

## Instructions to authors **Biological Research**

### Scope and Editorial Policy

**\*BIOLOGICAL RESEARCH\*** (formerly the Archivos de Biología y Medicina Experimentales) is the official journal of the Sociedad de Biología de Chile (Chilean Biology Society). This journal, founded in 1964 and renamed in 1992, is a quarterly publication that spans the broad spectrum of experimental biological research.

**\*BIOLOGICAL RESEARCH\*** is an openaccess journal that publishes original articles and requested reviews in the diverse fields of experimental biology, such as biochemistry, cell biology, developmental biology, genetics, genomics, immunology, marine biology, molecular biology, plant biology, physiology, and systems biology. Manuscripts should be presented as fulllength papers, short communications or reviews (as requested by the editors).

In an attempt to continually improve the impact and competitiveness of this journal, manuscripts will receive immediate attention upon their arrival. Submitted manuscripts will be evaluated by at least two independent reviewers who are either members of the Editorial Board or ad hoc referees. The reviewers, experts in the area to which the manuscript pertains, will critically analyze the manuscript in a timely manner. Acceptance for publication is based on the scientific content, originality and presentation of the material. Accepted manuscripts will be published within the next months of their final approval date.

### Style and Preparation of Manuscripts

#### **GENERAL INFORMATION** **COSTS OF PUBLICATION**

Beginning March 15, 2010 , a fee of US\$72 per printed page is required from the authors whose manuscripts have been accepted. This fee provides partial support for publication costs. Figures in color will be accepted only if the authors can assume full printing costs (approximately US\$600 per printed page).

To facilitate the review process and editorial processing, authors should carefully comply with the following instructions.

Manuscripts should be submitted via e-mail to increase the speed and accuracy of the publication processes. The text of the manuscript should be submitted in a single file (pdf format). The corresponding author's last name should appear in the file name (i.e., Smith.pdf). Figures should be

submitted separately in pdf, png or jpg format. Each figure should be submitted in a separate file and the name of these files should include the corresponding author's last name as well as the corresponding figure number (i.e., Smith\_Fig1.png). Files should be sent as attachments to Ms. Yolanda Zambrano, Secretary Biological Research, email: [socbiol@biologiachile.cl](mailto:socbiol@biologiachile.cl)

Submissions must be accompanied by a cover letter from the author who will be responsible for correspondence regarding the manuscript as well as interchange with the potential reviewers and editorial staff. The submission package must also include an affidavit containing the manuscript title, the number of figures associated with the manuscript and an declaration stating that:

1. All data contained are accurate and all statements asserted as facts are based on careful research by the author(s).
2. All authors named have participated in the work in a substantive way and are prepared to take public responsibility for the work.
3. The manuscript being submitted to this journal has never, with the exception of publications in conference abstracts or thesis, been published in total or in part and is not being submitted for publication elsewhere.

This statement must be signed and dated by all of the authors and accompanied by their printed names. Authors from different countries or institutions may sign separate copies of the same statement.

Please provide the names and addresses of 4-6 researchers of recognized competence in the field who may be considered as referees. If necessary, also provide a list of potential referees who may have a conflict of interest.

Manuscripts from any country will be considered for publication, provided they are written in English. American spelling and punctuation are preferred. Do not hyphenate single words and do not break words at the end of a line. Neologisms, jargon and non-standard technical terminology should be avoided.

Manuscripts must be typed and double spaced throughout, leaving a 2.5 cm (1 inch) margins on all sides. Authors are advised to keep copies of all work submitted, as the editorial office cannot accept responsibility for damage or loss.

Abbreviations and symbols should be used sparingly and, when used, must be defined when introduced. Use only standard abbreviations and

symbols in the text, tables, and illustrations. Special characters and non-English words should be italicized.

## **PARTS OF THE MANUSCRIPT**

### **1. TITLE PAGE**

1a) **Title of Paper** (in lower-case letters). The title should be concise but informative, as it is frequently used for subject indexing. It should not include abbreviations or chemical formulas.

1b) **Authors' Names** (in upper-case letters). All authors must have directly and substantially participated in the reported study. Authors should be listed by full first name, middle initial, and full last name (e.g.: JOHN C JONES).

1c) **Institution(s)**. Indicate the location at which the research was conducted (laboratory, department, institute, school, university, city, state, country). To indicate the affiliations of different authors to different departments or institutions, use numbers in superscripts after each author's name and before the corresponding department or institution.

1d) **Corresponding Author**. Indicate the full name of the author to whom correspondence should be sent as well as his/her complete mailing address (do not translate the mailing address!). Please include email, telephone and fax numbers.

1e) When an author's current address differs from that of the institution(s) where the work was carried out, this may be indicated by a footnote, identifying the author and footnote with an asterisk.

### **2. ABSTRACT**

A single paragraph of 200 words or less, on a separate page, should clearly and concisely state the purpose of the research, basic procedures, main findings, and the principal conclusions. It should be intelligible to someone who has not read the text. Avoid the use of abbreviations and highly specialized terms in the abstract.

2a) **KEY TERMS**. Select three to six key terms to allow the paper to be appropriately indexed. These terms should appear below the abstract, on the same page. They should be listed alphabetically in lower case. Single words or composite terms may be used (e.g.: transcription factor, monoclonal antibodies, myosin, neural crest, primordial germ cells).

### **3. TEXT**

Begin on a new page. The body of the paper should be divided into sections, as indicated below (3a-3e). Section headings must be centered and typed in upper case. Blank lines are used before and after headings and after subheadings, but NOT between paragraphs of the same section. Do not justify the right margin. Subsections may be used for better organization in the presentation of Methods, Results, and Discussion. Any subheadings must be in lower case and italics and begin at the left margin. Do not indent the first paragraph of sections and subsections: begin them at the left margin. Subsequent paragraphs should be indented five spaces from the left margin.

3a) **INTRODUCTION.** This section states the purpose of the article without an extensive review of the subject and utilizes only the most pertinent references. Indicate the reason(s) for the study and, when appropriate, the hypothesis to be tested.

3b) **METHODS.** Describe the procedures used briefly but with sufficient detail for other researchers to reproduce the results.

The design of the experiment must state the number of subjects involved in the study and the measurements that give rise to the reported values. Indicate whether the measurements were made on different subjects or performed repeatedly on the same subject.

For studies involving human subjects, authors must assure that their work was conducted in conformance with the principles embodied in the Declaration of Helsinki. Authors must also include a statement affirming that the experiments were performed with the knowledge and the consent of each research subject or the parent or guardian when the subject was a child.

Studies involving experimental animals must conform to the Guiding Principles in the Care and Use of Laboratory Animals, endorsed by the American Physiological Society. The source of animals used in experiments should be mentioned, and except in the case of common laboratory animals, references should include their binomial nomenclature in italics. Italicized binomial nomenclature of plants and microorganisms should also be included, as well as their varieties and sources. For experiments in the field of bacterial genetics, the recommendations of Demerec et al., *Genetics* (1966) 54: 61-76 should be followed.

Commonly used equipment should be identified generically. However, special equipment that could have a bearing on the results obtained should be identified by manufacturer, serial number, and place of origin.

For chemical nomenclature, the conventions adopted by the Biochemical Society should be followed (see Biochem J 209: 1-27,1983). Drugs must be identified by their generic names (in lower case). If it is necessary to provide brand names and their sources, place them in parentheses (capitalized when appropriate). Enzymes should be identified when first mentioned and in accordance with the Enzyme Commissions (EC) of the International Union of Biochemistry.

The Methods section should include precise information on the statistical analyses performed. Indicate the manner in which results are expressed (means,  $\pm$  SDs or SEMs; or medians and ranges or confidence limits); whether parametric (chi-square, Student's t-tests, ANOVA) or nonparametric (Wilcoxon, Kruskal-Wallis, Friedman, Quade, Kolmogorov-Smirnoff) tests were used, correlation coefficients (Pearson's product-moment or Spearman's rank) were employed, etc.

3c) **RESULTS.** Findings should be described in this section without discussion of their significance. Tell the reader clearly and exactly what your findings were. Try to quantify whenever possible.

Decimal values should be limited to three decimal places and indicated with a period, not a comma (e.g.:  $p < 0.001$ ). Algebraic notation is recommended for smaller values (e.g.:  $p = 7 \times 10^{-5}$ ). Large numbers (thousands, millions, etc.) should be separated every three places by commas.

Provide information on the variability and statistical significance of data reported. Mean values must be accompanied by standard deviations (SDs) or standard errors of the means (SEMs), but not both. Indicate which of the statistics is employed and the number of observations from which they were derived. Statistics related to the same variable (e.g.: mean and SEM) must be expressed to the same number of decimal places.

Data may be presented in Tables or Figures (see below) when strictly necessary, but the same data should not be reported under both forms. Do not repeat in the Text all the data appearing in the Tables and Illustrations.

3d) **DISCUSSION.** This section should be concise and emphasize the new and significant aspects of the study, as well as the conclusions that follow from them.

The discussion should focus on the interpretation of the results obtained. Emphasis should be placed on the biological significance of statistically significant effects. State whether the results obtained provide an answer

to the questions posed by the study or support the hypothesis presented in the Introduction.

Discussion of previous observations must be related to the present findings and speculations must rest upon these findings. Negative results may provide useful conclusions and merit publication if these results were obtained from carefully designed and performed experiments.

3e) **ACKNOWLEDGEMENTS.** Specify grant support. Acknowledge only those individuals who have made substantial contributions to the study and who agree to be mentioned.

#### **4. REFERENCES**

Bibliographical references should be listed in alphabetical order by author's last name. If there is more than one reference for an author or a group of authors, the references should be listed chronologically, with the earliest publication first. In two-author papers with the same first author, the order must be alphabetical by the second author's last name. When three or more authors are listed, the order will be chronological according to the first author only (disregarding the order of subsequent authors' names), as these references will be cited in the text by the principal author only, followed by the abbreviation "et al."

Each reference should include last names and initials of all authors, entirely in upper case letters. There should be no punctuation used within the name and no space between initials (e.g.: OBRIEN or MCDONALD, rather than O'BRIEN or MC DONALD), and the names of individual authors should be separated by commas (e.g.: DOE JJ, JONES SE, SMITH BW). The names are followed by the publication year in parentheses, complete title of the article (capitalizing only the first letter of the first word), abbreviated name of the journal (initials in upper case, no periods), volume number followed by a colon, and the page numbers of the article. Do not include issue or part numbers.

In the case of book chapters, give the names of the editors (last name and initials) in upper case followed by "(ed)" or "(eds)" in parentheses, the name of the book (capitalizing only the first letter of the first word), city, colon, publisher, the abbreviation "pp" followed by the beginning and ending page numbers of the pertinent chapter. Avoid all unnecessary periods and commas.

#### **Examples:**

EYZAGUIRRE C, KOYANO H (1965) Effects of hypoxia, hypercapnia, and pH on the chemoreceptor activity of the carotid body in vitro. J

Physio, London 178:385-409.

LOWRY OH, ROSEBROUGH NJ, FARR AL, RANDALL RJ (1951) Protein measurement with the Folin phenol reagent. J Biol Chem 193:265-275.

REYES JG, SANTANDER M, MARTÍNEZ PL, ARCE R, BENOS DJ (1994) A fluorescence method to determine picomole amounts of Zn (II) in biological systems. Biol Res 27 (in press).

ROGERS DW (1983) BASEC Microcomputing and Biostatistics. Clifton NJ: Humana Press. pp:105-174. SIEGLBAUM SA, KOESTER J (1991) Ionic channels. In: KANDEL ER, CHWARTZ JH, JESSEL TM (eds) Principles of Neural Science. 3rd ed. Amsterdam: Elsevier. pp:66-79.

URETA T, MEDINA C, PRELLER A (1987) The evolution of hexokinases. Arch Biol Med Exp 20:343-357.

#### **4.1 REFERENCES IN TEXT**

References should be cited in the text of the journal with the authors' last names and year of publication appear in parentheses [e.g.: (Miller, 2001)], or as part of the sentence [e.g.: "...Miller (2001) reported that ..."]. When citing two-author papers, give both last names [e.g.: (Eyzaguirre and Koyano, 1999)]. Papers with three or more authors should be cited by the first author's last name followed by the abbreviation "et al." separated from the year by a comma (e.g.: Lowry et al., 2000).

All citations in the text should appear in the list of references. Authors are responsible for verifying the references against the original documents.

Manuscripts that have been accepted for publication but not yet released should be included in the Reference section by indicating "in press" in parentheses after the journal name of the journal in which it will be published. Information from manuscripts submitted but not yet accepted should be cited only in the text as "unpublished observations," or "manuscript in preparation" or "personal communication" within parentheses. This type of citation must be verified by the author against the original document and approved by those named; the editors may request their written authorization. If the content of papers in press, submitted or in preparation is essential for the understanding of the present paper, they should accompany the manuscript submitted herein.

#### **5. TABLES**

Table should be numbered consecutively with Roman numerals, and each must be submitted on a separate page.

Each table must include a brief title and sufficient experimental detail to be intelligible without reference to the text. Column headings must clearly express their respective contents and units of measurement. Furthermore, data that remain the same should not be repeated on each line of the table, but rather should appear as footnotes under each table.

Mean values and dispersion measures (standard deviation, range) are preferred to individual observations, but the number of individuals contributing to the statistics must be included. The significance of differences between tabulated values may be indicated by asterisks, specifying their levels at the footnote to the table, along with the probability test used (e.g.: paired Student's t-test: \* $p < 0.005$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ ).

## **6. LEGENDS FOR ILLUSTRATIONS & FIGURES**

Legends for all figures and illustrations must be typed on separate pages (one per page). Figures should be numbered consecutively with Arabic numerals. Each figure must include a title and a legend describing the results in sufficient detail for comprehension without reference to the text. However, do not repeat general information that has been properly placed in the Methods section or conclusions to be derived from data presented in the figure that are described in the Results section.

Illustrations should be cited within the text by the unabbreviated word "Figure," when written as part of a sentence and as "(Fig.)" when appearing within parentheses. The preferred location of each figure should be indicated on the left margin of the text.

## **7. ILLUSTRATIONS**

The preferred method to submit illustrations is in digitalized format and sent either attached to an e-mail or on a disk submitted with hard copies of the text. Figure illustrations should be submitted separately in pdf, png or jpg format. Each figure should be submitted in a separate file and the name of these files should include the corresponding author's last name as well as the corresponding figure number (i.e., Smith\_Fig1.png). Alternatively, they may be supplied on paper no larger than 21 by 27 cm and presented as original drawings, black-and-white glossy photographs or computer-generated laser prints on highgloss paper. Numbers and lettering should be large enough to allow for a minimum height of 1.5 mm after photographic reduction for a 7 cm column width. Each figure should be marked on the reverse side with number, title of the paper, and authors' names.

If a hard copy is sent, the manuscript must be accompanied by at least one set of original illustrations for the printer. Each copy of the manuscript must include photocopies of the illustrations (originals, in the case of photomicrographs).

Histograms composed of different bars (solid, open, stippled, hatched, crosshatched, horizontally striped, vertically striped) must be explained in the legends, which should also indicate whether superior vertical lines represent SDs or SEMs. If the number of observations is the same for all groups, it may be so indicated in an inset ( $n = ##$ ). In the event of different numbers for groups, they should be indicated at the bottom or top of the bars.

For graphs where curves are fitted, the legends should indicate whether the fit line was adjusted by sight, calculated from a certain equation, or constructed by a specific computer program.

Photomicrographs should be prepared with letters, arrows, and asterisks that contrast with the background and highlighted with a contrasting shadow if necessary. Length scales on photomicrographs are preferable to indications of enlargements on the legends.

Authors who wish to compose their photomicrographs to the final size of reproductions should consider that the figures themselves should be 7 cm wide for a single column and 15 cm wide for a double column. Height should not surpass 22 cm, although less is preferable to allow for the placement of legends at the bottom of the figures. Authors should indicate on the back of these illustrations that they should be reproduced at 100%.

When previously published illustrations are used, authors must obtain written permission from the copyright holder (author, journal, society, or publisher), which must then be submitted to the editor of Biological Research along with the manuscript. The manuscript must include the appropriate credit line with the corresponding figure legend, as well as mention in the Acknowledgements section.

## **SPECIAL SECTIONS**

**SHORT COMMUNICATIONS** are brief reports of concise but complete and relevant scientific findings or innovations in methods and instrumentation. They should not be preliminary publication of full-length reports in preparation.

Short Communications should be written for non-specialist readers and with a minimum of technical jargon. The text must not exceed eight double-spaced, typed pages, with a maximum of two figures or tables and

25 references. A very brief initial abstract should summarize the rationale, main finding(s) and conclusion. The following text must be presented without subheadings, and the first and last paragraphs must be devoted to the introduction and conclusion, respectively.

Methods may be restricted to the experimental design, mentioning common procedures and references to previous use of special techniques. Results and discussion may be combined. References should be complete and follow the style acceptable for full-length papers.

REVIEWS may present a comprehensive overview of a given subject or may focus on a particular aspect. Reviews are solicited by the editor and are restricted to authors with recognized expertise in the subject area. Nonetheless, authors may propose reviews on a given subject.

**MANUSCRIPTS SENT TO THE AUTHORS FOR REVISION OR ADDITIONAL EXPERIMENTS SHOULD BE RETURNED WITHIN TWO MONTHS; OTHERWISE THEY WILL BE TREATED AS NEW SUBMISSIONS.**

#### Submission of Manuscripts

- **Secretary**  
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