

Science Signaling Instructions for Authors of Protocols

The purpose of this section of *Science Signaling* is to provide users with a series of protocols that are detailed procedures for specific topics in signal transduction research. Although the current research literature offers procedural information, *Science Signaling* Protocols are meant to be unique by several criteria. They will comprise methods that are absolutely new, cutting-edge techniques, methods that may not be well-represented in the research literature already, and methods that are commonly used but lack the description of practical details and commentary that are helpful to users. A *Science Signaling* Protocol should be written such that a scientist, who does not specialize in signal transduction research per se, can execute the procedure successfully. The protocol should also reflect the unique viewpoint and experiences of the author.

One of the advantages of publishing on the web is that we do not have to impose strict page limits. However, we do want the protocols to be well-focused and as concise as possible. A *Science Signaling* Protocol should be written according to the general format described below. Your protocol can be linked to other sources on the web. Thus, for example, figures can include videos playable by web browsers or other associated plug-ins, and references can include links to other information on the web.

1. Please provide a **title** for the protocol and list the names of all **authors**, their **affiliations**, and contact information of the corresponding author.
2. **Abstract**
The abstract will appear in PubMed and should be 250 words or less. The abstract should briefly describe the methods described and their importance to the signal transduction community.
3. **Introduction**
This section should be a very brief statement about the purpose of the protocol, some background information, and its advantages and disadvantages compared to other methods that address the similar purpose.
4. **Materials**
This section should include a list of all the reagents, solutions, and buffers that the user will need. You should indicate the source of reagents and materials if it is critical to the procedure. Also, materials that are hazardous should be noted.
5. **Equipment**
A list of any specific, non-standard equipment and instruments (microinjection apparatus, specialized microscopes, etc.) and conditions (e.g. cold room) should be provided here.
6. **Recipes**
These should describe the composition of any buffers and solutions listed in the Materials section.

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7. **Instructions**

This is the main section of the protocol and should be comprehensive. It should explain, in detail, the steps required to perform the technique. These steps can be divided into sub-sections that are indicated by sub-headings. The steps within each sub-heading should be listed in numerical order. Although references can be cited in this section, it is imperative that you describe each step in detail. The most intriguing and useful aspect of a *Science Signaling* Protocol will be the personal annotations and “tricks” that the authors provide in this section. This type of commentary is what will distinguish your protocol from others. You may also utilize the **Troubleshooting** section for recommendations.
8. **Troubleshooting**

You should indicate problem areas in the Procedure and how they can be overcome. This information should not reiterate comments also given in the Procedure section. Remember that your comments and suggestions will provide the personal insight that will be the unique hallmark of a *Science Signaling* Protocol.
9. **Related Techniques**

This section is a description of variations and alternatives to the Procedure and may include its own Materials and Recipes sections if necessary. However, information in this section should not reiterate any information provided in the Procedure and should only be supplementary.
10. **Notes and Remarks**

This is a section where you can describe the pros and cons of your protocol and the various alternatives. You may include any comments here about the application of the procedure and also indicate any web sites that may pertain to the protocol.
11. **References**

These should be numbered in the order in which they are cited, first through the text and then through table and figure legends. List a reference only one time in the reference section.

Protocol Author Checklist

Have you included an Abstract?	
Are all authors listed correctly along with their affiliations and the corresponding author indicated?	
Have you included at least one figure or table?	
Have you included legends for the figures or tables?	
Have any of the figures been previously published?	
Have you included sources for unusual or special materials or equipment?	
Does the Instructions section contain numbered step-by-step instructions?	
Does your article have four or fewer levels of headings and subheadings?	
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 (no <i>et al.s</i>).	

General Instructions for the Preparation and Submission of Text and Figures

Please submit your text and figures through the *Science* Journals Submission and Information Portal at <https://cts.sciencemag.org>. Note that our submission site will automatically rename your files upon upload, so it is not necessary to follow a particular naming convention for your files.

Text

Text files must be in Microsoft Word .docx format. Include text, as well as any figure captions, references and all tables, in this single Microsoft Word .docx file.

Figures

Figure files should be compatible with Macintosh computer Adobe Illustrator (Version 3.0 to 9.0) and Adobe Photoshop (version 2.0 to 6.0). Figures prepared in PowerPoint will be redrawn by our art department to achieve the necessary resolution. Our submission system can handle files up to 25 MB. We can accept figures in the following formats (in descending order of preference).

- Illustrator EPS (Encapsulated Postscript) or AI (Adobe Illustrator)
- Photoshop PSD (Photoshop - with active text layers, do not flatten and do not rasterize text layers) PDF, TIF, PICT, JPG, GIF
- Files prepared in Corel Draw or Macromedia Freehand, which must be saved as EPS files
- PowerPoint PPT files

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Supplementary Materials

Text and figures. Although Supplementary Materials are discouraged for Perspectives and Commentary, if necessary, include them (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. Acceptable formats for videos or animations are Quicktime, MPEG, animated GIF 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. Upload these file types as Auxiliary Supplementary Materials on our submission site. Our system can handle files up to 25 MB.

Other files types. All other file types can be uploaded as Auxiliary Supplementary Materials on our submission site. Our system can handle files up to 25 MB.

If your files are extremely large or if you have other questions, please email the *Science Signaling* editors at sciencesignalingeditors@aaas.org.

Citation style

Symbols, abbreviations, and acronyms should be defined the first time they are used.

Units of measure should be given in SI units. If measurements were made in English units, give metric equivalents.

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 Supporting Online Material, 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 page numbers or chapter number must be given when specific articles are referred to within an edited volume.

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Citations

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).

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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]
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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