DESCRIPTION

Gene has an open access mirror journal Gene: X, sharing the same aims and scope, editorial team, submission system and rigorous peer review.

Gene publishes papers that focus on the regulation, expression, function and evolution of genes in all biological contexts, including all prokaryotic and eukaryotic organisms, as well as viruses.

Gene strives to be a very diverse journal and topics in all fields will be considered for publication. Although not limited to the following, some general topics include:

- DNA Organization, Replication & Evolution - Focus on genomic DNA (chromosomal organization, comparative genomics, DNA replication, DNA repair, mobile DNA, mitochondrial DNA, chloroplast DNA).
- Expression & Function - Focus on functional RNAs (microRNAs, tRNAs, rRNAs, mRNA splicing, alternative polyadenylation)
- Regulation - Focus on processes that mediate gene read-out (epigenetics, chromatin, histone code, transcription, translation, protein degradation).
- Cell Signaling - Focus on mechanisms that control information flow into the nucleus to control gene expression (kinase and phosphatase pathways controlled by extra-cellular ligands, Wnt, Notch, TGFbeta/BMPs, FGFs, IGFs etc.)
- Profiling of gene expression and genetic variation - Focus on high throughput approaches (e.g., DeepSeq, ChIP-Seq, Affymetrix microarrays, proteomics) that define gene regulatory circuitry, molecular pathways and protein/protein networks.
- Genetics - Focus on development in model organisms (e.g., mouse, frog, fruit fly, worm), human genetic variation, population genetics, as well as agricultural and veterinary genetics.
- Molecular Pathology & Regenerative Medicine - Focus on the deregulation of molecular processes in human diseases and mechanisms supporting regeneration of tissues through pluripotent or multipotent stem cells.

Gene encourages submission of novel manuscripts that present a reasonable level of analysis, functional relevance and/or mechanistic insight. Gene also welcomes papers that have predominantly a descriptive component but improve the essential basis of knowledge for subsequent functional studies, or provide important confirmation of recently published discoveries.
The primary criteria for acceptance are that the work is original and scientifically sound. The journal appreciates that standards of novelty are arbitrary, differ among disciplines and geographic locations, as well as change with time. In partnership with Editors, Referees and Authors, the journal will promote the revision of papers to ensure that accepted papers are reasonably complete and competitive with concurrent submissions in a given field.

AUDIENCE
Molecular biologists, geneticists, biotechnologists

IMPACT FACTOR
2018: 2.638 © Clarivate Analytics Journal Citation Reports 2019

ABSTRACTING AND INDEXING
EMBiology
BIOSIS Citation Index
Chemical Abstracts
Current Contents - Life Sciences
Embase
PubMed/Medline
Pascal Francis
Science Citation Index
Reference Update
Scopus

EDITORIAL BOARD

Co Editors-in-Chief
Andre van Wijnen, Mayo Clinic Department of Biochemistry and Molecular Biology, 200 First Street SW, Rochester, Minnesota, 55905-0001, United States
Takashi Gojobori, King Abdullah University of Science and Technology, 23955-6900, Thuwal, Saudi Arabia

Executive Editors
Susana Chuva de Sousa Lopes, Leiden University Medical Center, PO Box 9600, 2300 RC, Leiden, Netherlands
Astrid Engel, Tulane University Department of Epidemiology, 1430 Tulane Avenue, New Orleans, Louisiana, 70112-2705, United States
Jitesh Pratap, Rush University Division of Anatomy and Cell Biology, 1750 W. Harrison - 1409B, Jelke Southcenter, Chicago, Illinois, IL 60612, United States
Alejandro Rooney, USDA-ARS National Center for Agricultural Utilization Research, 1815 North University Street, Peoria, Illinois, IL 61604, United States
Alla Rynditch, Institute of Molecular Biology and Genetics National Academy of Sciences of Ukraine, 150 Zabolotnogo str., 03143, Kyiv, Ukraine

Review Editor
Daniel Petrovič, University of Ljubljana, Ljubljana, Slovenia

Gene Wiki Editors
Erica A. Golemis, Fox Chase Cancer Center, Philadelphia, Pennsylvania, United States
Israel Hanukoglu, Ariel University, Ariel, Israel
Andrew Su, Scripps Research Institute, La Jolla, California, United States
Ginger Tsueng, Scripps Research Institute, La Jolla, California, United States
 Kwok Wing Stephen Tsui, Chinese University of Hong Kong School of Biomedical Sciences, New Territories, Hong Kong

Associate Editors
Tarun Singh Ahluwalia, Copenhagen Prospective Studies on Asthma in Childhood, Gentofte, Denmark
Wassim Y. Almawi, University of Tunis El Manar, Tunis, Tunisia
Stilianos Arhondakis, Biomedical Research Foundation of the Academy of Athens, Athens, Greece
Gavin Ash, Charles Sturt University E H Graham Centre for Agricultural Innovation, Wagga Wagga, Australia
Negar Azarpira, Shiraz University of Medical Sciences, Transplant Research Center, Department of Pathology, Shiraz, Iran, Islamic Republic of
Ashoktaru Barat, Directorate of Coldwater Fisheries Research, Bhimtal, India
Marco Barucca, Polytechnic University of Marche, Ancona, Italy
Omer Faruk Bayrak, Yeditepe University, Istanbul, Turkey
Banu Bayram, Mugla Sitki Kocman University, Muğla, Turkey
Suleyman Bayram, Adıyaman University, Adıyaman, Turkey
Victoria P. Belancio, Tulane University, New Orleans, Louisiana, United States
Sukesh R. Bhaumik, Southern Illinois University School of Medicine Department of Biochemistry and Molecular Biology, Carbondale, Illinois, United States
George Blanck, University of South Florida, Tampa, Florida, United States
Janusz Blasiak, University of Lodz, Lodz, Poland
Karen Blyth, Beatson Institute for Cancer Research, Glasgow, United Kingdom
Carolina Bonin, Hampton University, Hampton, Virginia, United States
Adelino Canario, University of Algarve, Faro, Portugal
Fabio Caradonna, University of Palermo, Palermo, Italy
Ee-Sin Chen, National University of Singapore, Singapore, Singapore
Benoît Chénais, University of Le Mans, Le Mans, France
Tzen-Yuh Chiang, National Cheng Kung University, Tainan, Taiwan
Hoyoung Chung, National Institute of Animal Science Animal Genomics and Bioinformatics Division, Suwon, Korea, Republic of
James Davie, University of Manitoba, Winnipeg, Manitoba, Canada
Roberta Davoli, University of Bologna, Bologna, Italy
David R. Deyle, Mayo Foundation for Medical Education and Research, Rochester, Minnesota, United States
Yavuz Dodurga, Pamukkale University, Denizli, Turkey
Chun-Hai Dong, Qingdao Agricultural University, Qingdao, China
Christopher Dunlap, USDA-ARS National Center for Agricultural Utilization Research, Peoria, Illinois, United States
Ebru Emeñi-Alturfan, Marmara University, İstanbul, Turkey
Vasileios Fotopoulos, Cyprus University of Technology, Lemesos, Cyprus
Guilherme Francisco, University of Sao Paulo, São Paulo, Brazil
Mario Galindo, University of Chile School of Medicine, Santiago, Chile
Xavier Graña, Lewis Katz School of Medicine at Temple University, Philadelphia, Pennsylvania, United States
Jian-Fang Gui, Institute of Hydrobiology Chinese Academy of Sciences, Wuhan, China
Nancy Hakooz, The University of Jordan School of Pharmacy, Amman, Jordan
Kyudong Han, Dankook University, Yongin, Korea, Republic of
Larissa M. Haupt, Queensland University of Technology Institute of Health and Biomedical Innovation, Brisbane, Australia
John R. Hawse, Mayo Foundation for Medical Education and Research, Rochester, Minnesota, United States
Jing He, Sun Yat-Sen University, Guangzhou, China
Scott Herke, Louisiana State University, Baton Rouge, Louisiana, United States
Rene J. Herrera, Florida International University, Miami, Florida, United States
Rob Hooft van Huijstuijven, Bernex, Switzerland
Lin Hou, Liaoning Normal University, Dalian, China
Zhibin Hu, Nanjing Medical University, Nanjing, China
Güçin İtirli Aslan, Ege University Biotechnology Department, Izmir, Turkey
Kosei Ito, Nagasaki University, Nagasaki, Japan
Maria Ivshina, University of Massachusetts Medical School, Worcester, Massachusetts, United States
Lakshminarayan M. Iyer, National Center for Biotechnology Information, Bethesda, Maryland, United States
Michael Janitz, University of New South Wales, Sydney, New South Wales, Australia
Jean-François Jean-François Picimbon, J. Fu (Chinese Name), Qilu University of Technology, Jinan, China
Yunliang Jiang, Shandong Agricultural University, Tai’an, China
Eric T. Johnson, USDA-ARS Crop Bioprotection Research, Peoria, Illinois, United States
Ivo Kalajzic, UConn Health, Farmington, Connecticut, United States
Heu-Joo Kim, Pusan National University College of Natural Science, Busan, Korea, Republic of
Un-Kyung Kim, Kyungpook National University, Daegu, Korea, Republic of
Tamas S. Kovacs, University of Debrecen, Debrecen, Hungary
Erzsebet Kovessy, University of Pecs, Pecs, Hungary
Nitish Kumar, Central University of South Bihar Centre for Biological Sciences, Bihar, India
Rayala Suresh Kumar, Indian Institute of Technology Madras, Chennai, India
Vijay Kumar Kutala, Nizam’s Institute of Medical Sciences Department of Clinical Pharmacology and Therapeutics, Hyderabad, India
Knud Larsen, Aarhus University Department of Molecular Biology and Genetics - Flakkebjerg, Slagelse, Denmark
Laura Lasagni, University of Florence, Firenze, Italy
Caroline LePoole, Loyola University Medical Center, Maywood, Illinois, United States
Chui Pin Leaw, University of Malaya Institute of Ocean and Earth Sciences Bachok Marine Research Station, Bachok, Kelantan, Malaysia
Chuzhao Lei, Northwest Agriculture and Forestry University College of Animal Science and Technology, Yangling, Shaanxi, China
Eric A. Lewallen, Hampton University, Hampton, Virginia, United States
Shitao Li, University Medical Center Schleswig-Holstein Lubeck Campus Institute of Neurogenetics, Lübeck, Germany
Ling Ling, Agency for Science Technology and Research, Singapore, Singapore
Haijun Liu, Tianjin Institute of Animal Science and Veterinary Medicine Animal Reproductive Science Laboratory, Tianjin, China
Ji-Hong Liu, Huazhong Agriculture University, Wuhan, China
Xiaolin Liu, Northwest Agriculture and Forestry University College of Animal Science and Technology, Yangling, Shaanxi, China
Yi-Ping Liu, Sichuan Agricultural University, Yaan, China
Zhi Luo, Huazhong Agriculture University, Wuhan, China
Rami Mahfouz, American University of Beirut Medical Center Molecular Diagnostic Laboratory, Beirut, Lebanon
Avudai Maran, Mayo Clinic College of Medicine Department of Orthopedic Surgery, Rochester, Minnesota, United States
Leonardo Mariño-Ramírez, National Center for Biotechnology Information, Bethesda, Maryland, United States
Ekaterina Mirkin, Tufts University, Medford, Massachusetts, United States
Randa H. Mohamed, Zagazig University, Zagazig, Egypt
Jamil Momand, California State University Los Angeles Department of Chemistry and Biochemistry, Los Angeles, California, United States
Indrajit Nanda, University of Würzburg, Würzburg, Germany
Max van Noesel, Erasmus University Rotterdam, Rotterdam, Netherlands
Nicola Normanno, National Cancer Institute IRCCS Pascale Foundation, Napoli, Italy
Motomi Osato, National University of Singapore, Singapore, Singapore
Shazib Pervaiz, National University of Singapore, Singapore, Singapore
Daniel G. Peterson, Mississippi State University Institute for Genomics Biocomputing and Biotechnology, Mississippi State, Mississippi, United States
Miroslav Plohl, Rudjer Boskovic Institute, Zagreb, Croatia
Fabio Quondamatteo, University of Glasgow, Glasgow, Scotland, United Kingdom
José Luis Ramirez, USDA-ARS Crop Bioprotection Research, Peoria, Illinois, United States
David Ray, TEXAS TECH UNIVERSITY, Lubbock, Texas, United States
Matija Rijavec, Hospital Golnik - University Clinic of Respiratory and Allergic Diseases Golnik, Golnik, Slovenia
Sue R. Rutherford Siegel, Penn State College of Medicine, Hershey, Pennsylvania, United States
Hyun-Mo Ryoo, Seoul National University Department of Cell and Developmental Biology, Seoul, Korea, Republic of
Salvatore Saccone, University of Catania, Catania, Italy
Hee-Jeong Im Sampen, Jesse Brown VA Chicago Health Care System, Chicago, Illinois, United States
Balasubramanian Senthilkumaran, University of Hyderabad, Hyderabad, India
Wei Shen, Qingdao Agricultural University, Qingdao, China
Mirko Spiroski, Scientific Foundation SPIROSKI, Skopje, Macedonia, the former Yugoslav Republic of
Yoshiyuki Suzuki, Nagoya City University Graduate School of Natural Sciences Department of Biology and Integrated Sciences, Nagoya, Japan
Marek Switonski, Poznan University of Life Sciences, Poznan, Poland
Hanna Taipaleenmäeki, University of Hamburg Faculty of Medicine, Hamburg, Germany
Tsuyoshi Tanaka, National Institute of Agrobiological Sciences, Tsukuba, Japan
Julio Tapia, University of Chile, Santiago de Chile, Chile
Qing-Bao Tian, Hebei University, Baoding, China
Fahri Ucar, Karadeniz Technical University, Trabzon, Turkey
Udus, National Institutes of Health, Bethesda, Maryland, United States
Annalisa Varriale, Zoological Station Anton Dohrn, Napoli, Italy
Dominic C. Voon, Kanazawa University, Kanazawa, Japan
Yuji Wang, Changzhou second Peoples Hospital Affiliated to Nanjing Medical University, Changzhou, China
Matthias Wolf, University of Würzburg, Würzburg, Germany
Peng Xu, Xiamen University, Xiamen, China
Wan-Xi Yang, Zhejiang University, Hangzhou, China
Zhi Min Yang, Nanjing Agricultural University, Nanjing, China
Yuji Wang, Changzhou second Peoples Hospital Affiliated to Nanjing Medical University, Changzhou, China
Matthias Wolf, University of Würzburg, Würzburg, Germany
Waclaw Szybalski, University of Wisconsin-Madison McArthur Laboratory for Cancer Research, Madison, Wisconsin, United States
Former Editors-in-Chief

Giorgio Bernardi, Roma Tre University, Roma, Italy
Mark A. Batzer, Louisiana State University, Baton Rouge, Louisiana, United States
GUIDE FOR AUTHORS

Your Paper Your Way
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

[GENE] has an open access mirror journal, [GENE: X].

Before preparing a paper for submission to Gene, the author(s) should carefully read these instructions, and Gene’s List of Abbreviations, thus avoiding needless delays during the editorial process. Papers should be carefully prepared in Gene’s style. When a paper is submitted to Gene, the corresponding author is responsible for all authors having seen and approved the original paper and, eventually, the proofs.

The paper should be accompanied by a Cover Letter, in which the authors are invited to suggest the names of two editorial board members who could serve as Handling Editor. Authors will also need to supply the names of eight potential referees (as well as their affiliations, e-mail addresses and areas of expertise). In order to ensure a maximum of objectivity, the names of scientists the authors do not wish to be consulted in the reviewing process can also be provided, as well as any other special requests.

Gene requires all new nucleotide and amino acid sequences to be deposited. Obtain and include an accession number with all sequences. The most convenient method for submitting sequence data is by World Wide Web:

EMBL
GenBank
DDBJ

Alternatively, the stand-alone submission tool "Sequin" is available from NCBI.

If requested the database will withhold release of data until publication.

If references are quoted as 'In press', the relevant manuscript(s) should also be attached. Should authors be requested by the Editor to modify the text prior to publication, the revised version should be submitted within 2 months. After this period, the manuscript will be dealt with as a new one.

Please note that when you upload the manuscript you also have to upload a Title page containing the title of the paper, author name, affiliation and details regarding corresponding author.

Speed of Peer Review
All possible effort will be made by the Editors in order to obtain referees' comments rapidly. In principle, the authors will be informed of a decision within 6 weeks.

Types of paper
All reports should explicitly state the biological relevance of the function that is the subject of the paper.

Methods papers will be considered only if they are of general importance with considerable original and useful information. Minor improvements to existing methods are not acceptable.

Letters to the Editor that are pertinent to material published in GENE or that discuss problems of general interest are selected for publication. The author of a paper in question is usually given an opportunity to reply.

Reviews or Mini-reviews are generally solicited by the Editors of the journal. However, prospective authors interested in contributing such a paper are invited to contact the Editor-in-Chief.
Gene Wiki Reviews are invited reviews published under a dual publication model. Invited authors submit gene-specific review articles and update the corresponding Wikipedia pages. To contribute to this series, please FIRST contact the editors to verify the proposed gene(s) qualify for the series and to receive an invitation.

Please note that only the final paper should be uploaded to Editorial System. Any request to incorporate changes to the paper after submission will not be considered.

Contact details for submission
Papers should be submitted to Gene's online submission system, http://ees.elsevier.com/gene/. A PDF file comprising all text and figures is acceptable for initial submission. When submitting a revised manuscript, separate electronic files are required. For questions on the submission and reviewing process, please contact the Editorial Office at gene@elsevier.com.

Submission checklist
You can use this list to carry out a final check of your submission before you send it to the journal for review. Please check the relevant section in this Guide for Authors for more details.

Ensure that the following items are present:
One author has been designated as the corresponding author with contact details:
• E-mail address
• Full postal address

All necessary files have been uploaded:
Manuscript:
• Include keywords
• All figures (include relevant captions)
• All tables (including titles, description, footnotes)
• Ensure all figure and table citations in the text match the files provided
• Indicate clearly if color should be used for any figures in print
Graphical Abstracts / Highlights files (where applicable)
Supplemental files (where applicable)

Further considerations
• Manuscript has been 'spell checked' and 'grammar checked'
• All references mentioned in the Reference List are cited in the text, and vice versa
• Permission has been obtained for use of copyrighted material from other sources (including the Internet)
• A competing interests statement is provided, even if the authors have no competing interests to declare
• Journal policies detailed in this guide have been reviewed
• Referee suggestions and contact details provided, based on journal requirements

For further information, visit our Support Center.

BEFORE YOU BEGIN
Ethics in publishing
Please see our information pages on Ethics in publishing and Ethical guidelines for journal publication.

Studies in humans and animals
If the work involves the use of human subjects, the author should ensure that the work described has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans. The manuscript should be in line with the Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals and aim for the inclusion of representative human populations (sex, age and ethnicity) as per those recommendations. The terms sex and gender should be used correctly.

Authors should include a statement in the manuscript that informed consent was obtained for experimentation with human subjects. The privacy rights of human subjects must always be observed.
All animal experiments should comply with the ARRIVE guidelines and should be carried out in accordance with the U.K. Animals (Scientific Procedures) Act, 1986 and associated guidelines, EU Directive 2010/63/EU for animal experiments, or the National Institutes of Health guide for the care and use of Laboratory animals (NIH Publications No. 8023, revised 1978) and the authors should clearly indicate in the manuscript that such guidelines have been followed. The sex of animals must be indicated, and where appropriate, the influence (or association) of sex on the results of the study.

**Informed consent and patient details**
Studies on patients or volunteers require ethics committee approval and informed consent, which should be documented in the paper. Appropriate consents, permissions and releases must be obtained where an author wishes to include case details or other personal information or images of patients and any other individuals in an Elsevier publication. Written consents must be retained by the author but copies should not be provided to the journal. Only if specifically requested by the journal in exceptional circumstances (for example if a legal issue arises) the author must provide copies of the consents or evidence that such consents have been obtained. For more information, please review the Elsevier Policy on the Use of Images or Personal Information of Patients or other Individuals. Unless you have written permission from the patient (or, where applicable, the next of kin), the personal details of any patient included in any part of the article and in any supplementary materials (including all illustrations and videos) must be removed before submission.

**Declaration of interest**
All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential conflicts of interest include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. Authors should complete the declaration of interest statement using this template and upload to the submission system at the Attach/Upload Files step.

If there are no interests to declare, please choose: 'Declarations of interest: none' in the template. This statement will be published within the article if accepted. More information.

**Submission declaration and verification**
Submission of an article implies that the work described has not been published previously (except in the form of an abstract, a published lecture or academic thesis, see 'Multiple, redundant or concurrent publication' for more information), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder. To verify originality, your article may be checked by the originality detection service Crossref Similarity Check.

**Nucleotide Sequences**
For some accepted manuscripts the Editorial Office may use the Seek and Blastn tool ([http://scigendetection.imag.fr/TPDS2/Va/](http://scigendetection.imag.fr/TPDS2/Va/)) to query nucleotide sequences against the human genomic + transcript database. Any Seek and Blastn results will subjected to manual checking prior to taking any further action.

**Preprints**
Please note that preprints can be shared anywhere at any time, in line with Elsevier’s sharing policy. Sharing your preprints e.g. on a preprint server will not count as prior publication (see 'Multiple, redundant or concurrent publication' for more information).

**Use of inclusive language**
Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Articles should make no assumptions about the beliefs or commitments of any reader, should contain nothing which might imply that one individual is superior to another on the grounds of race, sex, culture or any other characteristic, and should use inclusive language throughout. Authors should ensure that writing is free from bias, for instance by using 'he or she', 'his/her' instead of 'he' or 'his', and by making use of job titles that are free of stereotyping (e.g. 'chairperson' instead of 'chairman' and 'flight attendant' instead of 'stewardess').
**Author contributions**

For transparency, we encourage authors to submit an author statement file outlining their individual contributions to the paper using the relevant CRediT roles: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Roles/Writing - original draft; Writing - review & editing. Authorship statements should be formatted with the names of authors first and CRediT role(s) following. More details and an example

**Changes to authorship**

Please enter details of all Authors who contributed to the work reported in the manuscript based on their seniority and contribution. The corresponding author of the paper must be indicated in the paper. All communication regarding this submission will be sent to the person who is selected as the Corresponding Author during submission. Please note that we will not be able to make any changes to the author names (adding/removing authors, change of order of authors) after the paper is accepted and moved to typesetting. In case of any queries please contact Gene@elsevier.com before completing the submission.

**Article transfer service**

This journal is part of our Article Transfer Service. This means that if the Editor feels your article is more suitable in one of our other participating journals, then you may be asked to consider transferring the article to one of those. If you agree, your article will be transferred automatically on your behalf with no need to reformat. Please note that your article will be reviewed again by the new journal. More information.

**Copyright**

Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (see more information on this). An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.

Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations. If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has preprinted forms for use by authors in these cases.

Elsevier supports responsible sharing

Find out how you can share your research published in Elsevier journals.

**Role of the funding source**

You are requested to identify who provided financial support for the conduct of the research and/or preparation of the article and to briefly describe the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement then this should be stated.

**Open access**

Authors wishing to publish open access can choose to publish open access in [GENE: X] [https://www.journals.elsevier.com/gene-x], the open access mirror journal of [GENE]. One, unified editorial team manages the peer-review for both titles using the same submission system. The authors choice of publishing model will determine in which journal, [GENE] or [GENE:X], the accepted manuscript will be published. The choice of publishing model will be blinded to referees, ensuring the editorial process is identical.

Elsevier Researcher Academy

Researcher Academy is a free e-learning platform designed to support early and mid-career researchers throughout their research journey. The "Learn" environment at Researcher Academy offers several interactive modules, webinars, downloadable guides and resources to guide you through the process of writing for research and going through peer review. Feel free to use these free resources to improve your submission and navigate the publication process with ease.
Language (usage and editing services)
Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the English Language Editing service available from Elsevier's Author Services.

Referees
Please submit the names, institutional affiliations, and e-mail addresses of eight (8) potential referees, as well as a brief description of their expertise relevant to your manuscript. Suggested reviewers should be individuals qualified to evaluate the work you have submitted. The reviewers suggested may not be current, recent or extensive collaborators of yours, and cannot have been involved in the preparation of the manuscript. Reviewers must not be members of the same institution as the authors. Members of GENE's Editorial Board are generally not available as reviewers, and should not be named as suggested reviewers.

Please note that the editor retains the sole right to decide whether or not the suggested reviewers are used. Failure to provide appropriate reviewer suggestions may result in your manuscript being returned to you without being reviewed.

Authors may request exclusion of certain referees if conflicts of interest are anticipated. However, no more than 3 such names should be given. Entire groups or institutions cannot be specified for exclusion.

PREPARATION
NEW SUBMISSIONS
Submission to this journal proceeds totally online and you will be guided stepwise through the creation and uploading of your files. The system automatically converts your files to a single PDF file, which is used in the peer-review process.
As part of the Your Paper Your Way service, you may choose to submit your manuscript as a single file to be used in the refereeing process. This can be a PDF file or a Word document, in any format or layout that can be used by referees to evaluate your manuscript. It should contain high enough quality figures for refereeing. If you prefer to do so, you may still provide all or some of the source files at the initial submission. Please note that individual figure files larger than 10 MB must be uploaded separately.

References
There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the article number or pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct.

Formatting requirements
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.

Abbreviations
Consult Gene's List of Abbreviations and the pertinent literature for accepted abbreviations, especially for genes and proteins; list all those used, even if already in Gene's list (create new abbreviations if necessary). Be meticulous with symbols. For proteins, use Roman letters with at least the first letter capitalized (e.g., Hprt, HPRT or βGal) for genes (or DNA) use italicized letters (e.g., lacZ, hprt, HPRT or cat gene, not HPRT or CAT gene). Consult the nomenclature (or usage) for the particular organism concerned to use (or create) proper gene/protein abbreviations.

Please note that the instructions related to Abstract, Keywords & Math formulae still apply to all new submissions.
The journal does not publish patient photographs except as Supplementary Information. These images should be replaced within the article with diagrams of an idealized human form indicating any phenotypic abnormality.

**Peer review**

This journal operates a single blind review process. All contributions will be initially assessed by the editor for suitability for the journal. Papers deemed suitable are then typically sent to a minimum of two independent expert reviewers to assess the scientific quality of the paper. The Editor is responsible for the final decision regarding acceptance or rejection of articles. The Editor's decision is final. More information on types of peer review.

**REVISED SUBMISSIONS**

*Use of word processing software*

Regardless of the file format of the original submission, at revision you must provide us with an editable file of the entire article. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier). See also the section on Electronic artwork.

To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your word processor.

**Article structure**

*Subdivision - numbered sections*

Divide your article into clearly defined and numbered sections. Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, ...), 1.2, etc. (the abstract is not included in section numbering). Use this numbering also for internal cross-referencing: do not just refer to 'the text'. Any subsection may be given a brief heading. Each heading should appear on its own separate line.

*Introduction*

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.

The Results and Discussion sections should refer to the data shown in the figures and tables, and briefly discuss their significance. Divide these sections into numbered subsections with short subtitles (lower-case, Roman, not underlined). Where the Results section is combined with the Discussion section, the last subsection, subtitled Conclusions, should be short and divided into points.

*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.
- **Author names and affiliations.** Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. You can add your name between parentheses in your own script behind the English transliteration. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.
• **Corresponding author.** Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. This responsibility includes answering any future queries about Methodology and Materials. **Ensure that the e-mail address is given and that contact details are kept up to date by the corresponding author.**

• **Present/permanent address.** If an author has moved since the work described in the article was done, or was visiting at the time, a 'Present address' (or 'Permanent address') may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

**Highlights**

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).

**Abstract**

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.

**Keywords**

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.

Use only words not already present in the title.

**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.).

**Formatting of funding sources**

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].

It is not necessary to include detailed descriptions on the program or type of grants and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, please include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

**Math formulae**

Please submit math equations as editable text and not as images. Present simple formulae in line with normal text where possible and use the solidus (/) instead of a horizontal line for small fractional terms, e.g., X/Y. In principle, variables are to be presented in italics. Powers of e are often more conveniently denoted by exp. Number consecutively any equations that have to be displayed separately from the text (if referred to explicitly in the text).
Footnotes
Footnotes should be used sparingly. Number them consecutively throughout the article. Many word processors build footnotes into the text, and this feature may be used. Should this not be the case, indicate the position of footnotes in the text and present the footnotes themselves separately at the end of the article.

Artwork
The journal does not publish patient photographs except as Supplementary Information. These images should be replaced within the article with diagrams of an idealized human form indicating any phenotypic abnormality.

Image manipulation
Whilst it is accepted that authors sometimes need to manipulate images for clarity, manipulation for purposes of deception or fraud will be seen as scientific ethical abuse and will be dealt with accordingly. For graphical images, this journal is applying the following policy: no specific feature within an image may be enhanced, obscured, moved, removed, or introduced. Adjustments of brightness, contrast, or color balance are acceptable if and as long as they do not obscure or eliminate any information present in the original. Nonlinear adjustments (e.g. changes to gamma settings) must be disclosed in the figure legend.

Electronic artwork
General points
- Make sure you use uniform lettering and sizing of your original artwork.
- Preferred fonts: Arial (or Helvetica), Times New Roman (or Times), Symbol, Courier.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- 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.
- Supply files that are too low in resolution.
- Submit graphics that are disproportionately large for the content.

Only if a laser-quality printer is not available (dot matrix printers are unsatisfactory) should you present professionally drawn figures in black ink on white paper. Always use large and bold lettering and heavy smoothlines to permit photographic reduction. Ensure that all symbols in the figure are large and match the explanations in the legend. Sequence figures should be either 60 nucleotides (or amino acids) in width (to fit into a single printed column), or 120-150 nt. As a rule no more than a single page is allowed for sequence figures. Add bp, nt, kb or kDa symbols above the numerals in marker lanes. Legends should be typed/printed double-spaced, on pages separate from the figures themselves. The maximum size of figures is A4: present larger figures on two or more sheeats.

Color artwork
Please make sure that artwork files are in an acceptable format (TIFF (or JPEG), EPS (or PDF) or MS Office files) and with the correct resolution. If, together with your accepted article, you submit usable color figures then Elsevier will ensure, at no additional charge, that these figures will appear in color online (e.g., ScienceDirect and other sites) in addition to color reproduction in print. Further information on the preparation of electronic artwork.
Figure captions
Ensure that each illustration has a caption. A caption should comprise a brief title (not on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.

References
Citation in text
Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication.

Web references
As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

Data references
This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.

References in a special issue
Please ensure that the words 'this issue' are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.

Reference management software
Most Elsevier journals have their reference template available in many of the most popular reference management software products. These include all products that support Citation Style Language styles, such as Mendeley. Using citation plug-ins from these products, authors only need to select the appropriate journal template when preparing their article, after which citations and bibliographies will be automatically formatted in the journal's style. If no template is yet available for this journal, please follow the format of the sample references and citations as shown in this Guide. If you use reference management software, please ensure that you remove all field codes before submitting the electronic manuscript. More information on how to remove field codes from different reference management software.

Users of Mendeley Desktop can easily install the reference style for this journal by clicking the following link:
http://open.mendeley.com/use-citation-style/gene
When preparing your manuscript, you will then be able to select this style using the Mendeley plug-ins for Microsoft Word or LibreOffice.

Reference formatting
There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct. If you do wish to format the references yourself they should be arranged according to the following examples: Duncan, C.C., Kosmidis, M.K., Mirsky, A.F., 2005. Closed head injury-related information processing deficits: An event-related potential analysis. Int. J. Psychophysiol 58, 133-157 Bure , J., Bure ov , O., Huston, J.P., 1983. Techniques and Basic Experiments for the Study of Brain and Behavior, 2nd edn., Elsevier, Amsterdam, 326 pp. Swaab, D.F., 1982. Neuropeptides. Their distribution and function in the brain. In: Buijs, R.M., P vet, P., Swaab, D.F. (Eds.), Chemical Transmission in the Brain. The Role of Amines, Amino Acids and

**Video**

Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file's content. In order to ensure that your video or animation material is directly usable, please provide the file in one of our recommended file formats with a preferred maximum size of 150 MB per file, 1 GB in total. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect. Please supply 'stills' with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For more detailed instructions please visit our video instruction pages. Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

**Data visualization**

Include interactive data visualizations in your publication and let your readers interact and engage more closely with your research. Follow the instructions here to find out about available data visualization options and how to include them with your article.

**Supplementary material**

Supplementary material such as applications, images and sound clips, can be published with your article to enhance it. Submitted supplementary items are published exactly as they are received (Excel or PowerPoint files will appear as such online). Please submit your material together with the article and supply a concise, descriptive caption for each supplementary file. If you wish to make changes to supplementary material during any stage of the process, please make sure to provide an updated file. Do not annotate any corrections on a previous version. Please switch off the 'Track Changes' option in Microsoft Office files as these will appear in the published version.

**Research data**

This journal encourages and enables you to share data that supports your research publication where appropriate, and enables you to interlink the data with your published articles. Research data refers to the results of observations or experimentation that validate research findings. To facilitate reproducibility and data reuse, this journal also encourages you to share your software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Below are a number of ways in which you can associate data with your article or make a statement about the availability of your data when submitting your manuscript. If you are sharing data in one of these ways, you are encouraged to cite the data in your manuscript and reference list. Please refer to the "References" section for more information about data citation. For more information on depositing, sharing and using research data and other relevant research materials, visit the research data page.

**Data linking**

If you have made your research data available in a data repository, you can link your article directly to the dataset. Elsevier collaborates with a number of repositories to link articles on ScienceDirect with relevant repositories, giving readers access to underlying data that gives them a better understanding of the research described.

There are different ways to link your datasets to your article. When available, you can directly link your dataset to your article by providing the relevant information in the submission system. For more information, visit the database linking page.

For supported data repositories a repository banner will automatically appear next to your published article on ScienceDirect.
In addition, you can link to relevant data or entities through identifiers within the text of your manuscript, using the following format: Database: xxxx (e.g., TAIR: AT1G01020; CCDC: 734053; PDB: 1XFN).

**Mendeley Data**

This journal supports Mendeley Data, enabling you to deposit any research data (including raw and processed data, video, code, software, algorithms, protocols, and methods) associated with your manuscript in a free-to-use, open access repository. During the submission process, after uploading your manuscript, you will have the opportunity to upload your relevant datasets directly to Mendeley Data. The datasets will be listed and directly accessible to readers next to your published article online.

For more information, visit the Mendeley Data for journals page.

**Data in Brief**

You have the option of converting any or all parts of your supplementary or additional raw data into one or multiple data articles, a new kind of article that houses and describes your data. Data articles ensure that your data is actively reviewed, curated, formatted, indexed, given a DOI and publicly available to all upon publication. You are encouraged to submit your article for Data in Brief as an additional item directly alongside the revised version of your manuscript. If your research article is accepted, your data article will automatically be transferred over to Data in Brief where it will be editorially reviewed and published in the open access data journal, Data in Brief. Please note an open access fee of 600 USD is payable for publication in Data in Brief. Full details can be found on the Data in Brief website. Please use this template to write your Data in Brief.

**MethodsX**

You have the option of converting relevant protocols and methods into one or multiple MethodsX articles, a new kind of article that describes the details of customized research methods. Many researchers spend a significant amount of time on developing methods to fit their specific needs or setting, but often without getting credit for this part of their work. MethodsX, an open access journal, now publishes this information in order to make it searchable, peer reviewed, citable and reproducible. Authors are encouraged to submit their MethodsX article as an additional item directly alongside the revised version of their manuscript. If your research article is accepted, your methods article will automatically be transferred over to MethodsX where it will be editorially reviewed. Please note an open access fee is payable for publication in MethodsX. Full details can be found on the MethodsX website. Please use this template to prepare your MethodsX article.

**Data statement**

To foster transparency, we encourage you to state the availability of your data in your submission. This may be a requirement of your funding body or institution. If your data is unavailable to access or unsuitable to post, you will have the opportunity to indicate why during the submission process, for example by stating that the research data is confidential. The statement will appear with your published article on ScienceDirect. For more information, visit the Data Statement page.

**AFTER ACCEPTANCE**

**Online proof correction**

To ensure a fast publication process of the article, we kindly ask authors to provide us with their proof corrections within two days. Corresponding authors will receive an e-mail with a link to our online proofing system, allowing annotation and correction of proofs online. The environment is similar to MS Word: in addition to editing text, you can also comment on figures/tables and answer questions from the Copy Editor. Web-based proofing provides a faster and less error-prone process by allowing you to directly type your corrections, eliminating the potential introduction of errors.

If preferred, you can still choose to annotate and upload your edits on the PDF version. All instructions for proofing will be given in the e-mail we send to authors, including alternative methods to the online version and PDF.

We will do everything possible to get your article published quickly and accurately. Please use this proof only for checking the typesetting, editing, completeness and correctness of the text, tables and figures. Significant changes to the article as accepted for publication will only be considered at this stage with permission from the Editor. It is important to ensure that all corrections are sent back to us in one communication. Please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility.
**Offprints**

The corresponding author will, at no cost, receive a customized Share Link providing 50 days free access to the final published version of the article on ScienceDirect. The Share Link can be used for sharing the article via any communication channel, including email and social media. For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. Both corresponding and co-authors may order offprints at any time via Elsevier's Author Services. Corresponding authors who have published their article gold open access do not receive a Share Link as their final published version of the article is available open access on ScienceDirect and can be shared through the article DOI link.

**AUTHOR INQUIRIES**

Visit the Elsevier Support Center to find the answers you need. Here you will find everything from Frequently Asked Questions to ways to get in touch. You can also check the status of your submitted article or find out when your accepted article will be published.

© Copyright 2018 Elsevier | https://www.elsevier.com