

Instructions for Authors of Research Articles and Research Resources (at the Revision Stage)

Your *Science Signaling* editor has requested that you submit a revised manuscript. The instructions below will guide you toward preparing your manuscript text, figures, and supplementary materials so that they can be processed by your editor and the copyediting department. [Instructions for submission of a new manuscript are very different. If you are submitting a manuscript for initial evaluation, please refer to the instructions for initial submission (<http://stke.sciencemag.org/about/help/research>.)]

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Preparing Your Text, Tables, and Figure Legends

Text

- Collate all text, references, figure and table captions, and tables into one file.
- Do not include the figures themselves.
- Use double spacing throughout the text, tables, figure legends, and references and notes.
- Use Times and Symbol fonts only.
- Format files for U.S. letter paper.
- Define technical terms, symbols, abbreviations, and acronyms the first time that they are used.
- Cite all tables and figures in numerical order.
- Include after the last numbered reference, acknowledgements, funding sources, author contributions, competing interests, and information about data and materials availability.
- If requested by your editor, please provide a version with the changes either tracked or highlighted in some way.

Acceptable formats for text. Text files must be .docx (Macintosh or Windows). We cannot use .pdf files for copyediting.

All data must be shown. Please remove all reference to data not shown and provide in the main manuscript or the supplementary materials all data, as indicated by the editor.

Organization of Research Articles and Research Resources. All Research manuscripts follow the same format.

- Title (should not exceed 135 characters including spaces)
- Authors (include affiliations linked by superscript numbers and indicate the corresponding author and provide email address)
- Abstract (ideal length is 125 words or fewer, may not exceed 250 words)
- One-sentence summary (should not exceed 135 characters including spaces)
- Introduction
- Results (may be divided into subheadings to delineate different experimental themes. Subheadings should either be all phrases or all complete sentences.)
- Discussion
- Materials and Methods
- Supplementary Materials (this is not the complete Supplementary Materials, just a list of the titles of any Supplementary Materials)
- References and Notes (numbered in the order in which they are cited, first through the text, then through the figure and table legends, and finally through the Supplementary Materials if necessary; see details regarding format of the reference section in the Citation Style section toward the end). It is preferable that all references are called out in the main text.
- Paragraph after the last reference note, which includes (i) acknowledgements, (ii) complete funding information, (iii) author contributions, (iv) competing interests, and (v) data and materials availability (statements about accession numbers and MTAs, if applicable)
- Tables (any tables should be included after the references, 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.)
- Figure legends (provide double-spaced in numerical order at the end of the manuscript. The figure title should be given as the first line of the legend. No single legend should be longer than 200 words. Nomenclature, abbreviations, symbols, and units used in a figure should match those used in the text.)

Preparing Your Supplementary Materials

Supplementary Materials should be uploaded as a .docx file prepared separately from the main manuscript file and the figure files.

Supplementary figures, text and tables. Supplementary figures, text, and tables should be supplied as a Word.docx file with any figures embedded. Place the figure caption and table legend on the same page as the figure or table. References that are only called out in the Supplementary Materials should be avoided, but if they are necessary, they should be listed in the main text after the references in the figures and tables. Our system can accommodate files up to 25 MB.

Other types of files for Supplementary Materials. Movies and animations, audio clips, database files, excel files and other file types can also be uploaded in the Auxiliary Supplementary files section of our submission site. Our system can accommodate files up to 25 MB.

Naming your Supplementary Material. The files will be renamed appropriately upon upload by our system so it is not necessary to use a particular naming convention. However, you will be able to add a short description for your file that the editor will see.

Preparing Your Art and Figures for *Science Signaling* Research Manuscripts

To expedite publication of your paper, please follow these style guidelines in preparing the figures for your revised manuscript. Note that some of these instructions (with respect to format and resolution) differ from the instructions for figures with initial manuscript submission.

Resolution and File Format

When you resubmit your revised manuscript, you will upload each of the figure files separately through our Manuscript Submission and Information Portal at <https://cts.sciencemag.org>. Uploads will be facilitated if very large figure files (> 10 megabytes) are compressed and sent as a zipped or stuffed archive (see “Compressing files” below).

Figure layout and scaling. Figures in *Science Signaling* are commonly reduced to fit in 1 or 2 columns (1 column = 21p3, or 3.5 inches, or 9 cm; 2 columns = 43p6, or 7.3 inches, or 18.4 cm). In some cases, the suggested size will be marked on the edited copy of the paper. If not, assume that we will try to make dimensions of the printed figure as small as possible. If one figure in particular is key, please indicate that it should be given some preference in sizing.

Resolution. It is *essential* that revised manuscripts have adequate figure resolution for a high-quality print and online rendering of your paper. Line art that is not available as vector files should have a resolution of 1200 dots per inch (dpi) at final print size (see “Figure layout and scaling” above). Grayscale and color artwork should have a minimum resolution of 300 dpi at final print size, and a higher resolution if possible.

Please note that these resolutions apply to figures sized at dimensions comparable to those of figures in the PDF or print version of the final published article. Reducing or enlarging the dimensions of a digital image will also change its effective resolution. For example, reducing the dimensions of an image by 50%, with no change in file size, will double its effective resolution. Doubling the dimensions of the image will cut resolution by 50%, increase visible pixilation and degrade image quality. Up-sampling artwork (artificially increasing file size or resolution) is not permitted.

Format. Electronic figure files at the revision stage must be in one of the following formats (in preferred order):

Vector illustrations and diagrams: Adobe Portable Document Format (PDF), Encapsulated PostScript (EPS), or Adobe Illustrator (AI).

Vector and raster combinations for photographs or microscopy images: Adobe Portable Document Format (PDF), Encapsulated PostScript (EPS) or TIF

Please keep an archive of all original images used in figures as *Science Signaling* may request delivery of these images for production purposes. Save these at the highest resolution possible, preferably as the original file in its native format.

We cannot accept files in formats other than those specified above; in particular, we **cannot** accept:

- Figures embedded in Microsoft Word files.
- Microsoft PowerPoint files.
- Figures prepared in Microsoft Word or PowerPoint that have been converted to other, acceptable formats such as .ps or .pdf.

Compressing files. When possible, save files using software-based image compression, such as LZW compression within Photoshop to minimize the size of figure files. In addition, for uploading unavoidably large figure files (i.e., individual figure files greater than 10 megabytes in size) to our website, please compress files into .zip or .sea archives (using an external program such as WinZip or Aladdin Stuffit) and send the compressed archives rather than the uncompressed files. Compressing figure files in this manner should result in a significantly faster upload of your files to our revision upload site.

Modification of figures. *Science Signaling* does not allow certain electronic enhancements or manipulations of micrographs, gels, or other digital images. Figures assembled from multiple photographs or images must indicate the separate parts with lines between them. Linear adjustment of contrast, brightness, or color must be applied to an entire image or plate equally. Nonlinear adjustments must be specified in the figure legend. Selective enhancement or alteration of one part of an image is not acceptable. In addition, *Science Signaling* may ask authors of papers returned for revision to provide additional documentation of their primary data.

Science Signaling Style for Figures

Maximize the space given to presentation of the data and avoid white space and clutter:

- Keep keys to symbols, if needed, as simple as possible and position them so as not to needlessly enlarge the figure; put details in figure legends.
- For groups of images presented in a panel layout such as those for multipart figures, supply images with evenly sized gutters between each panel.
- Set panels close to each other, and do not repeat common axis labels.
- Do not extend scales or axes beyond the range of the data plotted.
- Do not use minor tick marks in scales or grid lines. Avoid using y-axis labels on the right that repeat those on the left.
- Trim all extra white space, and remove unnecessary text or objects around images and multipart figures.

Color-mix and contrast considerations

- Avoid using combinations of red and green for ease of use by color blind readers.
- Use colors that are easily distinguished (not too close in hue) to identify different parts of a figure.
- Avoid using grayscale.
- Apply black or white boldface type on top of color in a color figure.

Typefaces and labels

- For images that include labels with illegible computer-generated type (for example, units for scale bars), omit such labels and put the information in the legend instead.
- Use a sans serif font whenever possible, preferably Myriad.
- If your images are vector-based and the font is NOT Myriad, Times New Roman, Arial, Courier or Helvetica, the fonts must be embedded in the file or included when the files are sent.
- Use type sizes of 7 point to 9 point for labels within figures prepared at the final size for publication. For part labels in multipart figures, (A, B, C, etc.), use CAPITAL letters set in 9 point boldface type. For labeling of axes and secondary information, use 7 point plain (Roman) or boldface type.
- When possible, place part labels at the upper left-hand corner of each figure part; if a part is an image, set labels inside the perimeter so as not to waste space.
- Use solid symbols for plotting data if possible (unless data overlap or there are multiple symbols). Size symbols so that they will be distinguishable when the figure is reduced.
- Line widths should be legible upon reduction (minimum of 0.5 pt at the final size for publication).
- Capitalize only the first letter and proper nouns in a label, not every word.
- Include units in parentheses. Use SI (Standard International) notation. If there is room, write out variables — for example, Pressure (MPa), Temperature (K).
- Set only variables in *italics* or as plain Greek letters (for example, *P*, *T*, μ). The rest of the text in the figure should be set in plain (Roman) or boldface type.
- Use leading zeros on all decimals — e.g., 0.3, 0.55—and only report significant digits.
- Avoid subpart labels within a figure part; instead, maintain the established sequence of part labels [e.g., use A, B, C, D, E instead of A, B, C(a), C(b), C(c)]. If use of subpart labels is unavoidable, use lowercase letters (a, b, c). Use numbers (1, 2, 3) only to represent a time sequence of images.

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. List a reference only one time. Any references to in-press manuscripts or personal communications should be given a number in the text and placed, in correct sequence, in the references and notes. Such references should not, however, be used to support claims or conclusions. 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.

Please use full citations in the following format:

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 UCUCS-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]
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]

Last Reference Note

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Competing interests: M.S. consults for Affomix, which has an interest in proteomics, including phosphoproteomics.

Data and materials availability: Atomic coordinates and NMR constraints have been deposited with the Protein Data Bank, accession number 2KFU.

Article Publication Fees

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