DEVELOPMENTAL BIOLOGY
An official journal of the Society for Developmental Biology

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DESCRIPTION

*Developmental Biology* (DB) publishes original research on mechanisms of development, differentiation, and growth in animals and plants at the molecular, cellular, genetic and evolutionary levels. Areas of particular emphasis include transcriptional control mechanisms, embryonic patterning, cell-cell interactions, growth factors and signal transduction, and regulatory hierarchies in developing plants and animals.

Research Areas Include:

- Molecular genetics of development
- Control of gene expression
- Cell interactions and cell-matrix interactions
- Mechanisms of differentiation
- Growth factors and oncogenes
- Regulation of stem cell populations
- Evolution of developmental control
- Gametogenesis and fertilization

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For queries please contact our editorial office at db@elsevier.com

AUDIENCE

Cell and Developmental biologists. Focuses on: mechanisms of development, differentiation, and growth in animals and plants.
IMPACT FACTOR

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ABSTRACTING AND INDEXING

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GUIDE FOR AUTHORS

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We now differentiate between the requirements for new and revised submissions. You may choose to submit your manuscript as a single Word or PDF file to be used in the refereeing process. Only when your paper is at the revision stage, will you be requested to put your paper in to a 'correct format' for acceptance and provide the items required for the publication of your article.
To find out more, please visit the Preparation section below.

Introduction and article types

Scientific Guidelines for Authors submitting to Developmental Biology

Developmental Biology's goal is to publish high quality papers providing causal insight into the cellular and molecular mechanisms that govern developmental processes.

Studies which simply confirm an established functional role for a developmental component by presenting analysis in a new species lack sufficient novelty for consideration. Descriptive studies will only be considered if/when they represent a timely and novel insights or resources to the field.

The following article types are available for authors:

Original Research Papers

Developmental Biology seeks to publish only the very best papers that contribute new information to our understanding of developmental mechanisms. We require that manuscripts specifically address biological relevance and conform to the following guidelines:

Expression profiling and gene expression studies must contain supporting functional data. Studies solely based on analysis of expression by microarray, northern blots, PCR or in situ hybridization that are too descriptive or preliminary would not justify full review.

Developmental Biology is pleased to publish classical experimental embryology papers that provide unusual new insights.

Experiments using interfering DNA or proteins to address gene function are expected to be highly controlled. In particular, experiments with Morpholino, RNAi, siRNA or dominant negative constructs are expected to contain very precise controls to address the specificity of the effects observed.

Studies in which the expression, structure or function of a gene/protein is altered but leads to no phenotypic consequences are not appropriate. Furthermore, studies of mutants which simply show that a gene/protein is required for development will be discouraged unless attempts are made to address the mechanistic basis, causal roles or tissues and processes affected.

Experiments using stem cells must advance our understanding of biological functioning. Studies that simply grow/isolate stem cells from a tissue and show what markers they express are not appropriate.

Studies using cell culture must show direct (in vivo) relevance in a developmental context.

Resource Papers

Resource papers are original research papers which provide important and timely information that will have an impact on the work of developmental biologists. Examples of such papers are studies describing novel spatial gene expression patterns and gene phylogeny, new model systems or containing a usable collection of data of particular value to the field. This would not include, for example, a description of the expression pattern of a gene in one species that has already been described in another species, or an expression pattern with no obvious link to a developmental process.
Please note, authors submitting a Resource Paper should select "Research Paper" article type and designate "Resource" under Manuscript Category in Additional Information (step 3 of submission). No specific formatting restrictions are applied to Resource papers; however, we encourage authors to prepare succinct descriptions, so to have Resource papers as readily usable references for scientists.

**Short Communications**

Short communications are intended to provide quick publication of good impact results, thus portraying current advances in the field of Developmental Biology. This new format of paper in DB should contain approximately four figures and a single scientific conclusion. Although there is no specific word limit, typical short communications are in the range of 2,000-3,000 words.

**Review Articles**

Review articles are intended to reach a broad audience of readers from investigators in the field to new graduate students learning the material for the first time. We encourage submissions of review articles on established topics in the field but also on timely and provocative areas of research. Review Articles are by invitation; scientists who wish to contribute a review should send a pre-submission inquiry to one of the editors.

**Opinion papers (DB Perspectives)**

This article type is intended to raise new ideas and challenge current dogma. An abstract is still required but the format is flexible. Perspectives are subject to the same review process as original papers, but may receive expedited consideration.

**Technique**

Technique provide a space for protocols and technologies that advance the field of Developmental Biology. Novel solutions and applications of technologies at the frontier with other areas of science will be considered of particular importance. No specific formatting requirements are applied to these articles, protocols are encouraged as long as an appropriate introductory background and aim of the technique and representative images are included.

**Commentary**

DB accepts commentaries on newly published articles of particular relevance to the developmental biology field. Commentaries should provide an insightful perspective on a topic just published in a journal by discussing the context, existing problems and/or implications of a new finding. A commentary may also speculate on future directions of a certain topic and may include a personal opinion. Commentaries should be no longer than 2000 words and should not contain an abstract.

**Key resources table**

We encourage authors to submit a key resources table during submission. The Key Resources Table serves to highlight materials and resources (including genetically modified organisms and strains, cell lines, reagents, software, experimental models, and original source data for computational studies) essential to reproduce results presented in the manuscript. Literature listed in the Key Resources Table must be included in the References list. We highly recommend using RRIDs (see [https://scicrunch.org/resources](https://scicrunch.org/resources)) as the identifier for antibodies and model organisms in the Key Resources Table. Please do not add custom headings or subheadings to the Key Resources Table. Please download and fill out this [template](https://example.com/template). The Key Resources Table should be referenced at the end of the Materials & Methods section and uploaded as a separate file in the submission process.

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Developmental Biology supports the presentation of all experimental data in its final published articles online and in print. For this reason word length and figure numbers are not restricted (except for Short Communications) and supplementary data are generally not supported.
For large datasets such as microarrays, RNAseq, ChIP-seq, proteomic analysis, etc. whose publication would be impossible within a regular article, Developmental Biology offers its authors the possibility to submit these data and their description as a companion paper to Data in Brief. See appropriate paragraph below for explanation.

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For questions on the reviewing and submission process please contact the Developmental Biology Editorial Office at: DB@elsevier.com

**BEFORE YOU BEGIN**

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**Changes to authorship**

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Publication of a research article in *Developmental Biology* is taken to imply that the authors are prepared to distribute all non-commercially obtained materials used in the experiments (e.g. cells, DNA, antibodies, primary data), to other academic researchers for their own use or for verification. All nucleic acid and protein sequences must have been deposited in the appropriate databases and the Accession Numbers cited in the paper.

Data from microarray and other similar screens:

Please see the MGED open letter specifying microarray standards at [http://www.mged.org/Workgroups/MIAME/miame_checklist.html](http://www.mged.org/Workgroups/MIAME/miame_checklist.html). Authors submitting manuscripts relying on microarray or similar screens must supply the data as Supplementary data (see below) at the time of submission, along with the completed MIAME checklist. The data must be MIAME-compliant and supplied in a form that is widely accessible. The microarray data must also be submitted to either the GEO ([http://www.ncbi.nlm.nih.gov/geo/](http://www.ncbi.nlm.nih.gov/geo/)) or ArrayExpress ([http://www.ebi.ac.uk/arrayexpress/](http://www.ebi.ac.uk/arrayexpress/)) databases, with accession numbers at or before acceptance of the paper for publication. The editors understand that on occasion authors may not feel it appropriate to deposit the entire data set at the time of publication of this paper. We are therefore willing to consider exceptions to this requirement in response to a request from the authors, which must be made at the time of initial submission or as part of an informal pre-submission enquiry.

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Upon acceptance of the manuscript for publication in DB, authors reporting mouse gene expression data from RNA in situ hybridization, immunohistochemistry, Northern blot, Western blot and RT-PCR experiments are requested to submit pertinent data to the Mouse Gene Expression Database (GXD). These data submissions will receive accession numbers that may then be inserted into the manuscript. Please see GXD’s guidelines for electronic data submission at [http://www.informatics.jax.org/mgihome/GXD/GEN/gxd_submission_guidelines.shtml](http://www.informatics.jax.org/mgihome/GXD/GEN/gxd_submission_guidelines.shtml).

Gene and protein nomenclature

The journal supports the use of the official nomenclature for genes and proteins and discourages the use of outdated and incorrectly formatted names and symbols. To this end, we encourage authors before submission to confirm the current official name and/or symbol for all genes and proteins mentioned in their articles following the guidelines listed in the following online resources:

**Arabidopsis:** The Arabidopsis Information Resource (TAIR) - nomenclature guidelines
Chicken: Chicken Gene Nomenclature Consortium (CGNC)

Drosophila: FlyBase - nomenclature guidelines

Human: Human Gene Nomenclature Committee (HUGO)

Mouse: Mouse Genome Informatics (MGI) - Mouse nomenclature guidelines

Nematodes: WormBase - nomenclature guidelines

Rat: Rat Genome Database (RGD) - Rat nomenclature guidelines

Xenopus: Xenbase - Xenopus nomenclature guidelines

Yeast: Saccharomyces Genome Database (SGD) - nomenclature guidelines

Zebrafish: ZFIN - Zebrafish nomenclature guidelines

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There are no strict formatting requirements but all manuscripts must contain the essential elements needed to convey your manuscript, for example Abstract, Keywords, Introduction, Materials and Methods, Results, Conclusions, Artwork and Tables with Captions. If your article includes any Videos and/or other Supplementary material, this should be included in your initial submission for peer review purposes. Divide the article into clearly defined sections. It is not necessary to format your manuscript in double column layout, even if the journal has a double column layout.
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To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your word processor.

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State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

*Material and methods*

Provide sufficient details to allow the work to be reproduced by an independent researcher. Methods that are already published should be summarized, and indicated by a reference. If quoting directly from a previously published method, use quotation marks and also cite the source. Any modifications to existing methods should also be described.

*Results*

Results should be clear and concise.

*Discussion*

This should explore the significance of the results of the work, not repeat them. A combined Results and Discussion section is often appropriate. Avoid extensive citations and discussion of published literature.

*Conclusions*

The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

**Essential title page information**

- **Title.** Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.
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Highlights are mandatory for this journal as they help increase the discoverability of your article via search engines. They consist of a short collection of bullet points that capture the novel results of your research as well as new methods that were used during the study (if any). Please have a look at the examples here: example Highlights.

Highlights should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point).

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A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

**Graphical abstract**

Although a graphical abstract is optional, its use is encouraged as it draws more attention to the online article. The graphical abstract should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of $531 \times 1328$ pixels ($h \times w$) or proportionally more. The image should be readable at a size of $5 \times 13$ cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files. You can view Example Graphical Abstracts on our information site.

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Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

**Acknowledgements**

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

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List funding sources in this standard way to facilitate compliance to funder's requirements:

Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].

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- TIFF (or JPG): Bitmapped line drawings: use a minimum of 1000 dpi.
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**References**

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