

Science Signaling

Instructions for Authors of Research Articles and Research Resources (Initial Submission)

Scope: *Science Signaling* publishes high-impact research pertaining to the general area of cell signaling. Signal transduction encompasses aspects of various disciplines in the biological sciences, including molecular biology, development, immunology, neuroscience, microbiology, physiology, medicine, pharmacology, biochemistry, cell biology, bioinformatics, and systems biology. Papers may deal with any aspect of this interdisciplinary field and are expected to present a major research finding of broad significance. They should substantially advance our understanding of the mechanisms underlying cellular responses to external or internal cues, and refine current views of these signaling processes.

Format: Research Articles and Research Resources may be either short or long based on the number of figures and tables and length of text. For short-format articles, manuscripts should be 3000 to 5000 words with 2 to 4 figures. For long-format articles, manuscripts should be 5000 to 7000 words with 5 to 7 figures. All Research Articles should include an Abstract and the following sections: Introduction, Results, Discussion, Materials and Methods, References and Notes. Supplementary Material is permitted but should be limited to information that is not essential to the understanding and evaluation of the research presented in the paper. All data must be shown, references to unpublished results or data not shown are not permitted.

Use double spacing throughout the text, tables, figure legends, and references and notes. Electronic files should be formatted for U.S. letter paper. Technical terms should be defined. Symbols, abbreviations, and acronyms should be defined the first time they are used. All tables and figures should be cited in numerical order.

Titles should be no more than 135 characters (including spaces).

One-sentence summaries capturing the most important point should be submitted for all papers.

Authors and their affiliated institutions, linked by superscript numbers, should be listed beneath the title on the opening page of the manuscript.

Abstracts explain to the general reader why the research was done and why the results are important. The abstract should present background information to convey the context of the research, give a general idea of the methodology used, describe the results, and draw general conclusions. The Abstract is distinct from the main body of the text, and thus should not be the only source of background information critical to understanding the manuscript. Please do not include citations or undefined abbreviations in the Abstract. The preferred length of Research Article abstracts is 125 words or fewer, but a 250-word maximum is allowed for submission.

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Discussion: The discussion describes the conclusions that can be drawn from the results, as well as the significance and implications of the research.

Materials and Methods: The materials and methods should provide sufficient detail to allow replication of the results (standard methods may be referenced without a detailed description).

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Acknowledgments, including complete funding information, author contributions, data and materials availability (accession numbers to any data deposited in a public archive and statements about restrictions on sharing of materials), and any information related to authorship conflict of interest, should be gathered into a paragraph after the last numbered reference.

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Tables should be included after the references and should supplement, not duplicate, the text. The first sentence of the table legend should be a brief descriptive title. Every vertical column should have a heading, consisting of a title with the unit of measure in parentheses. Units should not change within a column.

Figures should be submitted as part of the online submission or, if necessary for large files only, on a CD. See *Instructions for the Electronic Submission of Text and Figures* below for allowable formats for submission and information on preparing art.

Graphs should be labeled on the ordinate and abscissa with the parameter or variable being measured, the units of measure, and the scale. Scales with large or small numbers should be presented as powers of 10. Simple solid or open symbols reduce well. Avoid the use of light lines and screen shading. Instead, use black-and-white, hatched, and cross-hatched designs for emphasis. Use scale bars in place of, or in addition to, magnifications. When figures are assembled from multiple gels or micrographs, a line or space should indicate the border between two original images. No part of a figure may be selectively manipulated.

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Supplementary Materials (SM) should be restricted to information that is not essential to the understanding and evaluation of the research presented in the paper. Large data sets and supplemental movies may be included in the SM. The titles of the Supplementary Materials items should be listed immediately before the References section. Please note that audio and video files cannot be submitted

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through the online submission system. Please contact the editors at sciencesignalingeditors@aaas.org regarding submission of such file types.

Statistical Analysis must be fully described in the manuscript and appropriate to the data analyzed. Data with a non-normal distribution or multiple comparisons should not be analyzed with t-tests. For guidance on selecting an appropriate statistical test, please consult a statistician or statistics textbook.

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Have you included an Abstract that does not include any cited references?	
Have you defined all symbols, abbreviations, and acronyms?	
Have you included legends for all figures and tables?	
Has all data been included (no data not shown and no citations to unpublished results)?	
Are all statistical tests described completely?	
Are the references complete? Each citation should include full article title, journal title, journal volume, year of publication, and first and last page. Please include all authors (do not use et al.).	

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Please submit the text and figures through the *Science Journals* Manuscript Submission and Information Portal (<https://cts.sciencemag.org>).

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Supplementary Materials files may include various files as described in detail below.

If you have questions, email the *Science Signaling* editors at sciencesignalingeditors@aaas.org

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Format all pages to 8.5" × 11" (standard U.S. letter-sized paper) with at least 1.25-inch or 3-cm margins. This can be done using the "Page Setup" command in most word processors and graphics programs. Please reformat pages from A4 to this size with these margins. This will ensure that if we need to print a hard copy of your paper, it is formatted correctly.

Text

Include text, references, figure captions, and all tables as part of a single Microsoft Word .docx file. For best conversion, we recommend use of Times and Symbol fonts only.

Figures

For initial submission, the figure files must be incorporated into the main text .docx or PDF file, with the legend below the figure.

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Supplementary Materials

Text and figures. Include Supplementary Materials (materials and methods, tables and figures plus captions) at the end of the main manuscript file, in a separate section titled Supplementary Materials.

Video and audio files. You may upload these file types as Auxiliary Supplementary Materials on our submission site. Acceptable formats for videos are Quicktime, MPEG and Flash. Keep videos short and the display window small to minimize the file size of the video. Supply caption information with the videos. Edit longer sequences into several small pieces with captions specific to each video sequence. Acceptable formats for audio files are .wav, .aiff and .au. Supply caption information with the audio files. Our system can handle files up to 25 MB.

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Citation style

Science Signaling uses a complete citation format that includes all authors, full titles of journal articles, the journal abbreviation, the volume, the first and last page, and the year of publication. The absolute formatting (what is bold and what is italic) is less important than having a complete citation for each journal article cited.

References and notes are numbered in the order in which they are cited, first through the text, then through the table and figure legends, and finally in the Supplementary Materials. List a reference only one time. Manuscripts published ahead of print or that are accepted and in press may be cited in order in the reference list. We do not allow references to unpublished data in support of claims or conclusions; necessary data should be included in the manuscript, its Supplementary Materials, or an approved archival database. The abbreviations for journal names are taken from the *Bibliographic Guide for Editors and Authors (BGEA)* or *Serial Sources for the BIOSIS Data Base (BIOSIS)*, a more recent publication. When in doubt, provide the journal's complete name. Spell out cities that are listed after a journal name: *Acta Zool. (Stockholm)*. Do not use op. cit., ibid., 3-m dashes, en dashes, or et al. (in place of the complete list of authors' names). For author names with Jr. or 2nd, etc. see example number 4 in the *Journals* section. Publisher's names are given in shortened form. "Press" and the like are usually dropped, except Academic Press ["Academic" is an adjective], University Park Press, CRC Press, MIT Press, and Cambridge Univ. Press [for university presses, to distinguish them from the university itself]. Only one publisher's location is needed. A few world-renowned cities (for example, Amsterdam, London, Philadelphia, Chicago, New York, Baltimore) can be listed without state or country; less well-known cities and those with names that could be confused take state abbreviations (Cambridge alone for the city in the U.K., but Cambridge, MA). Inclusive pages numbers or chapter number must be given when specific articles are referred to within an edited volume.

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Journals

1. E. J. Neer, T. Kozasa, Sites for G α binding on the G protein β subunit overlap with sites for regulation of phospholipase C β and adenylyl cyclase. *J. Biol. Chem.* **273**, 16265-16272 (1998).
2. D. J. Mangelsdorf, C. Thummel, M. Beato, P. Herrlich, G. Schütz, K. Umesono, B. Blumberg, P. Kastner, M. Mark, P. Chambon, R. M. Evans, The nuclear receptor superfamily: The second decade. *Cell* **83**, 835-839 (1995).
3. J. J. Tesmer, R. K. Sunahara, A. G. Gilman, S. R. Sprang, Crystal structure of the catalytic domains of adenylyl cyclase in a complex with Gs·GTP- γ -S. *Science* **278**, 1907-1916 (1997).
4. J. D. Brown, M. R. DiChiara, K. R. Anderson, M. A. Gimbrone, Jr., J. N. Topper, MEKK-1, a component of the stress (stress-activated protein kinase/c-Jun N-terminal kinase) pathway, can selectively activate Smad2-mediated transcriptional activation in endothelial cells. *J. Biol. Chem.* **274**, 8797-8805 (1999).
5. J. Burton, C. K. Goldman, P. Rao, M. Moos, T. A. Waldmann, Association of intercellular adhesion molecule 1 with the multichain high-affinity interleukin 2 receptor. *Proc. Natl. Acad. Sci. U.S.A.* **87**, 7329-7333 (1990).
6. A. Miyawaki, R. Tsien, Monitoring protein conformations and interactions by fluorescence resonance energy transfer between mutants of green fluorescent protein. *Methods Enzymol.*, in press.
7. F. Watson, R. S. Kiernan, D. G. Deavall, A. Varro, R. Dimaline, Transcriptional activation of the rat vesicular monoamine transporter 2 promoter in gastric epithelial cells: Regulation by gastrin. *J. Biol. Chem.* Papers in Press, published 2000 as 10.1074/jbc.M006697200.
8. K. L. Clark, P. B. Larsen, X. Wang, C. Chang, Association of the *Arabidopsis* CTR1 Raf-like kinase with the ETR1 and ERS ethylene receptors. *Proc. Natl. Acad. Sci. U.S.A.* **95**, 5401-5406 (1998) [published erratum appears in *Proc. Natl. Acad. Sci. U.S.A.* **95**, 9060 (1998)]. [style for published erratum]
9. L. C. Cantley, PI3K pathway. *Sci. Signal.* (Connections Map in the Database of Cell Signaling, as seen February 2001), http://www.stke.org/cgi/cm/CMP_6557. [style for citing a pathway in the Database of Cell Signaling at *Science Signaling*]
10. H. R. de Jonge, B. Hogema, B. C. Tilly, Protein N-myristoylation: Critical role in apoptosis and salt tolerance. *Sci. STKE* **2000**, pe1 (2000). [style for citing a *Science's STKE* paper; note: volume and year are the same]
11. E. Canalis, Notch signaling in osteoblasts. *Sci. Signal.* **1**, pe17 (2008). [style for citing a *Science Signaling* article published following title change in January 2008]

– When published in *Science Express* but not yet in print:

1. W. Jones, B. Smith, Location and function of DNA binding proteins. *Science* 20 December 2000 (10.4444/science.1054678).

– When published in *Science Express* and in print:

1. W. Jones, B. Smith, Location and function of DNA binding proteins. *Science* **252**, 1056 (2001); published online 20 December 2000 (10.4444/science.1054678).

Technical reports

1. D. E. Shaw, *Technical Report CUCS-29-82* (Columbia University, New York, 1982).
2. F. Press, *A Report on the Computational Needs for Physics* (National Science Foundation, Washington, DC, 1981). [unpublished or access by title]

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3. *Assessment of the Carcinogenicity and Mutagenicity of Chemicals* (WHO Technical Report Series No. 556, World Health Organization, Geneva, Switzerland, 1974).

Proceedings

1. *Title of Symposium Published as a Book*, sponsoring organization, city and state of meeting, inclusive dates and year (publisher, publisher's city and state, year).

Paper presented at a meeting (not published)

1. M. Konishi, paper presented at the 14th Annual Meeting of the Society for Neuroscience, Anaheim, CA, 10 to 14 October 1984. [sponsoring organization should be mentioned if it is not part of the meeting name]

Theses and unpublished material

1. B. Smith, thesis, Georgetown University, Washington, DC (1973).

2. J. A. Norton, unpublished material.

Books

1. A. M. Lister, *Fundamentals of Operating Systems* (Springer-Verlag, New York, ed. 3, 1984). [third edition]

2. J. B. Carroll, Ed., *Language, Thought and Reality, Selected Writings of Benjamin Lee Whorf* (MIT Press, Cambridge, MA, 1956).

3. R. Davis, J. King, in *Machine Intelligence*, E. Acock and R. Michie, Eds. (Wiley, New York, 1976), vol. 8, chap. 3.

4. D. Curtis, in *Clinical Neurology of Development*, B. Walters, Ed. (Oxford Univ. Press, New York, 1983), pp. 60-73.

5. *Principles and Procedures for Evaluating the Toxicity of Household Substances* (National Academy of Sciences, Washington, DC, 1977). [organization as author and publisher]

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