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Biochemistry

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# Scope of the Journal

*Biochemistry* provides an international forum for publishing exceptional, rigorous, high-impact research across all of biological chemistry. This broad scope includes studies on the chemical, physical, mechanistic, and/or structural basis of biological or cell function, and encompasses the fields of chemical biology, synthetic biology, disease biology, cell biology, nucleic acid biology, neuroscience, structural biology, mechanistic enzymology, and biophysics.

# Manuscript Types

Biochemistry publishes original research in three formats: Communications, Research Articles, and, for the description of new biological chemistry methods, a format called From the Bench. Biochemistry also publishes Reviews and Perspectives, as well as Viewpoints that focus attention on recent, significant discoveries in the field reported in Biochemistry or elsewhere.

**COMMUNICATIONS**. *Biochemistry* Communications are short manuscripts reserved for high-impact results. They must be prepared using the *Biochemistry* Communications template (available here). An abstract of up to 250 words is required. All other text (including title, figure/scheme captions, author names and information, acknowledgements, tables, references, etc.) must sum to 3000 words or fewer. Up to four figures/schemes are allowed, and there is no limit on the number of tables and references. The editors will make every effort to facilitate especially rapid publication of *Biochemistry* Communications by returning initial decisions within three weeks of receipt. A brief statement explaining how the manuscript meets the impact criteria stated above should be included in the cover letter that accompanies the submission. *Biochemistry* Communications must include a Table of Contents graphic. Detailed Experimental Procedures should be included in a separate Supporting Information document.

**RESEARCH ARTICLES**. *Biochemistry* Research Articles describe rigorous, significant, and high-quality advances in biological chemistry that will interest the diverse and contemporary *Biochemistry* readership. Articles contain an Introduction that places the work in context followed by sections describing Materials and Methods, Results, Discussion, and Conclusions. Results and Discussion may be combined into a single section. *Biochemistry* Research Articles include an Abstract of fewer than 250 words but no restrictions with regard to the number of figures, tables, or references. A brief statement explaining why the manuscript is appropriate for *Biochemistry* must be included in the cover letter that accompanies the manuscript. Article submissions prepared without the template should begin with a Cover Page that includes the manuscript title and all author names, with complete contact information for the corresponding author, an Abstract, and a Table of Contents graphic. Display Items (Tables, Schemes, and Figures) along with their legends should be embedded in the main text. All procedures should be described in sufficient detail to allow the results to be reproduced by others. Brief Acknowledgments and References are included at the end of the main text document.

**FROM THE BENCH**. *Biochemistry* From the Bench submissions are designed to report detailed protocols of high interest to members of the biological chemistry community: they should describe either fundamentally novel experimental, computational, or bioinformatics methods or significant improvements to established research techniques. From the Bench submissions must include a

detailed description of the method, including all technical details necessary to ensure reproducibility, and the results of a validation study that demonstrates a clear advantage of the new method when compared to currently available approaches. While the reported method should be novel, application of the method to provide new biological insight is not required.

From the Bench submissions should include a Cover Page that lists the manuscript title and names of all authors, with complete contact information for the corresponding author, an Abstract of 250 words or fewer, and a Table of Contents graphic. The main text of the manuscript should include a 1-2 paragraph Introduction that places the new method in context, followed by a detailed description of how the method was developed, tested, and validated and how it compares with previous approaches. The submission concludes with a step-by-step description that includes all technical details necessary to ensure reproducibility. Display Items (Tables, Schemes, and Figures) along with their legends should be embedded in the main text. Brief Acknowledgments and References are included at the end of the main text document. An example From the Bench article can be found here.

**REVIEWS.** Reviews should provide a comprehensive overview of a particular field or topic, including critical past context and recent advances that are driving the area forward. Topics that have been extensively reviewed recently in other journals are unlikely to be considered. Authorship is usually by invitation, but suggestions sent to eic@biochem.acs.org of both topics and authors are welcome. Submissions should begin with a Cover Page that includes the manuscript title and all author names, with complete contact information for the corresponding author, an Abstract of 250 words or fewer, and a Table of Contents graphic. Reviews are recommended to occupy approximately 5-10 pages of printed text with no limit to the number of references or figures. Reviews will be peer-reviewed to ensure accuracy and balance.

**PERSPECTIVES**. Perspectives are designed to communicate a focused (as opposed to comprehensive) assessment of the most exciting new developments in a field or area and with an eye toward guiding future research. Topics that have been extensively reviewed recently in other journals may be considered, but only if the author's new commentary on the field provides a unique contribution. Authorship is usually by invitation, but suggestions sent to eic@biochem.acs.org of both topics and authors are welcome. Please detail in your suggestion how the proposed Perspective will be unique, especially in the context of any related reviews. Submissions should begin with a Cover Page that includes the manuscript title and all author names, with complete contact information for the corresponding author, an Abstract of 250 words or fewer, and a Table of Contents graphic. Perspectives are recommended to occupy approximately 4-7 pages of printed text with no limit to the number of references or figures. Perspectives will be peer-reviewed to ensure accuracy and balance.

**VIEWPOINTS**. Viewpoints are designed to inform readers about an especially exciting recent biological chemistry advance that has been published in *Biochemistry* or elsewhere. Most Viewpoints are commissioned, but proposals may be sent to the Editor-in-Chief at eic@biochem.acs.org. Viewpoints may contain up to 1000 words and a **maximum of five citations** and should be written to ensure accessibility to a non-expert. A Table of Contents graphic is required. The submission of 1-2 additional figures and artwork is strongly encouraged, to illustrate both specific points made in the piece and the more general context. Viewpoints are not peer reviewed but will be evaluated by a member of the editorial board prior to publication. Minor revisions for clarity or adherence to author guidelines may be requested. Upon submission of a Viewpoint, please indicate the editor who commissioned your submission as the preferred editor.

# ACS Researcher Resources

While this document will provide basic information on how to prepare and submit the manuscript as well as other critical information about publishing, we also encourage authors to visit ACS Researcher Resources for additional information on everything that is needed to prepare (and review) manuscripts for ACS journals and partner journals, such as

- Mastering the Art of Scientific Publication, which shares editor tips about a variety of topics including making your paper scientifically effective, preparing excellent graphics, and writing cover letters.
- Resources on how to prepare and submit a manuscript to ACS Paragon Plus, ACS Publications' manuscript submission and peer review environment, including details on selecting the applicable Journal Publishing Agreement.
- Sharing your research with the public through the ACS Publications open access program.
- ACS Reviewer Lab, a free online course covering best practices for peer review and related ethical considerations.
- ACS Author Lab, a free online course that empowers authors to prepare and submit strong manuscripts, avoiding errors that could lead to delays in the publication process.
- ACS Inclusivity Style Guide, a guide that helps researchers communicate in ways that recognize and respect diversity in all its forms.

# Manuscript Preparation

## Submit with Fast Format

All ACS journals and partner journals have simplified their formatting requirements in favor of a streamlined and standardized format for an initial manuscript submission. Read more about the requirements and the benefits these serves authors and reviewers here.

Manuscripts submitted for initial consideration must adhere to these standards:

- Submissions must be complete with clearly identified standard sections used to report original research, free of annotations or highlights, and include all numbered and labeled components.
- Figures, charts, tables, schemes, and equations should be embedded in the text at the point of relevance. Separate graphics can be supplied later at revision, if necessary.
- When required by a journal's structure or length limitations, manuscript templates should be used.
- References can be provided in any style, but they must be complete, including titles. For information about the required components of different reference types, please refer to the ACS Style Quick Guide.
- Supporting Information must be submitted as a separate file(s).

## Document Templates and Format

The templates facilitate the peer review process by allowing authors to place artwork and tables close to the point where they are discussed within the text. Learn more about document templates here.

General information on the preparation of manuscripts may also be found in the ACS Guide to

Scholarly Communication.

## Acceptable Software, File Designations, and TeX/LaTeX

See the list of Acceptable Software and appropriate File Designations to be sure your file types are compatible with ACS Paragon Plus. Information for manuscripts generated from TeX/LaTeX is also available.

## Cover Letter

A cover letter must accompany every manuscript submission. During the submission process, you may type it or paste it into the submission system, or you may attach it as a file.

The cover letter must include the title of the manuscript, the name of the corresponding author, the type of manuscript submitted, and a paragraph explaining why the manuscript will appeal to the broad *Biochemistry* readership. The letter should also identify any Supporting Information and/or Review-Only Material and, where appropriate, describe any presubmission communications with a *Biochemistry* Editor or the Managing Editor.

## Manuscript Text Components

**TITLE.** Titles should clearly and concisely reflect the emphasis and content of the paper and be accessible to a broad audience. Do not use trade names of drugs or abbreviations. Serial numbers may be used only if consecutive papers appear in the same issue of *Biochemistry*.

**AUTHOR LIST.** Include all individuals who have made substantial contributions to the work. To facilitate indexing and retrieval and for unique identification of an author, use first names, initials, and surnames (e.g., Katherine M. Jones) or first initials, second names, and surnames (e.g., K. Mary Jones). Additionally, authors are encouraged to register for an ORCID iD. At least one author must be designated with an asterisk as the person to whom correspondence should be addressed**.** *Biochemistry* allows for the designation of multiple first authors.

**ABSTRACT.** All Communications, Research Articles, From the Bench, and Perspectives contributions should contain an abstract. The Abstract should, in fewer than 250 words, succinctly present the problem studied, the experimental approach employed, and the major findings, conclusions, and significance of the work. The Abstract should be self-explanatory and suitable for direct reproduction. Footnotes or undefined abbreviations may not be used.

**INTRODUCTION.** The Introduction should state the motivation for the investigation and its relationship to other work in the field. Extensive reviews of the literature should be avoided. The last paragraph of the introduction should summarize the major findings, conclusions, and significance of the work, without reproducing the abstract. The Introduction has no header.

**MATERIALS AND METHODS.** Materials and experimental details should be described in sufficient detail to enable others to repeat the experiments. UniProt Accession IDs and/or protein IDs (www.uniprot.org/) should be provided for all proteins that are purified and/or characterized. Names of products and manufacturers should be included only if alternate sources are deemed unsatisfactory. Articles reporting data from experiments on live animals must include a statement identifying the approving committee and certifying that such experiments were performed in accordance with all national or local guidelines and regulations. Results from experiments involving humans or tissue samples must additionally include a statement that informed consent

was obtained from the subject or from the next of kin**.** Novel experimental procedures should be described in detail, but published procedures should merely be referred to by literature citation of both the original and any published modifications. In submitting a manuscript to *Biochemistry*, authors agree to make available to interested academic researchers for their own use any materials reported in their manuscript that are not otherwise obtainable. Such requests should respect the purpose for which an author has prepared the materials being requested in order to avoid conflicts of competition with the originating laboratory.

**RESULTS AND DISCUSSION.** Results should be presented concisely. Tables and figures should be referred to directly, and data should be presented in only one figure or table. In the interest of economy of space, Supporting Information (also subject to review) should be submitted as a separate file. The discussion should interpret the results, relate them to existing knowledge in the field, and clearly state their significance. To conserve space, please submit supplemental information as a single PDF as Supporting Information for Review. The Results and Discussion sections in Research Articles may be combined into a single section or described separately.

**ACCESSION CODES**. *Biochemistry* is committed to improving the functional annotation of protein databases to improve their value to the biological chemistry community. To achieve this goal, we ask that **all proteins** referred to in a manuscript published in *Biochemistry* be linked to an accession ID from a public domain database (UniProt or NCBI) to facilitate the transfer of functional information reported in the manuscript to the database. **Accession IDs need to be listed as a separate section at the end of the manuscript**, e.g.,

- SPBP: Q9UGU0
- TOPBP1: Q92547
- ETS1: P27577

For Communications, list accession codes in the **Associated Content** section of the Communications template.

The accession ID may also be indicated in parenthesis after the protein name when it is first mentioned in the manuscript, e.g., “Stromelysin-1 PDGF responsive element binding protein (SPBP, UniProtKB Q9UGU0)…”

Accession IDs should be as accurate as possible, e.g., an isoform identifier can be used if the full sequence of the molecule is known or can unambiguously be inferred, e.g., UniProtKB Q9UGU0-2. However, for example, if the protein is identified by a peptide which may be present in more than one isoform, only the entry-level, canonical identifier should be given (UniProtKB Q9UGU0).

Sequence-level features such as domains, variants or site-directed mutations should be mapped to the version of the sequence in the database.

**ACKNOWLEDGMENT.** Acknowledgments in this section should include technical assistance, advice from colleagues, and gifts of reagents or materials. Prior permission must be obtained from persons whose contribution to the work is acknowledged in the manuscript.

**REFERENCES.** References should clearly identify the original contributor to the work being cited. The number of references should be appropriate for the scope of the work. Excessive references should be avoided. All references should be compiled into a list at the end of the manuscript and must be verified by the author for accuracy. Literature references should be numbered with Arabic numerals in the order of their first citation in the text and the corresponding superscripted numbers

inserted at the appropriate locations in the text. References can be provided in any style, but they must be complete, including titles. References can be provided in any style, but they must be complete, including titles.

## Supporting Information

This information is provided to the reviewers during the peer-review process (for Review Only) and is available to readers of the published work (for Publication). Supporting Information must be submitted at the same time as the manuscript. See the list of Acceptable Software by File Designation and confirm that your Supporting Information is viewable.

If the manuscript is accompanied by any supporting information files for publication, these files will be made available free of charge to readers. A brief, nonsentence description of the actual contents of each file, including the file type extension, is required. This description should be labeled Supporting Information and should appear before the Acknowledgement and Reference sections.  Examples of sufficient and insufficient descriptions are as follows:

Examples of sufficient descriptions: “Supporting Information: $^{1}$H NMR spectra for all compounds (PDF)” or “Additional experimental details, materials, and methods, including photographs of experimental setup (DOC)”.

Examples of insufficient descriptions: “Supporting Information: Figures S1-S3” or “Additional figures as mentioned in the text”.

When including supporting information for review only, include copies of references that are unpublished or in-press. These files are available only to editors and reviewers.

## Research Data Policy

All ACS journals strongly encourage authors to make the research data underlying their articles publicly available at the time of publication.

*Research data* is defined as materials and information used in the experiments that enable the validation of the conclusions drawn in the article, including primary data produced by the authors for the study being reported, secondary data reused or analyzed by the authors for the study, and any other materials necessary to reproduce or replicate the results.

The ACS Research Data Policy provides additional information on Data Availability Statements, Data Citation, and Data Repositories.

## Data Requirements

**UniProt Accession IDs for Proteins.** Authors of manuscripts that report functions for previously uncharacterized proteins also are encouraged to submit data directly to the UniProtKB database (http://www.uniprot.org/update); refer to http://www.uniprot.org/help/submission for additional information. Relevant data include sequence updates, post-translational modifications, functional information, subunit structure, mass spectrometry data, protein interactions, and/or any additional characterization data that may be of use to the biological chemistry community.

**Kinetic and Equilibrium Data.** Authors are referred to the STRENDA (Standards for Reporting Enzymology Data) Commission of the Beilstein Institut (https://www.beilstein-strenda-db.org/strenda/) for detailed guidelines on how this data should be organized and formatted. For

publication in *Biochemistry*, steady-state, pre-steady-state, or approach-to-equilibrium kinetic data and equilibrium binding data for proteins, nucleic acids, and other species must include a description of the identity of the catalyst or binding molecule, its origin, purity of composition, and any modifications such as mutations, post-translational modifications, or any other modifications made to facilitate expression and purification. The assay method and the exact experimental assay conditions must be provided as a reference to previous work, with or without modifications, or fully described if a new assay. Regardless of whether previously reported, the temperature, pH, and pressure (if other than atmospheric) must be included. Terms such as “not detectable” (ND) should be avoided. Instead, an estimate of the limit of detection based on the sensitivity and error analysis of the assay should be provided. First-order and second-order rate constants (including steady-state values of *k*cat and *k*cat/*K*M for enzymes and nucleic acids) should be reported in units of $s^{-1}$ and $M^{-1}s^{-1}$, respectively. Equilibrium constants describing a binding interaction should be reported as equilibrium dissociation constants with units of concentration (e,g., M, mM, M, etc.). Steady-state enzyme activity (specific activity) should be optimally reported as $k_{cat}$ or, if there is uncertainty in the molar concentration of the catalyst, as a $V_{max}$ (e.g., nmol, mol) of product formed per amount of protein per unit time. All reported parameters should be given with a calculated estimate of error and a description of the software used in the data analysis.

**Sequence Data.** We ask that all authors submit sequence data to a public repository prior to submission and include accession numbers in their paper where appropriate. Examples of suitable public repositories for DNA and RNA sequences include GenBank or Protein DataBank; nucleic acid sequencing data can be deposited in NCBI Trace Archive or NCBI Sequence Read Archive (SRA). Protein sequences can be submitted to Uniprot.

**Structural Data.** The atomic coordinates and related experimental data (structure factor amplitudes/intensities and/or NMR restraints) associated with a structure reported in *Biochemistry* must be deposited at a member site of the Worldwide Protein Data Bank (www.wwpdb.org): RCSB PDB (www.pdb.org), PDBe (www.ebi.ac.uk/pdbe), PDBj (www.pdbj.org), or BMRB (www.bmrb.wisc.edu). The PDB ID should be included in the manuscript. Authors must agree to release the atomic coordinates and experimental data when the associated article is published. Questions relating to depositions should be sent to deposit@wwpdb.org. A manuscript will be accepted only after receipt from the submitting author of a written statement that the coordinates have been deposited. Coordinates must be released immediately upon publication.

Manuscripts that report X-ray crystallographic structures should include a table of data statistics that contains the number of reflections, data cutoff (e.g., $F > 0$), $R_{work}/R_{free}$, $I/(I)$, percent completeness, redundancy, $R_{merge}$, number of atoms per asymmetric unit, and *B*-factors for protein, waters, and ligands/ions. For papers that involve NMR studies in which complete or nearly complete resonance assignments of biopolymers have been carried out, authors are required to deposit relevant NMR assignments and related experimental data at the BioMagResBank (BMRB; www.bmrb.wisc.edu). These data may include assigned chemical shifts, coupling constants, relaxation parameters ($T_1$, $T_2$, and NOE values), dipolar couplings, or other data accepted by BMRB. The author is responsible for obtaining a BMRB entry accession number (e.g., 4238), which should appear in a data deposition paragraph. The data must be released upon publication.

Crystal structures of nucleic acids should be deposited with the Nucleic Acid Database (NDB; ndbserver.rutgers.edu/ or with the RCSB PDB at http://www.rcsb.org/pdb/home/home.do. A preprint of the related manuscript should be mailed or faxed to The Nucleic Acid Database, Department of Chemistry, Rutgers, The State University of New Jersey, 610 Taylor Road, Piscataway, New Jersey 08854-8087 [fax (732) 445-4320].

For papers describing structures of biological macromolecules from electron microscopy experiments, the 3D map should be deposited at either the Protein Data Bank in Europe (UK) or RCSB (USA) EMDB deposition site (www.emdatabank.org). Once the map has been deposited, any fitted atomic coordinates should be deposited with the Protein Data Bank (PDB) by following the link provided from the EMDB deposition session. The EMDB and PDB IDs should be included in the manuscript. Both the map and the coordinate data will be made public when the associated article is published. Manuscripts dealing with the development of structures from sequence homology are generally not considered unless significant experimental tests of the model also are presented.

**Target-based Screening.** Bioactive molecules identified through target-based and/or phenotypic screening assays should include thorough structure-activity relationship (SAR) characterization and detailed biophysical testing for functional validation and artifactual assay activity. Counterscreens for irreversible inhibition as well as nonspecific activity by pan-assay interference compounds (PAINS) should be performed. Full concentration response curves, binding constants, compound stability and purity should be measured and reported for all compounds of interest. Screening hits should be reviewed for resemblance to known PAINS chemotypes, either using *in silico* tools (found here) or through careful literature review.

## Language and Editing Services

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## Preparing Graphics

The quality of illustrations in ACS journals and partner journals depends on the quality of the original files provided by the authors. Figures are not modified or enhanced by journal production staff. All graphics must be prepared and submitted in digital format.

Graphics should be inserted into the main body whenever possible. Please see Appendix 2 for additional information.

Any graphic (figure chart, scheme, or equation) that has appeared in an earlier publication should include a credit line citing the original source. Authors are responsible for obtaining written permission to re-use this material.

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The impact of your research is not limited to what you can express with words. Tables and figures such as graphs, photographs, illustrations, diagrams, and other visuals can play a significant role in effectively communicating your findings. Our Artwork Editing and Graphical Abstract services generate publication-ready figures and Table of Contents (TOC) graphics that conform to your chosen journal's specifications. For figures, this includes changes to file type, resolution, color space, font, scale, line weights, and layout (to improve readability and professional appearance). For TOC graphics, our illustrators can work with a rough sketch or concept or help extract the key findings of your manuscript directly for use as a visual summary of your paper.

# Preparing for Submission

Manuscripts, graphics, supporting information, and required forms, as well as manuscript revisions, must all be submitted in digital format through ACS Paragon Plus, which requires an ACS ID to log in. Registering for an ACS ID is fast, free, and does not require an ACS membership. Please refer to Appendix 1 for additional information on preparing your submission

## Prior Publication Policy

*Biochemistry* authors are allowed to deposit an initial draft of their manuscript in a preprint service such as arXiv or bioRxiv. Please note any use of a preprint server in the cover letter, and as appropriate, state how the manuscript has been adjusted/updated between deposition and submission. All other prior/redundant publication is forbidden. Upon publication in *Biochemistry*, authors are advised to add a link from the preprint to the published paper via the Digital Object Identifier (DOI).

## Editorial Policies

## Preliminary evaluation

Every manuscript submitted to *Biochemistry* undergoes an initial editorial assessment to ensure that it contains sufficient elements of novelty, breadth, and impact to appeal to the broad biological chemistry readership. Submissions that are judged to lack these elements are returned without extensive review.

## Review process

Manuscripts evaluated beyond this initial assessment are reviewed by at least two independent experts, who return written comments, transmitted faithfully to the author, typically within 4 weeks (2 weeks for Communications). Reviewers are expected to disqualify themselves if their evaluations could be marred by even an appearance of a conflict of interest, such as a prior or current association with the laboratory of the author or a preconceived opinion about the work. Authors are required to recommend at least four experts who could offer expert and unbiased reviews and are not members of the Editorial Advisory Board. Authors may also identify in their cover letter as many as three individuals who should be excluded from the potential reviewer pool; these exclusions must be accompanied by an explanation. Members of the Editorial Advisory Board cannot be disqualified from participating in the final disposition of a manuscript. The reviewers are advisory to the Editor, and their reports are used to reach the editorial decision. If the reviewers disagree, or if in the judgment of the Editor the manuscript has not received adequate consideration, the manuscript and the reviewers' opinions may be submitted to a member of the Editorial Advisory Board for arbitration. Editorial decisions that result from this process are considered final. Reviews will normally be sent to authors by e-mail unless the authors request otherwise.

## Revisions

Revisions, when necessary, should be returned as quickly as possible, but certainly within 1 month for major revisions and 2 weeks for minor revisions, and only one revised version of a submitted manuscript is typically considered. A revised manuscript received after these time periods will be considered a new submission and will usually undergo a new review process.

When a manuscript is returned to the author for revision, the author should reply as fully as possible to the specific recommendations of the reviewers. The revised manuscript should be submitted with a rebuttal letter that states explicitly how and where each recommendation has been addressed and the reason for disregarding any recommendation and must be accompanied by an annotated copy of the revised manuscript that identifies where changes were made. This annotated manuscript should be submitted as Supporting Information for Review Only. Handwritten corrections will not be accepted.

### Providing Potential Reviewer Names

Please suggest 4 reviewers. Authors are encouraged to avoid suggesting reviewers from the authors' institutions. Do not suggest reviewers who may have a real or perceived conflict of interest. Whenever possible, suggest academic email addresses rather than personal email addresses.

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If your submission is declined for publication by this journal, the editors might deem your work to be better suited for another ACS Publications journal or partner journal and suggest that the authors consider transferring the submission. Manuscript Transfer simplifies and shortens the process of submitting to another ACS journal or partner journal, as all the coauthors, suggested reviewers, manuscript files, and responses to submission questions are copied by ACS Paragon Plus to the new draft submission. Authors are free to accept or decline the transfer offer.

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It is the responsibility of the Corresponding Author to ensure that all authors listed on the manuscript agree with the changes made on the proofs. Galley proofs should be returned within 48 hours in order to ensure timely publication of the manuscript.

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## Post-Publication Policies

The American Chemical Society follows guidance from the Committee on Publication Ethics (COPE) when considering any ethical concerns regarding a published article, Retractions, and Expressions of Concern.

## Additions and Corrections

Additions and Corrections may be requested by the author(s) or initiated by the Editor to address important issues or correct errors and omissions of consequence that arise after publication of an article. All Additions and Corrections are subject to approval by the Editor, and should bring new and directly relevant information and corrections that fix scientific facts. Minor corrections and additions will not be published. Readers who detect errors of consequence in the work of others should contact the corresponding author of that work.

Additions and Corrections must be submitted as new manuscripts via ACS Paragon Plus by the Corresponding Author for publication in the “Addition/Correction” section of the Journal. The corresponding author should obtain approval from all coauthors prior to submitting or provide evidence that such approval has been solicited. The manuscript should include the original article title and author list, citation including DOI, and details of the correction.

## Retractions

Articles may be retracted for scientific or ethical reasons and may be requested by the article author(s) or by the journal Editor(s), but are ultimately published at the discretion of the Editor. Articles that contain seriously flawed or erroneous data such that their findings and conclusions cannot be relied upon may be retracted in order to correct the scientific record. When an article is retracted, a notice of Retraction will be published containing information about the reason for the Retraction. The originally published article will remain online except in extraordinary circumstances (e.g. where deemed legally necessary, or if the availability of the published content poses public health risks).

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Expressions of Concern may be issued at the discretion of the Editor if:

- there is inconclusive evidence of research or publication misconduct by the authors;
- there is evidence that the findings are unreliable but the authors' institution will not investigate the case;
- an investigation into alleged misconduct related to the publication either has not been, or would not be, fair and impartial or conclusive;
- an investigation is underway but a judgment will not be available for a considerable time.

Upon completion of any related investigation, and when a final determination is made about the outcome of the article, the Expression of Concern may be replaced with a Retraction notice or Correction.

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## Appendix 1: PREPARING FOR SUBMISSION

We've developed ACS' publishing and editorial policies in consultation with the research communities that we serve, including authors and librarians. Browse our policies below to learn more.

### Ethical Guidelines

ACS editors have provided Ethical Guidelines for persons engaged in the publication of chemical research—specifically, for editors, authors, and reviewers. Each journal also has a specific policy on prior publication.

**OFAC Compliance**

As a U.S.-based non-profit organization, the American Chemical Society (ACS) is required to comply with U.S. sanctions laws and regulations administered by the U.S. Treasury Department's Office of Foreign Assets Control (OFAC). While these laws and regulations permit U.S.-based publishers like ACS to engage in publishing-related activities with authors located in sanctioned regions in many cases, ACS may be prohibited under U.S. law from engaging in publishing-related activities in some cases, including, but not limited to, instances where an author or the institution with which an author is affiliated is located in a particular sanctioned region or has been designated by OFAC as a Specially Designated National (SDN) pursuant to certain U.S. sanctions programs. ACS reserves the right to refrain from engaging in any publishing-related activities that ACS determines in its sole discretion may be in violation of U.S. law.

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Authors must emphasize any unexpected, new, and/or significant hazards or risks associated with the reported work. This information should be in the Experimental Section of a full article and included in the main text of a letter. Statement examples can be found in the Safety Statement Style Sheet and additional information on communicating safety information from the *ACS Guide to Scholarly Communication* is freely available here.

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# Appendix 2: Preparing Graphics

## Resolution

Digital graphics pasted into manuscripts should have the following minimum resolutions:

- Black and white line art, 1200 dpi
- Grayscale art, 600 dpi
- Color art, 300 dpi

## Size

Graphics must fit a one- or two-column format. Single-column graphics can be sized up to 240 points wide (3.33 in.) and double-column graphics must be sized between 300 and 504 points (4.167 in. and 7 in.). The maximum depth for all graphics is 660 points (9.167 in.) including the caption (allow 12 pts. For each line of caption text). Lettering should be no smaller than 4.5 points in the final published format. The text should be legible when the graphic is viewed full-size. Helvetica or Arial fonts work well for lettering. Lines should be no thinner than 0.5 point.

## Color

Color may be used to enhance the clarity of complex structures, figures, spectra, and schemes, etc., and color reproduction of graphics is provided at no additional cost to the author. Graphics intended to appear in black and white or grayscale should not be submitted in color.

## Type of Graphics

### Table of Contents (TOC)/Abstract Graphic

Consult the Guidelines for Table of Contents/Abstract Graphics for specifications.
Our team of subject-matter experts and graphical designers can also help generate a compelling TOC graphic to convey your key findings. Learn more about our Graphical Abstract service.

### Figures

A caption giving the figure number and a brief description must be included below each figure. The

caption should be understandable without reference to the text. It is preferable to place any key to symbols used in the artwork itself, not in the caption. Ensure that any symbols and abbreviations used in the text agree with those in the artwork.

**Charts**

Charts (groups of structures that do not show reactions) may have a brief caption describing their contents.

**Tables**

Each table must have a brief (one phrase or sentence) title that describes the contents. The title should be understandable without reference to the text. Details should be put in footnotes, not in the title. Tables should be used when the data cannot be presented clearly in the narrative, when many numbers must be presented, or when more meaningful inter-relationships can be conveyed by the tabular format. Tables should supplement, not duplicate, information presented in the text and figures. Tables should be simple and concise.

**Schemes**

Each scheme (sequences of reactions) may have a brief caption describing its contents.

**Chemical Structures**

Chemical structures should be produced with the use of a drawing program such as ChemDraw.

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Cover image submissions should be scientifically and visually exciting, without text or structures. The cover image should not resemble a graphical abstract or data figure, but rather should be an artistic and scientifically accurate representation of the manuscript. For examples of recent cover art designs, please refer to the List of Issues.

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