DESCRIPTION

*Differentiation* is a journal published on behalf of the International Society of Differentiation. It publishes articles on cell & tissue differentiation, organogenesis, development, cellular structure and function.

Submissions on 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 particularly welcomed.

*Differentiation* 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 journal publishes topics including:
- Embryonic patterning and organogenesis in diverse research organisms
- Human development and congenital malformation
- Mechanisms of cell lineage commitment
- 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.

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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.
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Technical Note

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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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