ACS Medicinal Chemistry Letters

ACS Publications
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Information for Authors

(revised September 2010)

ACS Medicinal Chemistry Letters publishes brief communications on experimental or theoretical results of exceptional timeliness in all aspects of medicinal chemistry (pure and applied) and its extension into pharmacology. The journal welcomes submissions of original work from chemists (medicinal, pharmaceutical, biochemical, chemical biological, computational/cheminformatics, and organic), biophysicists, and pharmacologists. An important criterion for acceptance is that the Letter should report a **significant scientific advancement and/or insight**, such that rapid publication is warranted.

Journal Scope

ACS Medicinal Chemistry Letters is interested in receiving manuscripts that discuss various aspects of medicinal chemistry. The journal will publish studies that range from compound design to optimization, biological evaluation, drug delivery, and pharmacology. Specific areas include but are not limited to:

- Identification, synthesis, and optimization of lead biologically active compounds and drugs
- Biological characterization of new chemical entities in the context of drug discovery
- Computational, cheminformatics, and structural studies for the identification or SAR analysis of bioactive molecules, ligands and their targets, etc.
- Novel and improved methodologies, including radiation biochemistry, with broad application to medicinal chemistry
- Discovery technologies for biologically active compounds from both synthetic and natural (plant and other) sources

- Pharmacokinetic/pharmacodynamic studies that address mechanisms underlying drug disposition and response
- Pharmacogenetic and pharmacogenomic studies used to enhance drug design and the translation of medicinal chemistry into the clinic
- Mechanistic drug metabolism and regulation of metabolic enzyme gene expression

Types of Content

ACS Medicinal Chemistry Letters is an online publication and predominantly publishes research Letters but will also publish Technology Notes, which address recent technological advances in support of medicinal chemistry, and specially commissioned publications that highlight recent developments in medicinal chemistry. The Editors welcome the submission of manuscripts in the following categories:

Letters. Short reports of original research focused on an individual finding significant to a broad medicinal chemistry field.

Letters are peer-reviewed and begin with an abstract (without references included) of less than 150 words. Abstracts should be informative, as opposed to just indicative, and briefly state the purpose of the research, principal results, and major conclusions, without excessive abbreviations or acronyms. Letters include unheaded sections for the Introduction and combined Results and Discussion and headed sections for the Abstract, Experimental Procedures, Acknowledgements, etc. The Experimental Procedures section can also contain subsections, but it is recommended that most procedural details be placed in Supporting Information.

Letters should provide sufficient experimental details to allow others to reproduce the findings presented. Use of Supporting Information is encouraged for this purpose. Letters should be approximately 3500 words or less in length (4 journal pages or approximately 14-16 double-spaced manuscript pages), including the abstract, body text, methods, references, tables, graphics/artwork, and figure/scheme legends. Letters can contain 4–6 display items (figures/tables/schemes) and approximately 30 references. Letters must be accompanied by a graphical Table of Contents (TOC) abstract graphic as part of the manuscript. Because special effort will be made to expedite the review and the publication of manuscripts for *ACS Medicinal Chemistry Letters*, a relatively short time is provided for reviewing the proofs. Thus, authors should ensure that manuscripts are in final, error-free form when submitted.

Technology Notes. A short descriptive manuscript outlining new or improved "toolbox" innovations encompassing a myriad of technologies (high-throughput/high-content screening, robotics, structure-based drug design, fragment-based drug design, combinatorial chemistry/parallel synthesis, etc.), which simultaneously facilitate and partially define modern medicinal chemistry. Technology Notes are peer-reviewed and begin with an unreferenced abstract of less than 150 words. Abstracts should briefly state the technological innovation and the major advancement over existing methods, without excessive abbreviations or acronyms. The format is identical to that of a Letter (see above). Supporting Information is encouraged and may contain technical details and experimental procedures. Technology Notes should be approximately 3500 words or less in length (4 journal pages or approximately 14 -16 double-spaced manuscript pages), including the abstract, body text, methods, references, and figure/scheme legends. Technology Notes can contain 4–6 display items (figures/tables/schemes) and

approximately 30 references. Technology Notes must be accompanied by a graphical Table of Contents (TOC) abstract graphic as part of the manuscript.

Viewpoints. The Editors also commission Viewpoint pieces, which include general commentaries and tutorials of immediate interest to the broad readership. Viewpoint pieces are not peer-reviewed. The journal may also publish the ***In This Issue*** piece, a feature devoted to highlighting research in the journal, and ***Correspondence/Rebuttals***, devoted to discussions between scientists on published manuscripts, scientific policy issues, and other topics of interest to medicinal chemists.

Editorial Process and Peer Review

Letters are handled expeditiously, and full advantage is taken of web technology in the submission and review of manuscripts.

Presubmission Inquiries
Presubmission inquiries can be made to the Editor-in-Chief by e-mail at: eic@medchemlett.acs.org.

Review Process
The Editors evaluate submitted manuscripts, and only those judged to fall within the scope of the journal and to be of potential interest to our readers are sent to two or more reviewers for evaluation. Reviewers can suggest that a manuscript be published, revised, or rejected. Reviewers will evaluate the originality, technical quality (including appropriateness of compound characterization data), clarity of presentation, and significance to the field. The Editors evaluate the reviewers' arguments in the context of the scope of the journal and make the final decision on each manuscript.

Editorial decisions are based on many factors. Reviewers' concerns are considered very seriously. When reviewers suggest different decisions, additional information may be requested from the reviewers, other experts may be consulted, and/or the authors may be asked to clarify questionable sections. Reviewers may be asked to consider subsequent versions of the manuscript, especially if new data have been added to the manuscript, to evaluate whether the authors have sufficiently addressed the scientific concerns. In such cases, blind copies of all previous reviewer comments may be sent to the reviewers. This practice allows the reviewers to obtain a clear understanding of the expectations of the Editors. The Editors will expedite any additional rounds of reviews to ensure timely publication.

Anonymity
The ACS strongly disapproves of any attempts by authors to determine the identity of reviewers or to confront potential reviewers. The editorial policy of this journal is to neither confirm nor deny any speculation about the identities of our reviewers. The journal will not release the identity of a reviewer to the authors or to other reviewers.

Professional Ethics
All parties—Editors, reviewers, and authors—are expected to adhere to the standards embodied in the American Chemical Society's Ethical Guidelines to Publication of Chemical Research, which are available at http://pubs.acs.org/ethics. Authors are reminded of their obligation to obtain the consent of all coauthors before submitting a manuscript for publication. If any change in authorship is necessary after a Letter has been submitted, the corresponding author must provide a signed letter (via e-mail

with copy to all coauthors) to the Editor confirming that all of the original coauthors have been notified and have agreed to the change.

Submission Policies

Conflict-of-Interest Disclosure
A statement describing all potential sources of bias, including affiliations, funding sources, and financial or management relationships, that may constitute conflicts of interest should be included. The corresponding author should provide a statement on behalf of all authors of a manuscript.

Publication Costs
ACS Medicinal Chemistry Letters does not impose submission or publication fees.

Database Deposition
Sequence Data. Manuscripts reporting protein or nucleic acid sequences will not be published without an accession number to GenBank/EMBL/DDBJ, SWISS-PROT, or another appropriate database in the field that provides free access to the data for all scientists from the date of publication.

Crystal and NMR Structures. Small molecular crystallographic data should be submitted upon publication to the Cambridge Structural Database (www.ccdc.cam.ac.uk). Manuscripts reporting macromolecular NMR or crystal structures must specifically state that the atomic coordinates have been deposited in the Protein Data Bank (PDB) (www.rcsb.org/pdb/home/home.do) or the Nucleic Acid Database (http://ndbserver.rutgers.edu) and must list the accession code(s). These coordinates must be designated "for immediate release upon publication". Authors of manuscripts reporting X-ray crystal structures are encouraged to deposit the structure factor files in the PDB. No formal requirement exists for deposition of NMR assignments and constraints (see Biological Magnetic Resonance Data Bank at www.bmrb.wisc.edu).

Electron Microscopy Data. No formal requirement exists for deposition of molecular envelope reconstruction from electron microscopy data, but the journal encourages authors to deposit relevant information in appropriate databases. Approved databases for deposition of electron microscopy data are the Worldwide Protein Data Bank (www.wwpdb.org), the Protein Data Bank Japan (www.pdbj.org), or the Macromolecular Structure Database–EMBL–European Bioinformatics Institute (MSD-EMBL-EBI, www.ebi.ac.uk/msd).

Microarray Data. Data must be submitted to the GEO (www.ncbi.nlm.nih.gov/geo) or ArrayExpress (www.ebi.ac.uk/arrayexpress) databases, and the relevant accession numbers must be included in the published manuscript. Please reference the Microarray Gene Expression Data (MGED) open letter specifying microarray standards at www.mged.org/Workgroups/MIAME/miame_checklist.html.

Genetically Modified Organisms and Mutants. Established repositories such as the Jackson Laboratory, the Mutant Mouse Regional Resource Center, the American Type Culture Collection, the UK Stem Cell Bank, or another public storage area should be used whenever possible. Large data sets for which an approved database has not yet been established must be housed as online Supporting Information at *ACS Medicinal Chemistry Letters*.

Material and Data Availability

ACS Medicinal Chemistry Letters understands that communication and collaboration between chemists and biologists are significantly enhanced when materials and data can be exchanged among scientists. Therefore, authors are strongly encouraged to make experimental data and protocols available to readers through deposition in a publicly used database. The hosting of such information on an author's Web site is not an acceptable substitute. Authors should endeavor to make available to interested academic researchers research materials reported in their manuscript that are not otherwise reasonably obtainable. Any restrictions as to the availability of materials or information should be stated at the time of submission.

Online Publication
Authors need to review proofs in detail to ensure that the text and figures are correct. *ACS Medicinal Chemistry Letters* will post manuscripts online within days after the corrected proofs are returned. These ASAP (As Soon As Publishable) articles represent the final scientific articles of record. Published manuscripts are definitive and may be altered only through an Addition and Correction. All articles published receive a unique digital object identifier (DOI) number, which may be used to cite the Letter prior to compilation in a final issue of the journal.

Publication and Patent Dates
Documents accepted for publication in *ACS Medicinal Chemistry Letters* will be posted on the Web as soon as they are ready for publication, that is, when proofs are corrected and all author concerns are resolved. Authors should take this policy into account when planning their intellectual property and patent activities related to a document and should ensure that all patent information is available at the time that they finalize their proofs. The actual date of Web posting is recorded on the document.

Security Concerns
Certain Letters may represent a potential security risk to the public. Such Letters must be brought to the attention of the Editors of the journal. If necessary, outside reviewers with expertise in security matters will be consulted.

Submission Procedure

Manuscripts are submitted online via the ACS Paragon Plus Environment (http://paragonplus.acs.org/login). Complete instructions and an overview of the electronic online (Web) submission process are available through the secure ACS Paragon Plus Web site. Authors are required to submit all revisions of manuscripts via the ACS Paragon Plus Environment. The Web submission site employs state-of-the-art security mechanisms to ensure that all electronically submitted manuscripts are secure. These same security mechanisms are also utilized throughout the peer-review process, permitting access only to Editors and reviewers who are assigned to a particular manuscript. Submission is taken to imply that all coauthors have approved of the content and submission to *ACS Medicinal Chemistry Letters* and that the corresponding author is authorized to represent all authors. The submission of the manuscript to *ACS Medicinal Chemistry Letters* is done on an exclusive basis.

Writing Style and Language Usage
Scientists with a broad range of training and interests read *ACS Medicinal Chemistry Letters*. Therefore, it is important for authors to make all manuscripts understandable to a wide scientific audience. The Editors will request that authors rewrite portions of the manuscript when this objective

is not met. Clarity and conciseness are critical requirements for publications. Authors should consult *The ACS Style Guide* for guidance on style, word-usage conventions, nomenclature, physical quantity symbols and units, abbreviations, use of italics, and punctuation**.**

The ACS Style Guide also provides information about copyrights and insight on what Editors and reviewers look for in evaluating manuscripts. Spelling and the use of periods and commas in numbers should conform to U.S. usage. Any author who is not fully fluent in idiomatic English is urged to obtain assistance with manuscript preparation from a colleague whose native language is English. For more information, authors may visit the Language Editing Services listed under the Publishing Tools tab of the ACS Author & Reviewer Resource Center.

Cover Letter

All manuscripts must be accompanied by a cover letter that contains clear and precise information about the submission, highlighting the significance of the work. The letter must contain the following elements:

- Manuscript title
- Name of the corresponding author, with contact information
- Paragraph explaining why the manuscript is appropriate for *ACS Medicinal Chemistry Letters*
- Short lay summary (1 paragraph) describing the significance of the study and its interest for a broad audience
- Suggestions for possible reviewers, as well as sufficient justification for excluding potential reviewers that might have a conflict of interest

If your manuscript is accepted for publication, *ACS Medicinal Chemistry Letters* may choose to modify, edit, and publish your lay summary in the ***In This Issue*** feature of the journal. The journal may also promote your research article through press communications.

Journal Publishing Agreement

The ACS Paragon Plus Environment provides an electronic Journal Publishing Agreement form (eJPA) that can be completed by the author handling the peer review of the manuscript after the manuscript has been assigned to an Editor. ACS also offers a PDF version of the form that can be completed and uploaded to ACS Paragon Plus during manuscript submission or faxed after submission to the assigned Editor. If the corresponding author cannot or should not complete either the electronic form or the PDF version for any reason, another author should complete and sign the PDF version of the form. Complete details are available at http://pubs.acs.org/page/copyright/journals/index.html.

Acceptable File Formats and Graphics Specifications

Graphical Table of Contents. Each manuscript must include a graphic for the Table of Contents. This graphic should capture the readers' attention and, in conjunction with the manuscript title, give readers a visual impression of the essence of the manuscript without providing specific results. The type size of labels, formulas, or numbers within the graphic must be legible at publication size. Tables or spectra are not acceptable. Color graphics are highly encouraged, with text kept to a minimum. At final published size, all text should be ~6 points. These graphics should be ~4 cm in width and ~4 cm height and must be ~300 dpi in resolution.

Text. Please refer to the Manuscript Submission and Peer Review sections in the ACS Paragon Plus site (http://pubs.acs.org/page/4authors) for a complete listing of acceptable file formats.

Tables. Tables should be submitted within the body of the manuscript text file and have the following characteristics.

- Tables should be consecutively numbered and use Arabic numbers.
- A descriptive heading should be included that, together with the individual column headings, makes the table self-explanatory.
- Footnotes should be given letter designations and cited in the table by italic superscript letters. The sequence of letters should proceed by line rather than by column.
- When a reference is cited, a lettered footnote should be inserted in the table and the reference number should be placed in a footnote.
- When columns are used, data should be arranged efficiently to save space.
- Crystallographic and NMR data tables should be placed last in a series of tables in a manuscript, because they are generally placed in the Experimental Procedures section.

Graphics. EPS and TIF are the preferred file formats for graphical objects.

- Artwork may be categorized into structure blocks, equations (numbered reactions), schemes, and figures. Within each category, Arabic numbers should be used to sequentially number artwork.
- All chemical structures should be prepared using ChemDraw and the ACS document settings.
- Schemes may have titles and footnotes.
- Figures must have captions.
- Structures should be numbered with boldface Arabic numbers.
- Macromolecular structures should not be placed on any backgrounds. The colors chosen should allow all features to be clearly visible on a white background.
- For best results, **graphics should be submitted in the actual size at which they should appear in the PDF version of the manuscript.** Original graphics that do not need to be reduced to fit a single or double column will yield the best quality.
    - Graphics should be submitted at the required publication size.

	single (preferred)	**double**
minimum width	–	10.5 cm (4.13 in.)
maximum width	8.25 cm (3.25 in.)	17.78 cm (7 in.)
maximum depth	22 cm (8.6 in.)	22 cm (8.6 in.)

    - Graphics must be at least 300 dpi for images containing photographic material and 1200 dpi for line art.
    - Figures containing photographic material should be in TIF format. Line-art figures should be submitted as EPS files.
- Color graphics should be formatted in a CMYK color scheme.
- Arial font should be used for lettering within a graphic.
    - Lettering should be ~6 points. If the submitted artwork must be reduced, larger lettering and thicker lines should be used so that, when reduced, the artwork meets the above-mentioned criteria.
    - Lines should be no thinner than 0.5 point. Lettering and lines should be of uniform density.
    - Text within a graphic should be initial-capped.
- Panel labels should be bold, lowercase, and in the upper left-hand corner of the panel.
- A rule should not be placed around the entire graphic.

- To save space, legends for graphs should be placed within the main body of the graph, whenever possible.
- Graphs containing similar information should be of similar size.
- Graphics should be named Figure 1, Figure 2, etc., and a note should be placed in the main manuscript text indicating where the graphic should be located.

Organization of Manuscript

Title. Titles should clearly and concisely reflect the emphasis and content of the manuscript and be accessible to a broad audience. Titles are of great importance for current awareness and information retrieval and should be carefully constructed for these purposes. **One option that authors may wish to consider is to present a significant outcome in the title. Titles should not contain specialized abbreviations or jargon.** Editors may request author revision of a title at any time prior to publication.

Author List. All those who have made substantial contributions to the work should be included. To facilitate indexing and retrieval and for unique identification of an author, first names, initials, and surnames (e.g., John R. Smith) or first initials, second names, and surnames (e.g., J. Robert Smith) should be used. At least one author must be designated with an asterisk as the person to whom correspondence should be addressed.

Abstract. All Letters, Technology Notes, and Viewpoints must contain an abstract, which should provide a succinct, informative summation of the most important results and conclusions**.** Ideally, an abstract should be less than 150 words. Abbreviations should be used sparingly and spelled out when first used. The abstract should be written in complete sentences without the use of subheadings or specialized jargon. It should be accessible to a graduate student in the field so as to be palatable to a broad audience.

Keywords. Authors should provide a list of up to six keywords to be displayed below the abstract of their publication.

Introduction. In this unheaded section, the purpose and significance of the research should be clearly stated and placed in the context of earlier work in the area. Historical summaries are seldom warranted. Attempts at a complete survey of the literature should not be made. If a recent article has summarized work on the subject, that article should be cited without repeating its individual citations. In general, the introductory section should be approximately 750 words for a Letter.

Results and Discussion. This section should be continuous with the Introduction and does not receive a heading. The first paragraphs should explain the motivation for the work and how it combines the chemistry and biology disciplines. Tables and figures should be used only if they contribute significantly to the comprehension of the data. The same data should not be presented in more than one figure or in both a figure and a table. The purpose of the discussion is to interpret the results and to relate them to existing knowledge in the field. Manuscripts reporting new 3D structures of small molecules from crystallographic analysis should include a structural figure with probability ellipsoids and a CIF file. Those reporting NMR or X-ray crystal structures of macromolecules must include a table with relevant data collection and refinement statistics. For manuscripts reporting structures derived from electron microscopy experiments, authors must provide one image showing the distribution of particles being analyzed, the percentage of the particles being used in the reconstruction, and a correlation coefficient plot (or equivalent data) to indicate the resolution of the

presented structure. Upon request from the Editor, the authors must provide sequence, structure data (including coordinate files and structure), and/or microarray data in a MIAME-compliant format to the Editors and reviewers for the purpose of evaluating the manuscript.

Experimental Procedures. A clear, unambiguous description of materials, methods, and equipment should be provided in a format that permits repetition of the work elsewhere. Novel experimental procedures and characterization data for key compounds should be described in sufficient detail, but where pertinent, synthetic and bioassay protocols should refer to published procedures by literature citation of the original method and any later modifications used. Supporting Information can be useful for presenting experimental details while conserving the size of the main document. Manuscripts 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. Precautions for handling dangerous material or for performing hazardous procedures must be explicitly stated.

Supporting Information. This information is made available to the reviewers during the peer-review process. For accepted papers, this information is made available free of charge to readers of the journal. The Supporting Information format of this journal can accommodate and make readily available almost any type of supplementary figures or data (e.g., reproductions of spectra, experimental procedures, tabulated data, or expanded discussion of peripheral findings). Supporting Information must be submitted at the same time as the manuscript and uploaded separately to the ACS Paragon Plus Environment. A list of acceptable file types is available on the Web. All Supporting Information files of the same type should be prepared as a single file (rather than submitting a series of files containing individual images or structures). For example, all Supporting Information available as PDF files should be contained in one PDF file.

Authors need to include a paragraph at the end of the paper indicating the nature of the Supporting Information material and the means by which an interested reader can obtain copies directly. Use the following format:

> *Supporting Information Available:* [Your description of the supporting materials.] This material is available free of charge via the Internet at http://pubs.acs.org.

Author Information. The following information should be provided in these specific subheadings:

- Author Addresses: current address for each author if different from the location(s) where the research was conducted.
- Author Contributions: *ACS Medicinal Chemistry Letters* recommends that individual contributions of authors be listed.
- Funding Sources
- Conflict of Interest: If any conflicts exist, they should be described in this subheading.

Acknowledgments. Financial support, technical assistance, advice from colleagues, gifts, etc. should be included.

Abbreviations. If nonstandard abbreviations (see *The ACS Style Guide*) are used within the manuscript, then a section should be added to identify the abbreviations. Such abbreviations should also be defined on first appearance in the manuscript text.

References. All references should be compiled together in a list at the end of the manuscript text. During the publication process, many of them will have links added to other Web resources, such as the corresponding abstracts in *Chemical Abstracts* and the full text on publisher Web sites. Because of this electronic linking and because the references are not checked in detail by Editors or reviewers, it is crucial that authors verify their accuracy. Unnecessarily long lists of references should be avoided. However, authors must reference all previous publications in which portions of the present work have appeared. Long references with multiple citations within one reference number should be avoided. Each reference should be listed as a separate citation, and each should be assigned a unique reference number. Additional data and peripheral discussion should be placed in the Supporting Information rather than in the references. Supplementary references may be placed in the Supporting Information. Literature references must be numbered with Arabic numerals in the order of their first citation in the text, and the corresponding numbers must be inserted at the appropriate locations in the text. The following reference styles should be used.

- For journals:
  Rich, D. H.; Green, J.; Toth, M. V.; Marshall, G. R.; Kent, S. B. H. Hydroxyethylamine Analogues of the p17/ p24 Substrate Cleavage Site Are Tight-Binding Inhibitors of HIV Protease. *ACS Med. Chem. Lett*. **2010**, *1*, 1285-1288.

  For journal articles published online ahead of issue or online only, the DOI should be used as follows:
  2. Liu, C.; Yang, S. Synthesis of Angstrom-Scale Anatase Titania Atomic Wires. *ACS Nano*, published online March 23, 2009; DOI: 10.1021/nn900157r.

- For monographs:
  Casy, A. F.; Parfitt, R. T. *Opioid Analgesics*; Plenum Press: New York, 1986; pp 333-384.

- For edited books:
  Rall, T. W.; Schleifer, L. S. Drugs Effective in the Therapy of the Epilepsies. In *The Pharmacological Basis of Therapeutics*, 7th ed.; Gilman, A. G., Goodman, L. S., Rall, T. W., Murad, F., Eds.; Macmillan Publishing Co.: New York, 1985; pp 446-472.

Titles of journals should be abbreviated according to *Chemical Abstracts Service Source Index* (CASSI, www.cas.org/products/print/cassipr/index.html). Letters accepted for publication should be cited as "in press"; the DOI should be given if the Letter is published online. Manuscripts that are in preparation or have been submitted, but have not yet been accepted, should be cited as unpublished results or personal communications.

Web-Enhanced Objects, Such as Movies. The use of multimedia attachments such as animations and movies is encouraged. These objects should complement a reader's understanding of the research being reported. Authors should submit Web-enhanced objects via the Paragon Plus Web site as part of their submissions and clearly indicate to the Editor that the material is Web-enhanced object content. Descriptions of Web-enhanced objects should be noted in the appropriate places within the graphic caption or text of the manuscript, noting the type of file and format. Example: "A 3D rotatable image

in *xyz* format is available." For acceptable file formats and specifications, please refer to the webpage on Submission & Authoring in ACS Paragon Plus (http://pubs.acs.org/page/4authors/submission/weo.html)

Additional Requirements

Nomenclature

Nonstandard abbreviations (see *The ACS Style Guide*) and acronyms should be used sparingly, and all usage should be defined at the first occurrence in the text. Whenever possible, systematic nomenclature as recommended by IUPAC and IUBMB for chemical compounds and biomolecules should be used. Names of organisms should comply with genetic conventions, with genus and species names written in italics and spelled out in full on first appearance. Gene symbols should conform to approved nomenclature and should be italicized, whereas corresponding protein products should start with a capital letter and should not be italicized. The available nomenclature databases (e.g., LocusLink) should be consulted for correct names and symbols. Enzyme names should be accompanied by their Enzyme Commission (EC) numbers (e.g., see http://www.expasy.ch/enzyme).

Chemical Compound Characterization

The knowledge of the purity of compounds employed in biological studies, whether they are synthesized, purchased, or received as gifts, is a crucial factor for obtaining reliable and reproducible results. For studies reported in *ACS Medicinal Chemistry Letters*, it is recommended that assayed compounds be at least 90% pure as judged by HPLC, LC-MS, and NMR. The analytical methods used for compound characterization and purity assessment should be mentioned in the Experimental Procedures section. For novel compounds, it is important to obtain such data to confirm their structure and purity. Manuscripts for *ACS Medicinal Chemistry Letters* should *at least* provide exemplary characterization data for key compounds, including LC-MS, HPLC, ^{1}H NMR/^{13}C NMR (peak lists), and HRMS (see below for more details). For compounds prepared in a library format, a general experimental procedure should be provided, including full experimental details, with yields, for a representative selection of library members. The synthesis protocols and selected characterized compounds must reflect the reliability and scope of the reaction sequence. The purity of all reported library compounds should be explicitly stated. The submission of manuscripts purely based on mixture synthesis and/or mixture analysis is discouraged.

Key Compounds. Frequently, articles will present a series of compounds with analogous structures. In such a case, complete characterization data need not be reported for all compounds. However, complete data should be provided for key compounds, which are those compounds in a manuscript that receive extra attention beyond the primary or general screening that is applied to the entire set for structure–activity analysis. For example, key compounds are those that are subject to additional or follow-up studies for bioactivity in functional cellular assays, isolated tissues, or in vivo systems; advanced adsorption, distribution, metabolism, excretion, and toxicology (ADMET) studies; or in vivo pharmacokinetics/pharmacodynamics studies; etc. The relevant characterization data for **key compounds** are as follows:

HRMS and Elemental Analysis. For novel key compounds (excluding biomacromolecules and other polymers), HRMS data should be reported to support the molecular formula assignment. Elemental analysis data, which are optional, can serve as an alternative. The reported HRMS data should include the molecular formulas on which the theoretical (calcd) values are based. HRMS molecular formulas

and calcd values should include any added atoms (usually H or Na). Found values should be close enough to the calcd values, and have sufficiently small estimated uncertainties, to exclude alternative plausible formulas. The ionization method and the mass detector type should be reported. Elemental analysis values found for carbon, hydrogen, and nitrogen (if present) should be within 0.4% of the calcd values for the proposed formula. Complexed solvents, including water, should be confirmed by an additional analytical method, such as NMR for organic solvents and Karl Fischer for water.

NMR Spectral Data. ^{1}H NMR and ^{13}C NMR resonances should be listed for each key compound, and the solvent and instrument frequency should be identified. ^{13}C NMR peak shifts should be rounded off to the nearest 0.1 ppm, except when greater precision is needed to distinguish between closely spaced peaks. If detailed peak assignments are made, the type of 2D NMR methods used to establish atom connectivities and spatial relationships should be identified in an Experimental Procedures paragraph in the Supporting Information. Authors are encouraged to place in the Supporting Information copies of well-resolved ^{1}H NMR–and proton-decoupled ^{13}C NMR–spectra for every new key compound. In cases where structure assignments of complex molecules depend heavily on NMR data interpretation, including isolated and synthesized natural products, copies of suitable 2D spectra should also be placed in the Supporting Information.

Melting Points. It is suggested that a melting point *range* be reported for crystalline solid products.

Isomers and Isomeric Mixtures. The composition of isomeric mixtures (regioisomers, diastereomers, and enantiomers) must be reported. Enantiomeric ratio (er) or diastereomeric ratio (dr) values are preferred over enantiomeric excess (ee) or diastereomeric excess (de) values. Specific optical rotations should be reported for enantiopure compounds, enantioenriched isomer mixtures, and isolated natural products, when a sufficient sample is available. Specific rotations based on the equation $[\alpha] = (100 \cdot \alpha)/(l \cdot c)$ should be reported as unitless numbers as in the following example: $[\alpha]_D^{20}$ (*c* 1.9, MeOH), where the concentration *c* is in g/l00 mL and the path length *l* is in decimeters. The units of the specific rotation, $(\text{deg} \cdot \text{mL})/(\text{g} \cdot \text{dm})$, are implicit and are not included with the reported value.

Peptides and Biomacromolecules. For peptide materials, it is necessary to provide an amino acid composition analysis. For biomacromolecules, structures may be established by providing evidence about sequence and mass. Sequences may be inferred from the experimental order of amino acid, saccharide, or nucleotide coupling; from known sequences of templates in enzyme-mediated syntheses; or through standard sequencing techniques. Typically, a sequence will be accompanied by MS data that establish the molecular weight. Additional characterization and physical property data should be placed in the Supporting Information unless they are important to the main discussion.

Biological Results

Biological test methods must be referenced or described in sufficient detail (in the main text or preferably in the Supporting Information) to permit the experiments to be repeated by others. The methods used should be relevant to the purpose of the study. Authors should be cognizant of significant figures for their measurements when reporting biological data. A statement regarding inherent error, such as standard deviation, standard error of the mean (SEM), or the like, should be provided. The error limits themselves need not be presented in the main text but can appear in the Supporting Information. The number of experiments for a given data point (e.g., $N = 3$) should be indicated in some manner. In vivo biological data should be accompanied by statistical limits

(statistical significance). Doses and concentrations should be expressed as molar quantities (e.g., mol/kg, nM) whenever possible.

Computational Chemistry

When computational chemistry is a major component of a study, manuscripts must fall into one or more of the following categories:

- Practical applications of computational methods including experimental data, in particular, experimental validation of computational predictions
- Substantially novel methods along with evidence for utility in medicinal chemistry and drug design and significant potential for advancing the field, with methods that must be described clearly and comprehensibly
- Computational, statistical, or other theoretical analyses of currently available data that provide unexpected or provocative insights into topical problems and advance medicinal chemistry knowledge

When manuscripts combine computational and experimental studies, both components must be significant. For example, computational analyses are not automatically validated by the addition of a minor experimental component. For manuscripts reporting virtual screening results, purity data should conform to journal purity requirements for all experimentally tested active compounds, and convincing experimental data should be provided that demonstrate true biological activity of identified hits. For manuscripts describing new methods, the scope of the method must be validated convincingly. Sufficient information should be presented to allow the method to be reproduced and tested in other laboratories. All experimental data and molecular structures used to generate and/or validate computational models must be reported in the manuscript or Supporting Information or be readily available without infringements or restrictions.

QSAR/QSPR and Proprietary Data

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