

# In Vitro Cellular & Developmental Biology - Plant

## Instructions for Authors

In Vitro Cellular & Developmental Biology – Plant (IVP) publishes peer-reviewed original research and reviews concerned with the latest developments and state-of-the-art research in plant cell and tissue culture and biotechnology from around the globe.

Established in 1965, IVP combines the official journals of the Society for In Vitro Biology's Plant Division (SIVB) and the International Association for Plant Biotechnology (IAPB).

There are six issues per year, containing highly relevant, original research.

Four issues - published on behalf of the SIVB - cover cellular, molecular and developmental biology research using in vitro grown or maintained organs, tissues or cells derived from plants.

Two special issues – published on behalf of the IAPB deal with plant tissue culture, and molecular and cellular aspects of plant biotechnology.

All articles are peer reviewed and should follow the format for regular original articles. Brief articles will be considered, using the same format as regular articles. The novelty of the contribution should be emphasized. Articles must have significant original content including:

- Appropriate experimental design and data analysis procedures
- Understanding of a scientific problem
- Identification of gene(s), physiology or biochemistry with measurable and quantifiable impact on agriculture or the environment
- Broad applicability of knowledge to multiple species and environments

When submitting a manuscript for consideration, authors should select the matrix heading which best covers the scope of their manuscript.

### Matrix Areas and Criteria for Consideration:

1. **Invited Reviews and Feature Articles** – Review and feature articles of current interest that advance our understanding of recent research on focused topics are invited by the Invited Reviews Editor in consultation with the Editors-in-Chief. Authors may submit topics with brief outlines to the Invited Reviews Editor for consideration. *Criteria: By editorial invitation or pre-approval.*
2. **Symposium and Workshop Proceedings** – Papers presented at the annual SIVB Congresses, and to other professional conferences, are encouraged to be written and submitted as Symposium or Workshop Proceedings for peer review. Collections of several papers from the same symposium or conference are encouraged, but individual proceedings articles are also welcomed. *Criteria: Must satisfy criteria of appropriate matrix subject area below.*
3. **Biotechnology/Genetic Transformation/Functional Genomics** – Transformation methods showing recovery of confirmed transgenic plants; transgene expression/regulation; plant expression vectors; promoter/enhancer/terminator effects; transgene product structure–function; transgene combinations; field evaluation; bioinformatics. *Criteria: Significant advance in conceptual knowledge and/or technological efficiency; molecular evidence of independent transformation events (Southern analysis using restriction enzyme that cuts once within the transferred DNA region for primary transformants; PCR analysis plus phenotype analysis for progeny generations; or insertional flanking sequence information); characterization of transgene expression levels (using Real Time PCR or other appropriate technology) and/or characterization of transgene product or functionality; recovery of whole plants.*
4. **Cell Biology** – Cell cycle; cytodifferentiation and cytoskeleton; cell-cell interactions/signaling; protein targeting; organelles; structure–function relationships. *Criteria: Significant advance in conceptual knowledge; molecular characterization of system.*
5. **Developmental Biology/Morphogenesis** – Embryogenesis/embryogeny; gametogenesis/androgenesis; organogenesis; floral differentiation/development. *Criteria: Significant advance in conceptual knowledge and/or technological efficiency applicable to multiple genotypes; recovery and characterization of whole plants and/or progeny; histological evidence of novel developmental pathway(s). Manuscripts reporting on technical improvements on a specific variety/species where previous information is available, or on formation of shoots/roots without indicating the efficiency of recovery of transplantable plants will NOT be accepted.*

6. **Micropropagation** – Automation; bioreactors; contamination control; disease indexing; scale-up; novel applications of technology; commercial production; cryogenic storage. *Criteria: Significant advance in conceptual knowledge and/or technological efficiency; recovery and characterization of whole plants; detailed molecular characterization of genetic fidelity; demonstrated application for ex situ conservation and/or restoration of endangered species. Manuscripts reporting on technical improvements on a specific variety/species where previous information is available, on formation of shoots/roots without indicating the efficiency of recovery of transplantable plants, or demonstration of no somaclonal variation through limited molecular analysis will NOT be accepted.*
7. **Molecular Farming/Metabolic Engineering/Secondary Metabolism** – Transgenic production of recombinant proteins and pharmaceuticals such as antibodies, edible vaccines, industrial enzymes, etc.; biotransformation; metabolic flux; bioactive/medicinal compounds; bioreactors; scale-up. *Criteria: Significant advance in production efficiency for targeted metabolites; analytical characterization of intermediates, products, enzymatic activities, and/or demonstration of biological efficacy; molecular evidence of transformation when applicable.*
8. **Physiology** – Plant growth regulators; primary metabolism; regulatory processes; biochemical and signal transduction pathways. *Criteria: Significant advance in conceptual knowledge; appropriate molecular, biophysical and/or biochemical characterization of system.*
9. **Somatic Cell Genetics** – Somaclonal variation; epigenetics; mutagenesis; somatic hybridization; haploidization; T-DNA/transposon tagging; homologous recombination. *Criteria: Significant advance in conceptual knowledge and/or technological efficiency; molecular characterization of somatic hybrids, haploids, or heritability of mutation(s).*

Two special issues (numbers 2 and 5, published March/April and September/October) are published as the official journal of the IAPB, and include original manuscripts, feature and review articles, commentary, and IAPB official notifications. The IAPB maintains a completely separate and independent international editorial review board for these two issues. Original manuscripts dealing with plant tissue culture and molecular and cellular aspects of plant biotechnology are the focus of these two issues and are not divided into the preceding matrix categories.

## MANUSCRIPT SUBMISSION REQUIREMENTS

### Professional Code of Conduct

Publication Ethics: The journals *In Vitro Cellular and Developmental Biology - Plant* (both SIVB and IAPB) subscribe to the editorial standards and guidelines for editors and authors of COPE (Committee on Publication Ethics). A detailed explanation of our ethical standards can be found at <http://publicationethics.org/resources/code-conduct>. These guidelines include a code of conduct and best practice guidelines for journal editors. All authors submitting articles to this journal are expected to comply with these standards. Reviewers and Editors will use the best practice guidelines for reviewing, evaluation and editing processes of manuscripts submitted to the journal.

Plagiarism: Plagiarism refers to the inappropriate use of images or passages of text that have previously been published by the submitting authors (self-plagiarism) or by other authors that may or may not be referenced.

### ONLINE SUBMISSION

Authors must submit their articles to *In Vitro Cellular and Developmental Biology - Plant* online. A wide range of submission file formats is supported, including: Word, RTF, TIFF, GIF, JPEG, EPS, Excel and PowerPoint. PDF is not an acceptable file format for submission.

During the submission process authors will be given the option between submitting their manuscript for publication in the regular *In Vitro Cellular and Developmental Biology - Plant* issues or in the special two IAPB issues. The manuscripts will then be assigned to the respective Chief Editor.

Chief Editor, SIVB issues:

John Finer

Professor, The Ohio State University

Wooster, OH 44691, USA

[Finer.1@osu.edu](mailto:Finer.1@osu.edu)

Chief Editor, IAPB issues:

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Victoria 3083, Australia

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## SUBMIT ONLINE

(<http://www.editorialmanager.com/ivpl/>)

Please submit papers on animal-related materials to:

Tetsuji Okamoto

Hiroshima University

tetsuok@hiroshima-u.ac.jp

[www.springer.com/11627](http://www.springer.com/11627)

## MANUSCRIPT PREPARATION

Manuscripts are to be submitted in their final form. Papers must be written in English, and authors are urged to aim for clarity, brevity, and accuracy of information and language. Authors whose first language is not English should have their papers checked for linguistic accuracy by a native English speaker. The Chief Editors may be contacted for recommendations on a scientific editing service, if the English presentation is not to the journal standards.

Submitted manuscripts should conform to the following format and sequence. The Reviews format is similar to that for Articles described below, except that the body of the text may substitute major topic headings for Materials and Methods, Result, and Discussion. In Reviews, the Methods are integrated into the text or legend to figures and Results and Discussion are combined.

Type double-spaced, and order the elements comprising the manuscript as follows:

- Title Page
- Abstract
- Key Words
- Introduction
- Materials and Methods
- Results
- Discussion (may be combined with Results)
- Conclusions
- Appendix (if any)
- Acknowledgements
- References
- Tables
- Figure Legends
- Figures

**TITLE PAGE:** The title page should include

- the title of the article
- author(s)' name(s) and affiliation(s) (the department and institution from which the work originated)
- complete contact information for the one corresponding author including mailing and email address.
- suggested running head (not to exceed 40 characters, including spaces)

Note that the affiliation should be a footnote to the author's name.

**ABSTRACT:** An abstract is to be provided, preferably no longer than 250 words. Do not use abbreviations, footnotes, or references in the abstract. **NOTE:** there is no abbreviation section in submissions. Abbreviations are identified on their first use in the main text of the article.

**KEY WORDS:** A list of 4–5 key words is to be provided directly below the abstract. Key words should express the precise content of the manuscript, as they are used for indexing purposes.

**INTRODUCTION:** The introduction provides a brief review of relevant literature and contains embedded justification for the research. The introduction usually ends with a brief and general overview of key results.

**MATERIALS AND METHODS:** Materials and Methods should provide sufficient detail so that procedures are well understood and can be repeated. Any initial reference to equipment, kits, etc should be followed by the manufacturer or supplier, city of origin, state (if in the USA) and country of origin.

**RESULTS AND DISCUSSION:** The Results and Discussion sections may be combined or separate.

**ACKNOWLEDGMENTS:** All acknowledgments (including those for grant and financial support) should be included in one separate paragraph that directly precedes the references section.

## REFERENCES

The list of references should only include works that are cited in the text and that have been published or accepted for publication. Personal communications should only be mentioned in the text.

In the text, references should be cited by author and year (e.g. Jordan 2000; Jordan and Somers 2006; Jordan et al. 2007) and listed in alphabetical order in the reference list.

### JOURNAL ARTICLES:

Abdel-Rahman MM, Widholm JM (2010) Maize tissue culture plant regeneration ability can be improved by polyethylene glycol treatment. *In Vitro Cell Dev Biol - Plant* 46:509–515

### SINGLE CONTRIBUTIONS IN A BOOK:

Name(s) and initial(s) of all authors; year; title of article; editor(s); title of book; edition; volume number; publisher; place of publication; page numbers.

Example: Klein TM (2011) Particle bombardment; An established weapon in the arsenal of plant biotechnologists. In: Stewart CN, Touraev A, Citovsky V, Tzfira T (eds) *Plant transformation technologies*, Wiley-Blackwell, Ames West Sussex Oxford, pp 53-71

### BOOK:

Name and initial(s) of all authors; year; title; publisher; place of publication.

Example: Wang K (2006) *Methods in Molecular Biology: Agrobacterium Protocols*, vol 1. Humana Press, Totowa New Jersey

### AGENCY PUBLICATION:

Council of science editors (CSE) style guide. 7th ed. Reston, VA: Council of Science Editors; 2006.

### WEB PAGES:

Article by DOI (with page numbers): Nguyen KT, Arsenault PR Weathers PJ (2011) Trichomes + roots + ROS = artemisinin: regulating artemisinin biosynthesis in *Artemisia annua* L. *In Vitro Cell Dev Biol – Plant* 47:329-338. doi: 10.1007/s11627-011-9343-x

Article by DOI (before issue publication with page numbers): Nguyen KT, Arsenault PR Weathers PJ (2011) Trichomes + roots + ROS = artemisinin: regulating artemisinin biosynthesis in *Artemisia annua* L. *In Vitro Cell Dev Biol – Plant* (in press). doi: 10.1007/s11627-011-9343-x

Article in electronic journal by DOI (no paginated version): Nguyen KT, Arsenault PR Weathers PJ (2011) Trichomes + roots + ROS = artemisinin: regulating artemisinin biosynthesis in *Artemisia annua* L. *In Vitro Cell Dev Biol – Plant*. doi: 10.1007/s11627-011-9343-x

Online document: Doe J (2010) Title of subordinate document. In: The dictionary of substances and their effects. Royal Society of Chemistry. Available via DIALOG. <http://www.rsc.org/dose/title of subordinate document>. Cited 15 Jan 2010

Online database: Healthwise Knowledgebase (2011) US Pharmacopeia, Rockville. <http://www.healthwise.org>. Cited 21 July 2011

Supplementary material/private homepage: Doe J (2010) Title of supplementary material. <http://www.privatehomepage.com>. Cited 22 Feb 2010

University site: Doe J (2008) Title of preprint. <http://www.uni-heidelberg.de/mydata.html>. Cited 25 Dec 2008

FTP site Doe J (2010) Trivial HTTP, RFC2169. <ftp://ftp.isi.edu/in-notes/rfc2169.txt>. Cited 12 Nov 2010

Organization site: ISSN International Centre (2006) Global ISSN database. <http://www.issn.org>. Cited 20 Feb 2007

## NOMENCLATURE

The recommendations of the Society for In Vitro Biology Committee on Terminology should be followed. Schaeffer WI (1990) Terminology associated with cell, tissue and organ culture, molecular biology and molecular genetics. *In Vitro Cell Dev Biol* 26:97–101.

## TABLES AND FIGURES

TABLES: Each table should be numbered consecutively with Arabic numerals. Footnotes to tables should be indicated by lower-case superscript letters. If you use data from another published or unpublished source, obtain permission and acknowledge fully.

**LEGENDS:** Legends must be brief, self-sufficient explanations of the figures and tables in no more than four or five lines. Remarks such as "For explanation, see text" should be avoided. The figure legends should be typed double-spaced and grouped together on a separate page. When symbols, arrows, numbers or letters are used to identify parts of the illustration, identify and explain each one clearly.

**FIGURES:** Figures should be limited to those essential for the text. Results should not be duplicated by presentation of the same results in both a graph and table. Color may be used without charge for the electronic edition of the journal if files are supplied but will appear in the printed version at the author's expense: \$534 per article (+VAT). **NOTE:** If you wish your figures to be printed in color, you will have the opportunity to make this request after your paper enters production. At such time an e-mail will be sent to authors asking them to select an option for color printing of figures.

**ALL FIGURES,** whether photographs, graphs, or diagrams, should be numbered consecutively. If figures are created electronically, please see Guidelines for Electronically Produced Figures for Print. Line drawings should be supplied as clear black and white drawings suitable for reproduction. All lines should be of uniform thickness. Letters and numbers should be of professional quality and proper dimensions. All figures submitted should allow for high quality reproduction at a same size permitting direct printing (with no reduction), usually 12.7 by 17.3 cm (5 by 7 inches) but no larger than 20.3 by 25.4 cm (8 by 10 inches). The publisher reserves the right to reduce figures. Micrographs should have an internal magnification marker; the marker size should be stated in the figure legend. If photographs of persons are used, either the subjects must not be identifiable or their pictures must be accompanied by written permission to use the photograph.

## Guidelines for Electronically Produced Illustrations for Print

### GENERAL

- Send figures separately from the text (i.e. files should not be integrated with text files).

### VECTOR (line) GRAPHICS

- Vector graphics exported from a drawing program should be stored in EPS format. High quality Excel files are also acceptable.
- Suitable drawing program: Adobe Illustrator. For simple line art the following drawing programs are also acceptable: PowerPoint, Corel Draw, Freehand, Canvas.
- No rules narrower than 0.25 pt.
- No gray screens paler than 15% or darker than 60%.
- Screens meant to be differentiated from one another must differ by at least 15%.
- **HALFTONE FIGURES**
- Black & white and color figures should be saved in JPG, TIFF or EPS formats.
- Figures should be created using Adobe Photoshop whenever possible.

### GRAPHICS FROM VIDEOS

- Separate files should be prepared for the frames from a video that are to be printed in the journal. When preparing these files you should follow the same rules as listed under Halftone Figures.

### MULTIMEDIA ARTICLE AND DYNAMIC MANUSCRIPT SUBMISSION REQUIREMENTS (I.E. STREAMING VIDEOS)

Multimedia articles are papers where the heart of the article is the video and, generally, only an abstract and references are included. Dynamic articles are regular articles with video(s) included as electronic supplementary material.

Upon submission of multimedia or dynamic articles, the author(s) will be required to submit the video in the following format:

- For multimedia articles, video clips should not exceed 9 minutes. For dynamic articles, video clips should not exceed 3 minutes and each manuscript should not contain more than 3 video clips.
- Multimedia file for review and submission: MPEG-1 file with the largest frame size (usually 320 x 240 pixels) that will fit on a CD and will be playable on a Windows-based computer.
- The content of these files must be identical to that reviewed and accepted by the editors of the In Vitro Plant and Animal Journals.
- All narration should be in English.
- There should be a "manuscript" submitted with the video that includes a title page, abstract and key words, as well as references if needed.

## DYNAMIC MANUSCRIPT

A dynamic manuscript is a print article with imbedded video material. Up to 3 (one minute maximum each) videos per manuscript submission will be accepted. Make sure to note in your manuscript the placement of the video clips. All standard instructions for manuscript and video submission should be followed for a dynamic manuscript submission.

## SPRINGER OPEN CHOICE

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