DESCRIPTION

*BBA Molecular Basis of Disease* addresses the **biochemistry** and **molecular genetics** of **disease** processes and models of human disease. This journal covers aspects of aging, cancer, metabolic-, neurological-, and immunological-based disease. Manuscripts focused on using animal models to elucidate biochemical and mechanistic insight in each of these conditions, are particularly encouraged. Manuscripts should emphasize the underlying mechanisms of disease pathways and provide novel contributions to the understanding and/or treatment of these disorders. Highly descriptive and method development submissions may be declined without full review.

Given the complex regulation of gene expression by a vast network of miRNA's, manuscripts describing the regulation of (disease-associated) genes by single miRNAs will only be considered if they provide genuine, novel insight in a disease mechanism. Further, studies restricted to a single cell line will not be considered unless they present truly novel insights.

The **submission** of uninvited reviews to *BBA - Molecular Basis of Disease* is strongly discouraged, and any such unsolicited review should be preceded by a presubmission enquiry to the Editorial Office (bbareviews@elsevier.com).

**Benefits to authors**
We also provide many author benefits, such as free PDFs, a liberal copyright policy, special discounts on Elsevier publications and much more. Please click here for more information on our **author services**.

Please see our **Guide for Authors** for information on article submission. If you require any further information or help, please visit our **Support Center**

AUDIENCE

Basic and clinical researchers studying molecular aspects of disease processes, Human geneticists, Biochemists, Molecular biologists, Cell biologists, Cell physiologists

IMPACT FACTOR

2018: 4.328 © Clarivate Analytics Journal Citation Reports 2019
ABSTRACTING AND INDEXING

Science Citation Index
EMBiology
Sociedad Iberoamericana de Informacion Cientifica (SIIC) Data Bases
BIOSIS Citation Index
Chemical Abstracts
Current Contents - Life Sciences
Embase
Index Chemicus
PubMed/Medline
Scopus

EDITORIAL BOARD

Executive Editors
Jeffrey Keller, Louisiana State University System, Baton Rouge, Louisiana, United States
Aging, Alzheimer’s disease, neurodegeneration, oxidative stress
Ronald Oude Elferink, Academic Medical Center Tytgat Institute for Liver and Intestinal Research, Amsterdam, Netherlands
Inherited liver disease, transgenic animal models, drug disposition, ABC transporters, lipid flippases
M. Paul Murphy, University of Kentucky, Lexington, Kentucky, United States
Vascular dementia, Alzheimer’s disease, metabolic dysfunction / diabetes, myotonic dystrophies and nucleotide expansion disorders, secretase enzymes, amyloid precursor protein, amyloid beta peptide, animal models
Michael Hsiao, Academia Sinica, Taipei, Taiwan
Cancer metastasis; metabolic reprogramming; stemness; chemoresistance; microRNA; noncoding RNA; hypertension

Scientific Editor (Elsevier, Cambridge, MA, USA)
Angela Schena

Editorial Board Members

Gianfranco Alpini, Richard L Roudebush VA Medical Center, Indianapolis, Indiana, United States
Mitochondrial; Oxidative stress, Respiration complex, Metabolism, Mitochondrial DNA mutation
Yidong Bai, University of Texas Health Science Center at San Antonio, San Antonio, Texas, United States
Shairaz Baksh, University of Alberta, Edmonton, Alberta, Canada
Piter Bosma, Academic Medical Center, Amsterdam, Netherlands
D. Allan Butterfield, University of Kentucky, Lexington, Kentucky, United States
oxidative stress, Alzheimer disease and mild cognitive impairment, redox proteomics, amyloid beta-peptide
Garth J. S. Cooper, The University of Manchester, Manchester, UK, and University of Auckland, Auckland, New Zealand
Molecular mechanisms of diabetes mellitus; experimental therapeutics of diabetes; type-2 diabetes; islet beta-cell death; islet amyloid; insulin resistance; diabetic complications; diabetic cardiomyopathy; diabetic nephropathy; diabetic neuropathy; molecular basis of dementia; molecular linkages between dementia and diabetes; Alzheimer’s disease; Huntington’s disease; amylin; insulin; hormonal regulation of metabolism
Stuart E. Dryer, University of Houston, Houston, Texas, United States
Glomerular disease; ion channels; renal physiology; calcium signaling; electrophysiology; protein interactions; membrane transport; receptors.
Jason Dyck, University of Alberta, Edmonton, Alberta, Canada
Cardiovascular disease; heart failure; cardiac energy metabolism
Peter Fickert, Hospital of the Federal State of Styria and University Hospital Graz Division of Gastroenterology and Hepatology, Weiz, Austria
Maria Figueiredo-Pereira, City University of New York, New York, New York, United States
proteasome, neuroinflammation, neurodegeneration, prostaglandin J2, cyclooxygenase
Nikolaos G. Frangogiannis, Yeshiva University Albert Einstein College of Medicine, Bronx, New York, United States
Cardiac injury and repair
Saeid Ghavami, University of Manitoba, Winnipeg, Manitoba, Canada
Autophagy; Unfolded Protein Response; Fibrotic Disease; Apoptosis; Lung Cancer; Idiopathic Pulmonary Fibrosis; Rhabdomyosarcoma; Brian tumors

**Fernando Gómez-Pinilla**, University of California Los Angeles, Los Angeles, California, United States

**Grace L. Guo**, Rutgers University Department of Pharmacology and Toxicology, Piscataway, New Jersey, United States

**B. Therese Kinsella**, University College Dublin, Dublin, Ireland

Prostanoid; prostaglandin; thromboxane; G protein coupled receptor; cardiovascular; cancer; signalling

**Sergio Lavandero**, University of Chile, Santiago de Chile, Chile

Chronic diseases, cardiovascular diseases, diabetes, cell signaling, cell death, inflammation, autophagy, mitochondria, insulin, intraorganelle communication.

**Valter D. Longo**, University of Southern California, Los Angeles, California, United States

Aging, cell signaling, IGF-1, yeast models of aging

**José E. Manautou**, University of Connecticut, Department of Pharmaceutical Sciences, School of Pharmacy, Storrs, Connecticut, United States

Aging, Alzheimer's disease, Diabetes, Mitochondria, Neurodegeneration, Oxidative stress

**Antonio Moschetta**, Padiglione Chini, UOC Medicina Interna Frugoni,Department of Interdisciplinary Medicine,Università di Bari, Bari, Italy

Nuclear Hormone Receptors, Liver Metabolic Disease, Gut-liver axis, Intestinal mucosa regeneration - tumorigenesis, Transcriptional regulation of Cholesterol and Lipid Metabolism

**Ram Nagaraj**, University of Colorado Denver School of Medicine, Aurora, Colorado, United States

Small heat shock proteins, glycation, oxidative stress, apoptosis, cataract, diabetic retinopathy

**Athanasios G. Papavassiliou**, National and Kapodistrian University of Athens School of Health Sciences, Athens, Greece

AGE/metabolic stress signaling, Bone mechanobiology, Molecular oncology, Signaling pathways in tumorigenesis, cancer mechanobiology, signal transduction to transcription factors in health and disease

**Samir Kumar Patra**, National Institute of Technology Rourkela Department of Life Science, Rourkela, India

Epigenetic mechanisms, DNA and Histone modifications, DNA demethylase and DNA demethylation mechanisms, regulation of gene expression, membrane lipid raft structure and signaling, Ras-MAPK and Hedgehog signaling pathways, Cancer stem cell and pluripotency.

**Raghavan Raju**, Augusta University, Augusta, Georgia, United States

Mitochondria, sirtuin, trauma, sepsis, oxidative stress, inflammation

**Hemachandra Reddy**, Texas Tech University System, Lubbock, Texas, United States

Aging, Amyloid Beta, Neurodegenerative diseases, Mitochondria and Mitochondrial therapeutics.

**Jun Ren**, University of Wyoming Family Medicine Residency Program - Cheyenne, Cheyenne, Wyoming, United States

**Manfredi Rizzo**, University of Palermo, Palermo, Italy

Diabetes, atherosclerosis, cardiovascular prevention, dyslipidemia, metabolic syndrome

**Luis Sobrevia**, Pontificlal Catholic University of Chile, Santiago de Chile, Chile

endothelium; trophoblast; fetus; placenta; insulin resistance; diabetes; preeclampsia; obesity in pregnancy; membrane transport; membrane receptors; adenosine; nitric oxide; L-arginine; pH; endoplasmic reticulum stress; exosomes; extracellular vesicles

**Mark Sussman**, San Diego State University Department of Biology, San Diego, California, United States

Cardiac, heart failure, stem cells, Akt kinase, Pim-1 kinase, myocardial biology

**Russell H. Swerdlow**, University of Kansas School of Medicine, Kansas City, Kansas, United States

Aging, Alzheimer's disease, Bioenergetics, Metabolism, Mitochondria, Neurodegeneration

**Ya-Xiong Tao**, Auburn University, Auburn, Alabama, United States

**Angela M. Valverde**, Biomedical Research Network Centre of Diabetes and Associated Metabolic Diseases, Madrid, Spain

Insulin resistance; obesity; non-alcoholic fatty liver disease; incretins; brown adipose tissue

**Holly Van Remmen**, Oklahoma Medical Research Foundation, Oklahoma City, Oklahoma, United States

Mitochondria; aging; sarcopenia; oxidative stress

**Arthur J. Verhoeven**, Academic Medical Center, Amsterdam, Netherlands

**Patricia Wilson**, University College London, London, United Kingdom

Kidney Genetic Disease, gene therapy, Polycystic kidney disease, Stem cells, regenerative medicine, Kidney Cancer

**Silvana Zanlungo**, Pontificlal Catholic University of Chile, Santiago de Chile, Chile
cholesterol, Niemann-Pick, neurodegeneration, liver, lipids, oxidative stress

Massimo Zeviani, University of Cambridge, Cambridge, United Kingdom
Mitochondrial Disease; Oxidative Phosphorylation; mitochondrial respiratory chain; mitochondrial DNA; mtDNA mutation.

Yingmei Zhang, Zhongyuan University of Technology, Zhengzhou, China, USA
cardiovascular and metabolic disease

Xiongwei Zhu, Case Western Reserve University School of Medicine, Cleveland, Ohio, United States
Neuroscience, Neurodegenerative diseases, Mitochondrial Oxidative Stress, Amyloid, Signal Transduction, Alzheimer's Disease, Parkinson's Disease
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

BBA Molecular Basis of Disease addresses the biochemistry and molecular genetics of disease processes and their models with a specific focus on human disease. The section covers metabolic, membrane, receptor and immunological disorders, and includes the biochemistry of differentiation disorders, tissue damage and aging. Manuscripts should emphasize the underlying mechanisms of disease pathways and provide novel contributions to the understanding and treatment of these processes. Highly descriptive and method development submissions may be declined without full review.

Types of paper

Full-length research articles (Regular paper), brief reports (BBA Research Letters), review articles and mini-reviews

Reviews and mini-reviews are typically commissioned by the Editors. All Review Articles should be authoritative, state-of-the-art accounts of the selected research field, be of high interest, balanced and accurate. Beyond summaries of important scientific developments and ideas, authors are encouraged to identify and discuss how the field may be impacted or develop in the future, including insights that may be of significance to the scientific community. All BBA Review Articles undergo rigorous and full peer review, in the same way as regular research papers, and publication cannot be guaranteed. The number of co-authors of review articles is limited to five and each author is expected to make a substantial contribution to the writing of the manuscript.

Unsolicited reviews will be considered only in exceptional cases and should be preceded by a letter of enquiry from the prospective author, who should be a recognized expert in the field of the proposed article. Presubmission enquiries may be sent to the Editorial Office (bbareviews@elsevier.com). Specifically, authors must provide the following in their review proposal: 1) Title of the review; 2) both your own and any co-author(s) affiliation and full contact details; 3) an explanation of the current interest and significance to the broad readership of the journal, that is, compelling reasons why the review should be considered; 4) a 500-600 word summary which clearly outlines what will be discussed in the article, plus up to 20 key references that indicate the intended breadth of the proposed article (please note that references should include work published in the past 2-4 years); 5) A list of the author(s)’ most recent publication contributions (up to 5) which are relevant to the field of the proposed review. Only proposals that include this information will be considered. Please be sure to specify which one of the BBA journals you request to consider your proposal.

Reviews (full-length) should provide a comprehensive analysis on topics of broad interest to the journal's readership. Reviews should be thorough, sufficiently critical and accommodate different points of view. They should stand out from other recently published reviews on the same theme. Although Reviews are not of any fixed length, they are usually 6,000 to 10,000 words in length (excluding references and figure legends), include an abstract that is no more than 150 words, up to 100 references (should include titles), and a minimum of three figures/illustrations.

Mini-reviews are succinct, focused updates of the literature related to a question of current interest in the scientific community (typically from the last 2-3 years). Subjects covered in Mini-reviews are generally narrower, either in scope or depth, than those covered in full-length Reviews. They should highlight/analyze/discuss recent and important findings and include the author's viewpoint on how the subject relates to the current state of the field. Mini-reviews are usually 2000 to 4000 words in length (excluding references and figure legends), include an abstract that is no more than 150 words, up to 50 references (should include titles), and one to three figures/illustrations.

BBA Research Letters
**BBA Research Letters** briefly report on original scientific observations that are either limited in scope or preliminary in nature. The findings should be timely and of high significance for the relevant field of research. With a focus on simple and succinct communication, BBA Research Letters do not include headings or extensive introduction, nor do they include an abstract. They are limited to 1,500 words (not including figure legends or references) and no more than 1 key figure or table; the reference list should not exceed 15 entries. Up to 3 additional figures or tables may be included as supplemental materials. The author name(s) and affiliation(s) should be placed at the end of the text.

**BBA Research Letters** are subject to review and must adhere to the quality standards and ethical guidelines outlined in the general Guide for Authors.

**Contact details for submission**  
Papers should be submitted using the **BBA Molecular Basis of Disease** online submission system [http://ees.elsevier.com/bbadis](http://ees.elsevier.com/bbadis). For questions on the submission and reviewing process, please contact the Editorial Office at bbadis@elsevier.com.

**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.

**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.

**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').

Authorship
All authors should have made substantial contributions to all of the following: (1) the conception and design of the study, or acquisition of data, or analysis and interpretation of data, (2) drafting the article or revising it critically for important intellectual content, (3) final approval of the version to be submitted.

Changes to authorship
Authors are expected to consider carefully the list and order of authors before submitting their manuscript and provide the definitive list of authors at the time of the original submission. Any addition, deletion or rearrangement of author names in the authorship list should be made only before the manuscript has been accepted and only if approved by the journal Editor. To request such a change, the Editor must receive the following from the corresponding author: (a) the reason for the change in author list and (b) written confirmation (e-mail, letter) from all authors that they agree with the addition, removal or rearrangement. In the case of addition or removal of authors, this includes confirmation from the author being added or removed. Only in exceptional circumstances will the Editor consider the addition, deletion or rearrangement of authors after the manuscript has been accepted. While the Editor considers the request, publication of the manuscript will be suspended. If the manuscript has already been published in an online issue, any requests approved by the Editor will result in a corrigendum.

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.

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.

For gold open access articles: Upon acceptance of an article, authors will be asked to complete an 'Exclusive License Agreement' (more information). Permitted third party reuse of gold open access articles is determined by the author's choice of user license.

Author rights
As an author you (or your employer or institution) have certain rights to reuse your work. More information.

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.

Elsevier journals comply with current NIH public access policy

Open access
Please visit our Open Access page for more information.

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.

Submission
Our online submission system guides you stepwise through the process of entering your article details and uploading your files. The system converts your article files to a single PDF file used in the peer-review process. Editable files (e.g., Word, LaTeX) are required to typeset your article for final publication. All correspondence, including notification of the Editor's decision and requests for revision, is sent by e-mail.

Referees
Please submit the names, addresses, and e-mail addresses of 4 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. Editorial Board members who do not have relevant expertise on the topic of your article should not be suggested. Please note that the reviewers suggested may not be current, recent or extensive collaborators of yours, and cannot have been involved in the preparation of the manuscript.

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 as noted above may result in your manuscript being returned to you without review.

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, institutions or countries 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.

Please ensure your paper includes page numbers - this is an essential peer review requirement.

Figures and tables embedded in text
Please ensure the figures and the tables included in the single file are placed next to the relevant text in the manuscript, rather than at the bottom or the top of the file. The corresponding caption should be placed directly below the figure or table.

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.

Key resources table
To enable reproducibility of the research, we encourage authors to submit a Key Resources Table, which helps make the resources clear to readers. The Key Resources Table highlights the genetically modified organisms and strains, cell lines, reagents and other resources essential to reproduce the results presented in a paper. More information is available here https://www.elsevier.com/authors/author-resources/key-resources-table
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.

Appendices
If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

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 lowercase 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.

A Regular paper should have a Summary of 100-250 words.

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.
Authors can make use of Elsevier’s Illustration Services to ensure the best presentation of their images and in accordance with all technical requirements.

**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.

**Abbreviations**
Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

**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.

**Standards for Reporting Enzymology Data (STRENDA)**
This journal follows the recommendations of the STRENDA (Standards for Reporting Enzymology Data) Commission of the Beilstein-Institut for the reporting of kinetic and equilibrium binding data. Detailed guidelines can be found at (http://www.strenda.org/documents.html) or in this pdf file. All reports of kinetic and binding data must include a description of the identity of the catalytic or binding entity (enzyme, protein, nucleic acid or other molecule). This information should include the origin or source of the molecule, its purity, composition, and other characteristics such as post-translational modifications, mutations, and any modifications made to facilitate expression or purification. The assay methods and exact experimental conditions of the assay must be fully described if it is a new assay or provided as a reference to previously published work, with or without modifications. The temperature, pH and pressure (if other than atmospheric) of the assay **must** always be included, even if previously published. In instances where catalytic activity or binding cannot be detected, an estimate of the limit of detection based on the sensitivity and error analysis of the assay should be provided. Ambiguous terms such as “not detectable” should be avoided. A description of the software used for data analysis should be included along with calculated errors for all parameters. First-order and second-order rate constants: see pdf for full instructions.

**Electrophoretic gels and blots**
Manuscripts reporting results from blots (including Western blots) and electrophoretic gels should adhere to the following guidelines: In accordance with our policy on image manipulation, the image should not be adjusted in any way that affects the scientific interpretation displayed, e.g. by strong modification of the background or contrast. Authors should be able to provide original uncropped and unadjusted blots and gels, including molecular size markers, upon request by the editor or any of the reviewers. Similarly, in case the authors use multiple blots for protein quantitation (or draw quantitative conclusions from the blots), the authors should be able to provide upon request pictures of all full blots that have contributed to this quantitation for review purposes. Quantitation should
only be performed using a minimum of 3 blots/gels, each obtained from separate experimental trials. Cropped blots in the body of the paper should retain sufficient space above and below the band (about six band widths). Any non-specific band should be labelled as such and an attempt should be made to explain its nature The image should include all relevant controls, and controls should be run on the same blot or gel as the samples. The image should also display the position of the molecular weight markers. A figure panel may not include composite images of bands originating from different blots or gels. If the figure shows non-adjacent bands from the same blot or gel, this should be clearly denoted by vertical black lines and the figure legend should provide details of how the figure was prepared. The submission of high-contrast gels and blots is discouraged, as overexposure may mask additional bands. Authors should strive for exposures with gray backgrounds. Multiple exposures should be presented in supplementary information if high contrast is unavoidable.

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
Image manipulation
While 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 as long as they are applied to the entire image and 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.

Digital images in manuscripts nearing acceptance for publication may be scrutinized for any indication of improper manipulation. BBA Molecular Basis of Disease reserves the right to ask for original data or images and, if these are not satisfactory, we may decide not to accept the manuscript.

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 JPG): Color or grayscale photographs (halftones): always use a minimum of 300 dpi.
TIFF (or JPG): Bitmapped line drawings: use a minimum of 1000 dpi.
TIFF (or JPG): 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.

**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.

**Tables**
Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules and shading in table cells.

**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 and a copy of the title page of the relevant article must be submitted.

**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:
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 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. If you do wish to format the references yourself they should be arranged according to the following examples:

Reference style

Text: Indicate references by number(s) in square brackets in line with the text. The actual authors can be referred to, but the reference number(s) must always be given.
Example: '..... as demonstrated [3,6]. Barnaby and Jones [8] obtained a different result ....'

List: Number the references (numbers in square brackets) in the list in the order in which they appear in the text.
Examples:
Reference to a journal publication:
Reference to a journal publication with an article number:
Reference to a book:
Reference to a chapter in an edited book:
Reference to a website:
Reference to a dataset:

Journal abbreviations source

Journal names should be abbreviated according to the List of Title Word Abbreviations.

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.

Submission checklist
The following list will be useful during the final checking of an article prior to sending it to the journal for review. Please consult this Guide for Authors for further details of any item.

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
• Telephone
All necessary files have been uploaded, and contain:
• Keywords
• All figure captions
• All tables (including title, description, footnotes)
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 Web)
For any further information please visit our customer support site at https://service.elsevier.com.

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