materials, advice or other assistance to the authors during the performance of the work or the preparation of the manuscript, but whose involvement does not rise to the criteria expected for authorship. This section should also identify the source(s) of support for the research presented in the paper.

References

All references should be cited in the text by italicized Arabic numerals in parentheses (in order of appearance). The list of references cited should be double-spaced and should begin on a separate page in numerical order. Literature cited should be limited to material in the open literature; reports, private communications, etc. should be given as footnotes with adequate information as to their source and availability. References should be appropriate and not unnecessarily numerous. The identification of unpublished results and private communications may also be made directly in the text, in parentheses. Note the following format for references:

1. T. Stamato and N. Denko, Asymmetric field inversion gel electrophoresis: A new method for detecting DNA double-strand breaks in mammalian cells. *Radiat. Res.* **121**, 196–205 (1990).
2. D. M. Bates and D. G. Watts, *Nonlinear Regression Analysis and Its Applications*. Wiley, New York, 1988.
3. J. D. Chapman, Biophysical models of mammalian cell inactivation. In *Radiation Biology in Cancer Research* (R. E. Meyn and H. R. Withers, Eds.), pp. 21–32. Raven Press, New York, 1980.

In the case of papers with more than 10 authors, only the first 9 authors and the last author should be listed in the reference.

Abbreviations of journal names should follow the style of *Index Medicus*, *Medline* and *The ACS Style Guide*, 2nd ed. Inclusive pagination should always be given.

Manuscript Checklist

Authors are encouraged to use the following checklist when preparing manuscripts for submission to the journal:

1. Have SI units been used where appropriate? Please remember that cGy and cSv should be used only for values less than 1 Gy and 1 Sv, respectively.

2. If abbreviations have been used, are they standard? If it is necessary to use a number of abbreviations, please provide a glossary as a footnote.
3. Has the correct nomenclature been used?
4. Are all the words used in the paper in standard use or to be found in a high-standard dictionary?
5. Will the paper be intelligible to interested readers who may not know the jargon of the field? Has jargon been kept to a minimum?
6. Are references done in the *Radiation Research* format? Are they cited in the text correctly and in the correct order? Are dissertations, unpublished reports, etc. cited as footnotes?
7. Has a running title been provided?
8. If the first author is not the author to whom correspondence should be addressed, is the corresponding author identified on the title page and in a footnote on the footnotes page?
9. Are all footnotes listed on a separate page?
10. Are figures cited in the text in the correct order? Do figure legends and text agree? Are the same terms, numbers, etc. used? Are errors given? Has an indication been given of how lines in the figures have been fitted to the data?
11. Do figure labels agree with legends and text?
12. Are figures the right size for the journal? Are the lettering and data points large enough to be legible after reduction to fit the journal page?
13. Are tables cited in the text in the correct order?
14. For revised manuscripts: Has the revised manuscript been approved by all coauthors? Have any authors been deleted or added? If so, has an explanation been provided?

SUBMISSION

All manuscripts must be submitted online at <http://radiatres.allentrack.net>.

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PROOFS

Proofs will be sent to the author by e-mail, together with reprint order forms and scale of reprint prices. The author's institution will be asked by the Radiation Research Society to pay a

part of the cost of publication in the form of a page charge which, if honored, entitles the institution to 100 free reprints or one PDF of the published paper. There will be no discrimination against papers for which page charges are not paid.

AUTHOR SUBMISSION OF PUBLISHED PAPERS TO OPEN ACCESS SITES

Some funding agencies now ask or require that copies of published papers written with support from their funding be placed in open access repositories, where they will be available without cost. In some cases, journal editors are being asked to ensure that the papers posted on a specific website accurately represent the papers published in their journals.

To ensure the integrity of the papers published on open access sites, including personal, departmental, and institutional sites, *Radiation Research*, with the approval of the Radiation Research Society Council, has established a policy requiring that all authors who submit their papers to open access repositories or websites do so by submitting a PDF of the final paper that has been obtained from the Journal through the payment of page charges. For papers that are in press, authors who pay page charges will be given the option of receiving either a PDF or 100 reprints; authors may also obtain both a PDF and reprints for an additional charge. For papers that have already been published, authors who paid page charges and received reprints may purchase a PDF at a nominal cost; a PDF will be provided upon request to authors who paid page charges but did not order reprints. Authors who did not pay page charges prior to publication must pay the page charges if they wish to obtain a PDF.

Authors should note that the costs of page charges cover only about one third of the cost of processing and publishing their manuscripts. The remainder of the publication costs are recovered through subscription costs, advertising, and other sources. Because of this, the costs of page charges in *Radiation Research* are far less than the mandatory publication charges assessed by “open access” journals.

ABBREVIATIONS

The following abbreviations may be used in the text without definition.

A, ampere
a.c., alternating current
a.m., ante meridiem
Ab, antibody
 mAb, monoclonal antibody
ACTH, adrenocorticotropin
AIDS, acquired immunodeficiency syndrome
ANOVA, analysis of variance
apo, apolipoprotein (also apo A, apo B, etc.)
ATP, adenosine triphosphate (also ADP, AMP, etc.)
bp, base pair
Bq, becquerel
BrdU, BrdUrd, bromodeoxyuridine
BSA, bovine serum albumin
C, coulomb
°C, degree(s) Celsius
cAMP, cyclic AMP
CFU, colony-forming unit

CoA, coenzyme A
cpm, counts per minute
cps, counts per second
CT, computer-assisted tomography
D, absorbed dose
 *D*₀
 *D*_q
d.c., direct current
Da, dalton
 kDa, kilodalton
DEAE, diethylaminoethyl
df, degrees of freedom
DMEM, Dulbecco's modified Eagle's medium
DMSO, dimethylsulfoxide
DNA, deoxyribonucleic acid
 cDNA, complementary DNA
 mtDNA, mitochondrial DNA
 rDNA, ribosomal DNA
DNP, dinitrophenyl
DSB(s), double-strand break(s)
DTT, dithiothreitol
EBV, Epstein-Barr virus
ED₅₀, 50% effective dose
EDTA, ethylenediaminetetraacetic acid
EGF, epidermal growth factor
EGTA, ethyleneglycon-*bis*(α -aminoethyl ether)*N,N'*-tetraacetic acid
ELISA, enzyme-linked immunosorbent assay
ENDOR, electron nuclear double resonance
EPR, electron paramagnetic resonance
eV, electron volt(s)
exp, exponential
FACS®, registered trademark of Becton Dickinson for a fluorescence-activated cell sorter
FBS, fetal bovine serum
FCS, fetal calf serum
FISH, fluorescence *in situ* hybridization
FITC, fluorescein isothiocyanate,
g, gram
g, unit of gravity
GM-CSF, granulocyte macrophage colony-stimulating factor
GSH, glutathione, reduced
Gy, gray
H&E, hematoxylin and eosin
H, dose equivalent
h, hour
HBSS, Hanks' balanced salt solution
HDL, high-density lipoprotein

H_E , effective dose equivalent
Hepes, *N*-2-hydroxyethylpiperazine-*N'*-ethane sulfonic acid
HIV, human immunodeficiency virus
HPLC, high-performance liquid chromatography
Hz, hertz
i.m., intramuscular, intramuscularly
i.p., intraperitoneal, intraperitoneally
i.v., intravenous, intravenously
IgA, IgB, etc., immunoglobulin A, B, etc.
IL, interleukin (e.g. IL2)
IR, infrared (*not* ionizing radiation)
J, joule
K, degree(s) kelvin
 K , equilibrium constant
kb, kilobase
 K_m , Michaelis constant
kVp, peak kilovoltage
LD₅₀, 50% lethal dose
LDL, low-density lipoprotein
LET, linear energy transfer
liter(s), liter(s) (do not abbreviate)
 μ l, microliter(s)
 ml, milliliter(s)
ln, natural logarithm
log, logarithm
LPS, lipopolysaccharide
m, meter(s)
 cm³, cubic centimeter(s)
 μ m, micrometer(s)
 M , molar
M, morgan
MEM, minimum essential medium
min, minute
mmHg, millimeters of mercury
mol, mole(s)
mol. wt., molecular weight
MRI, magnetic resonance imaging
 n , number in study, group
NAD, nicotinamide adenine dinucleotide (also NADH, NADP, etc.)
no., number
NS, not significant
OD, optical density
OER, oxygen enhancement ratio
 P , probability
p.m., post meridiem
Pa, pascal

PAGE, polyacrylamide gel electrophoresis
PAS, periodic acid-Schiff reagent
PBL, peripheral blood lymphocyte
PBS, phosphate-buffered saline
PCR, polymerase chain reaction
PDGF, platelet-derived growth factor
PET, positron emission tomography
PHA, phytohemagglutinin
Pipes, piperazine-*N,N*-bis(2-ethanesulfonic acid)
PMA, phorbol myristate acetate
PMSF, phenylmethylsulfonyl fluoride
r, correlation coefficient
r.m.s., root mean square
RBE, relative biological effectiveness
RFLP, restriction fragment length polymorphism
RNA, ribonucleic acid
 mRNA, messenger RNA
 mtRNA, mitochondrial RNA
 nRNA, nuclear RNA
 rRNA, ribosomal RNA
 tRNA, transfer RNA
rpm, revolutions per minute
s, second(s)
SD, standard deviation
SDS, sodium dodecyl sulfate
SEM, standard error of the mean
SOD, superoxide dismutase
SSB(s), single-strand break(s)
SSC, standard saline citrate
Sv, sievert
T, tesla
 $t_{1/2}$, half-life
TCA, trichloroacetic acid
TGF, transforming growth factor
TLC, thin-layer chromatography
TNF, tumor necrosis factor
Tris, *tris*(hydroxymethyl)-aminomethane
U, unit(s)
IU, international unit(s)
UV, ultraviolet
V, volt(s)
VLDL, very low-density lipoprotein
W, watt(s)
kW, kilowatt(s)