DESCRIPTION

Differentiation is a multidisciplinary journal dealing with topics relating to cell & tissue differentiation, organogenesis, development, cellular structure and function. Differentiation at the molecular, cellular and tissue levels, and the use of transgenic, targeted mutagenesis, transcriptomic, computational and synthetic approaches to problems of differentiation are of particular interest to the journal.

The journal publishes full-length articles and research reports containing original work in any of these areas. We also welcome reviews and commentaries on topics of current interest, as well as perspectives.

The principal subject areas the journal covers are:
- embryonic patterning and organogenesis in diverse research organisms
- human development and congenital malformation
- mechanisms of cell lineage commitment
- establishment of cellular polarity
- stem cell differentiation
- cell reprogramming mechanisms
- stability of the differentiated state
- cell and tissue interactions in vivo and in vitro
- signal transduction pathways in development and differentiation
- differentiation in regeneration and ageing
- therapeutic and synthetic applications of differentiation processes
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INTRODUCTION
Focusing in the functional mechanisms of development, cell differentiation, plasticity and dedifferentiation, Differentiation prioritizes experimental studies. High quality manuscripts of a descriptive nature and those describing novel techniques are also encouraged. The Journal also publishes review articles of current interest.

Types of paper
Differentiation will consider original manuscripts multiple areas of cell and developmental biology including:
- embryonic patterning and organogenesis in diverse research organisms
- human development and congenital malformation
- mechanisms of cell lineage commitment
- establishment of cellular polarity
- stem cell differentiation
- cell reprogramming mechanisms
- stability of the differentiated state
- cell and tissue interactions in vivo and in vitro
- signal transduction pathways in development and differentiation
- differentiation in regeneration and ageing
- therapeutic and synthetic applications of differentiation processes.

Original Research Paper
Differentiation seeks to publish informative papers that contribute new information to our understanding of mechanisms of development and differentiation. We require that original research papers specifically address biological relevance and conform to the following guidelines: Experiments using functional perturbations to address protein function should be controlled. In particular, experiments with Morpholino, RNAi, siRNA or dominant negative constructs are expected to contain controls to address the specificity of the effects observed. Original research papers should have testable hypotheses and describe mechanistic biological processes.

Expression profiling and gene expression studies should be marked as Resource Papers (see description below). Studies including analysis of expression by RNA sequencing, microarray, northern blots, PCR, in situ hybridization, or immunohistochemistry that are descriptive, but move community knowledge forward, should be submitted as a Resource Paper. Furthermore, studies of mutants which simply show that a gene/protein is required for development or in which the expression, structure or function of a gene/protein is altered but leads to no phenotypic consequences are only appropriate as Resource Papers.

Resource Papers
Resource papers are original research papers, which are descriptive or comparative in nature, but may lack in depth mechanistic studies. Examples of such papers are studies describing novel spatial and temporal gene or protein expression patterns, descriptive transcriptomic, proteomic, or metabolomic studies of differentiation processes, identifying processes of development and differentiation in emerging or novel model systems or comparative analyses that are valuable to the field. The Editorial Board will take the novelty of resource papers into account and will assess the potential positive impacts on the field prior to sending papers for review.

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.

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Short communications are intended to provide quick publication of timely and impactful results, thus portraying current advances in the field of Differentiation. The format of a short communication paper should contain approximately four figures (or less) and a single scientific conclusion. Typical short communications are in the range of 2,000-3,000 words.

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With rapid advances in techniques to visualize and define biological processes, technical notes provide a space for the publication of novel protocols, computational tools and/or technologies that advance the field of differentiation. Development of techniques and applications combining multidisciplinary tools 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.

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**Review Article**

Review articles are intended to reach a broad audience of readers, from established investigators in the field of differentiation 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 welcome reviews on new discoveries in established fields. For authors who wish to contribute a review, but are not sure of its relevance to or fit in Differentiation, please send a pre-submission inquiry to one of the editors.

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Perspectives are intended to raise new ideas, challenge current dogma, or provide opinions on scientific topics relevant to the community. An abstract is required, but the format of the paper is flexible. Perspectives are subject to the same review process as original papers, but may receive expedited consideration. Perspectives should provide an insightful and thoughtful discussion of a topic relevant to the field including recent papers published in the journal. These articles can discuss the context, existing problems, and/or implications of a new finding. A Perspective may also speculate on future directions of a certain topic and may include a personal opinion.

**Contact details for submission**

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- Indicate per figure if it is a single, 1.5 or 2-column fitting image.
- For Word submissions only, you may still provide figures and their captions, and tables within a single file at the revision stage.
- Please note that individual figure files larger than 10 MB must be provided in separate source files.

A detailed [guide on electronic artwork](#) is available.

**You are urged to visit this site; some excerpts from the detailed information are given here.**

*Formats*

Regardless of the application used, when your electronic artwork is finalized, please 'save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):

- EPS (or PDF): Vector drawings. Embed the font or save the text as 'graphics'.
- TIFF (or JPEG): Color or grayscale photographs (halftones): always use a minimum of 300 dpi.
- TIFF (or JPEG): Bitmapped line drawings: use a minimum of 1000 dpi.
- TIFF (or JPEG): Combinations bitmapped line/half-tone (color or grayscale): a minimum of 500 dpi is required.

**Please do not:**

- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); the resolution is too low.
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