Rockefeller University Press Style Guide

Article Title

1.1 It is acceptable to change hyphenation or insert a serial comma, but do not reword article titles.

1.2 Article titles and running titles (short titles) are sentence case, with the exception of any proper nouns and the first word in a subtitle (i.e., after a colon).

1.3 In *Journal of Immunology*'s How I Treat article types, titles should begin with "How I Treat:" This should remain "I" (should not be changed to "How *We* Treat") even if there is more than one author.

> How I Treat: Infections and inborn errors of immunity

Authors' Names and Affiliations

2.1 The author line should include the first and last names of each author. Never change the order of the authors.

2.2 The numbers are ordered according to the affiliations, not the authors. When an author has multiple affiliation numbers, provide all numbers, separated with commas.

> Edward Purdue,[1,3] Paul Lazarow,[2] Jennifer Johnston,[3] and Shana Barbas[1,2,3]
>
> [1]Department of Anatomy, The Scripps Research Institute, La Jolla, CA
>
> [2]Department of Cell Biology, The Scripps Research Institute, La Jolla, CA
>
> [3]Department of Biological Sciences, Stanford University, Stanford, CA

If there is only one affiliation, it should still be given the number 1 and assigned to all authors on the list.

2.3 For all affiliations, supply the city, state (for affiliations in the USA), and country (even for institutions in the USA). Delete street addresses, PO Box numbers, postal codes, and Cedex numbers if provided.

2.4 Use the abbreviations USA and UK for institutions in America and the United Kingdom, respectively. Avoid using other abbreviations except for USA state abbreviations.

2.5 For campuses within the University of California system, style as University of California, [Campus], [City], CA.

2.6 When an author has a hyphenated first name, keep the hyphen when using initials (such as in the Acknowledgments); e.g., Zheng-Jun Gao should be Z.-J. Gao.

2.7 When a collaboration group is listed as an author, members of the group should be listed in a footnote (see 12.13) and also need to be added to the XML (see the Wiki for details).

The Abstract and TOC Blurb

3.1 Delete any "Abstract"or "Summary" section heading.

3.2 The TOC blurb ends in a period.

3.3 Don't spell out or define abbreviations unless used inconsistently.

3.4 Reference citations are not permitted except those for related articles. See the "Related articles" section.

Object Citations

4.1 All cited objects should be assigned Arabic numerals. Figures, supplemental figures, videos, and main tables should be discussed chronologically in the text. Figure panels are denoted with letters (either capital or lowercase; match the legend with the figure).

It's ok if an author briefly refers to a figure or main table out of order. Just make sure tagging in the XML is correct and objects are placed in the correct order.

4.2 The following examples show how to cite objects in the text. Italics should not be used. Also, do not cite object numbers in a range—each number must be listed and linked separately.

Fig. 5 Fig. S2 A Fig. 5, A, C, and E

Figs. 6 and 7 Fig. 6 and Fig. 7

Fig. 2, a-c; and Table 1 Fig. 2, a, b, and c; and Tables 1 and 2

Video 1, Video 2, and Fig. 3 B

SourceData F1

4.3 Multiple panels from one figure would still constitute one figure when choosing a verb.

Fig. 1 (d and e) shows the nucleus.

Fig. 1, d and e, shows the nucleus.

4.4 Descriptions of parts of figures should not be italicized or tagged; e.g., (Fig. 6, arrow).

4.5 In running text, a lone panel letter or letters should not be surrounded by parentheses or by quotation marks. When lowercase panel letters are used, clarify using the word "panel" when necessary, rather than parentheses or quotation marks.

The schematic diagram is shown in C.

The graphs in panels a and b used different measurements.

Materials and methods Section

5.1 Press policy does not permit the citation of personal websites or lab group websites anywhere in the paper. If you see a citation like this,

> Time series of naturalistic stimuli (NS) recorded at different illumination levels in different natural environments were downloaded from Dr. Hans van Hateren's webpages (http://hlab.phys.rug.nl/).

insert a query to inform the author of the policy:

> Press policy does not permit citation of personal websites, be it on a university/company site or your own server, because of their instability (i.e., the contents would be removed should the investigators move their laboratory or change ip address). Please replace this citation with a published paper or delete the citation.

URLs ending in .edu or containing "lab" are a clue that the website may not be stable.

In cases where the URL is central to the article but is also potentially unstable (e.g., online software created by the author's lab), you should keep the URL and insert a reference (and matching citation) for the site. In the reference, include as much information as possible (see the section on citing an electronic source).

5.2 Manufacturers should be styled consistently within an article (e.g., Sigma or Sigma-Aldrich, but not both).

5.3 Delete trademark symbols (e.g., ® and ™).

5.4 Affiliations must be provided for individuals who donate tangible items. Include the name of the institution, city, state (if USA), and country (even the USA).

Supplemental Material

6.1 A brief description of all supplemental materials except source data should be provided in an "Online supplemental material" paragraph at the end of the Materials and methods section.

> **Online supplemental material**
>
> Fig. S1 contains data on the characterization of the PP7-RNA labeling system in REF cells. Fig. S2 shows data on the characterization of mex67-5 cells at 26°C, which includes growth rates, GFA1 transcript levels, Mex67p localization, and mRNA export status. Video 1 shows GFA1 mRNP observed to split and merge. Videos 2, 3, and 4 show successful GFA1 mRNP export events in REF cells.

If no description is provided or if the description is too long (e.g., the author devotes a sentence to each panel of the figure/video), use the first sentence of the corresponding legend as the summary sentence.

6.2 Source data should be mentioned at the end of the corresponding figure legend. See 13.14 for details.

Appendix

7.1 An Appendix section should appear before the Acknowledgments and have a level one heading. If there are several appendices in a paper, they may be called Appendix 1, 2, and 3 or Appendix A, B, and C.

7.2 If equations and figures are cited in the Appendix, the numbering sequence begun in the text can continue, or the section(s) can have an independent numbering system (Fig. A1, Fig. A2, Eq. A1, Eq. A2).

Accession Numbers

8.1 Check all accession numbers. If the accession number produces a result but the data have not yet been publicly released, notify the author that the data must be released immediately. The article cannot be published until the database record is publicly available.

Some database accession numbers should have a special link type in the XML rather than a traditional URL. See the Workflow manual for details.

8.2 Microarray and RNA-seq datasets should be accompanied by an accession number. Search for the terms "microarray," "gene array," "Affymetrix," and "RNA-seq" and query the author to provide an accession number if none is provided:

> We require that microarray and RNA-seq data be deposited in an appropriate public database, and the relevant database accession number must be provided in the manuscript text. Microarray data should be MIAME (http://fged.org/projects/miame/) compliant.

8.3 ArrayExpress assigns accession numbers to arrays in the format A-XXXX-1, where XXXX is a four-letter code denoting where the XML was generated. GEO Datasets are named in the format GDSXXX, and GEO Series numbers are named GSEXXX.

8.4 Purchased siRNA sequences should be accompanied by a catalog number. Citations of this will usually occur in the Materials and methods section. Query the author to provide a catalog number if none is provided.

Acknowledgments

9.1 The word Acknowledgments is the heading of the section (*not* Acknowledg**e**ments).

9.2 Affiliations must be provided for individuals who donate tangible items. Include the name of the institution, city, state (for the USA), and country.

9.3 In the financial support paragraph, query for grant information if not provided. Any funding disclaimers should be placed at the end.

> This work was supported by awards from the National Institutes of Health, the American Cancer Society (B. Smith), and the American Heart Association (AHA). M. Frank-Levine was supported in part by an Established Investigatorship of the AHA. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

9.4 An author contribution paragraph is required (except in news and commentary articles) that lists the CRediT roles of each author, and it should replace any conflict of interest statement the author provided. Precede the sentence with "Author contributions:" as in the example below.

> Author contributions: Elizabeth E. Rael: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Supervision, Validation, Visualization, Writing - original draft, Writing - review & editing, Julian Alva Yano: Conceptualization, Data curation, Formal analysis, Investigation, John P. Huizar: Investigation, Methodology, Leianna C. Slayden: Formal analysis and Investigation, Madeleine Anna Weiss: Formal analysis, Investigation, Validation, and Visualization.

9.5 The Acknowledgments section can consist of several paragraphs. The order is as follows:

> (1) "Served as editor" statement (JGP only); (2) dedication; (3) general thank you's; (4) financial support; (5) author contributions.

Note Added in Proof

10.1 A section with the heading "Note added in proof" should appear between the Acknowledgments and reference list.

References and citations

General rules

11.1 Invert the first author's surname and initials; subsequent names have initials followed by surnames.

Close up spaces between initials. Ch., Wm., Th., etc. are acceptable as initials.

Hyphenated names should be styled as follows: Jean-Paul Sartre becomes J.-P. Sartre.

For Chinese names, follow the author's preference. Do not add periods or hyphens; e.g., do not change J-M. Cheung to J.-M. Cheung.

11.2 For a reference entry written by a consortium (and only a consortium), place the name of the consortium/group in place of where the author's name would normally be and alphabetize as usual.

> *C. elegans* Sequencing Consortium. 1998. Genome sequence of the nematode C. elegans: A platform for investigating biology. Science. 282:2012–2018

11.3 References cited in supplements should be included in the main list even if those references are not cited in the main text.

Reference list order: JCB, JEM, JGP

11.4 For most article types, alphabetize the reference list according to the surname of the first author.

A few types of front matter articles have numbered reference lists:

JCB: People & Ideas, Spotlight

JGP: Research News, Essay

11.5 When two entries would be cited identically in the text, they need to be distinguished by a's and b's.

> Yu, H.-Y.E., W.M. Bement, and D. Blakeslee.. 2007a. Control of local actin assembly by membrane fusion-dependent compartment mixing. Nat. Cell Biol. 9:149–159.
>
> Yu, C., G. Smith, R.G. O'Donnell, A. Lo Bello, and J. DiSantos. 2007b. Multiple myosins are required to coordinate actin assembly with coat compression during compensatory endocytosis. Mol. Biol. Cell. 18:4096–4105.

Reference list order: JHI

11.6 Numbered references should be used.

Journal articles

11.7 Include all authors' names (but see 11.7a and 11.7b below), year (issue year, when possible), complete article title, name of journal (as abbreviated in PubMed) in italics, and volume number and page range if provided.

> Jones, S.W., and T.N. Marks. 2013. Calcium currents in bullfrog sympathetic neurons. I. Activation and kinetics and pharmacology. *J. Gen. Physiol.* 94:151–168. https://doi.org/10.1085/jgp.201310992

11.7a For a reference list with >10 authors, "et al." should be used after the 10th name, with a comma before et al.

> Cheng, Y.M., C.M. Hull, C.M. Niven, J. Qi, C.R. Allard, T.W. Claydon, E. Barros, C.R. Allard, C.M. Niven, M.E. Curran, et al. 2013. Functional interactions of voltage sensor charges with an S2 hydrophobic plug in hERG channels. *J. Gen. Physiol.* 142:289–303. https://doi.org/10.1085/jgp.201310992

The exception is when the total number of authors on the list is 11. Provide the name of the eleventh author rather than using "et al."

11.7b Front matter articles (JATS @article-type="news" and "article-commentary", as shown here) use shortened references: Author et al (or Author and Author). Year. *Journal*. DOI

> Cheng, Y.M., et al. 2013. *J. Gen. Physiol.* https://doi.org/10.1085/jgp.201310992

11.8 Entries that read "In press" are permitted. This means that an article has been accepted for publication and is in production. Always check PubMed to see if the article has been published, in which case you should update the information.

If an update is unavailable, it can be published as indicated below. Use the current year.

> Anderson, R.G.W., and L. Orci. 2006. A view of acidic intracellular compartments. *J. Cell Biol.* In press.

11.9 If the journal is not listed in PubMed, spell out the journal name.

Books

11.10 Complete book entries must include all authors' (or editors') names, year of publication, title, the full name of the publisher, and city of publication. In the title, use headline-style capitalization for book

titles (i.e., capitalize the first and last words and all other major words; lowercase the/a/an, most prepositions, and common coordinating conjunctions).

> Ratliff, F. 1992. Paul Signac and Color in Neo-Impressionism. Second edition. Ash Tree Publishing, Woodstock, NY.

11.11 For books in which only the editor's name is given, the editor's name takes the place of the author but is noted as being an editor. When both authors and editors are given, style as in the second example.

> Steinman, R.M., and R.J. North, editors. 1986. Mechanisms of Host Resistance to Infectious Agents, Tumors, and Allografts: A Conference in Recognition of the Trudeau Institute Centennial. Vol. 2. Rockefeller University Press, New York.
>
> Strayed, C., and T. Andersen. 2012. Wild: From Lost to Found on the Pacific Crest Trail. C.L. Moberg, editor. Knopf Publishing, Chicago.

Chapters in books

11.12 Chapters/articles in books are cited as follows:

> Oakley, B. 1984. Trophic competence in mammalian gustation. *In* Taste, Olfaction, and the Central Nervous System. D.W. Pfaff, editor. Rockefeller University Press, New York. 92–103.

Series

11.13 Series are cited as follows:

> Guthrie, C., and G. Fink, editors. 1991. *Guide to yeast genetics and molecular biology.* Methods in Enzymology. Vol. 194. Academic Press, San Diego.

Note that the individual volume title is italicized and only the first word is capitalized, whereas the series title is capitalized headline style and roman. Page numbers are not needed.

Theses

11.14 A thesis is cited as follows:

> Bluhm, R.T. 1989. Superstrings in four dimensions. PhD thesis. Johns Hopkins University, Baltimore, MD. 140 pp.

Patents

11.15 Patents should be included on the reference list.

> Viola, A., V. Bronte, M. Crosetti, L. Lazzarato, R. Fruttero, and A. Gasco. 2010. Nitric oxide furoxan derivative compounds endowed with antitumoral activity. World Intellectual Property Organization patent WO/2010/081877, filed January 15, 2010, and issued July 22, 2010.

Include the authors, year, title, type of patent and patent number, and filed and issue dates.

Electronic sources

11.16 As much of the general publication information—author, date, title, and publisher/institution—that is available should be included; the URL follows. Include the date the material being referenced was accessed (month, day, year).

> World Health Organization. 2005. Communicable Disease Surveillance and Response (CSR). Severe Acute Respiratory Syndrome (SARS). http://www.who.int/csr/sars/en (accessed July 11, 2005).

Data

11.17 When an author references a URL or DOI in running text, keep the link in the text but then also create a reference for it. Include the author, year, title, source, and DOI or URL. Also include the version, if there is one.

> Fleming, J. 2021. Images for titin-N2A Ig81-Ig83 pdb 7HAS. Version 2. Zenodo.
>
> https://doi.org/10.5281/zenodo.4045608

Preprints

11.18 Preprint references should be an electronic source reference (see 11.16). The posting date of the version accessed by the author needs to be included. Style as follows:

> Paglia, A.N., C. Clowery, and B.T. Caszatt. 2016. In vivo deletion of HDAC7 affects B lymphocyte identity and development. *bioRxiv.* https://doi.org/10.1101/123456 (Preprint posted March 1, 2016).

In citations, place "*Preprint*" at the end.

> (Smith et al., 2016, *Preprint*) (23, *Preprint*)

Personal communications

11.19 Cite personal communications as (Caruth, A., J. Gregoire, S. O'Garro, and A. MacWade, personal communication). Written approval must be obtained from the colleague(s) cited.

Proceedings and abstracts

11.20 References to proceedings should include the date and location of the conference and the URL, if available.

> Proceedings of Machine Learning Research. 2019. 36th International Conference on Machine Learning. June 9, 2019; Long Beach, CA, United States. https://proceedings.mlr.press/v97

11.21 References to meeting abstracts should include the same information as proceedings (see 11.20), plus the abstract number/DOI. Add "[abstract]" to the end of the abstract title.

> He, K., and X. Zhang. 2019. Deep residual learning for image recognition [abstract]. *In* Proceedings of Machine Learning Research. 36th International Conference on Machine Learning. June 9, 2019; Long Beach, CA, United States. https://doi.org/10.1109/CVPR.2016.90

Place "*Abstract*" at the end of citations.

> (Lo Bello, 2025, *Abstract*) (5, *Abstract*)

11.22 Article abstracts are permitted in the reference list if the abstract is the only available record of the work. Search to see if a full, peer-reviewed article has been published. Add "[abstract]" to the end of the abstract title.

> Lofwall, M.R., E.C. Strain, R.K. Brooner, K.J. Kindbom, and G.E. Bigelow. 2002. Characteristics of older methadone maintenance (MM) patients [abstract]. *Drug Alcohol Depend*. 66 Suppl 1:S105. https://doi.org/10.2203/dad.2002.6

Place "*Abstract*" at the end of citations.

> (Wolner, 2025, *Abstract*) (5, *Abstract*)

Unacceptable references

11.23 Phrases such as “manuscript submitted,” “manuscript in preparation,” “unpublished observations,” etc. should not be used. When the source of the unpublished data is someone who is not an author of the article, the data must be cited as a personal communication (see section 11.19).

If the individuals listed with one of these phrases are authors of the manuscript that you are working on, change the text to “unpublished data.”

If some of the individuals listed are authors on the present article and others are not, delete all names and replace them with “unpublished data.” Insert a query to inform the author of the policy:

It is Press policy that citations such as “manuscript in preparation,” “manuscript submitted,” and “unpublished observation” must appear parenthetically in the text as “unpublished data” or “data not shown.” I have changed the text accordingly. Please advise if you would like to cite XXX as a personal communication and, if so, send a permission letter authorizing citation.

When the permission letter is received, change the citation to

(unpublished data; Walker, L., personal communication) or (data not shown; Walker, L., personal communication)

In-text citations: Harvard style

11.24 JCB, JEM, and JGP use Harvard-style citations (except for the article types outlined in 11.4). “et al.” should end in a period and should not be italicized. Multiple reference citations should be separated by semicolons and do not have to be in any specific order.

Use “a” and “b” in both citations and references if the citation would otherwise be identical.

These cells have been shown by Froehner (1968) to contain a 43-kD protein . . .

The *C. elegans* genome contains one spectrin gene encoded by *spc-1* (Sequencing Consortium, 1998).

Yamada and Kennedy (1984, 1986) went on to demonstrate . . .

Many groups (Pytela et al., 1983; Pytela et al., 1998; Johnson and Carlisle, 1984; Richardson, 1988a; Richardson, 1988b; Richardson and Schwarz, 1988) have verified that a specific glycoprotein receptor of ~40 kD…

NK cells are known to produce chemokines FLT3L and XCL1, supportive of conventional type 1 dendritic cells (cDC1s; Barry et al., 2018).

In-text citations: Numbered

11.25 JHI and certain front matter article types in JCB and JGP (see 11.4) use numbered citations. In-text citations should be numbered consecutively in the order in which they are first mentioned in the text. Enclose numbers in parentheses and place before any punctuation.

11.26 Grouped citations should be separated with a comma and space: (2, 11, 12, 27).

In a group of citations, each number should be given—no range: (5, 14, 15, 16), not (5, 14-16).

Related articles

11.27 A “related article” is an article that is linked to another one in the journal. In the abstract, provide the article’s DOI:

In this issue, a study (Shields et al. https://doi.org/10.1083/jcb.200903013) explores new ways …

In the TOC blurb, leave the citation as is (do not add year or DOI).

11.28 The related article should be included in the reference list of the article that cites it.

Footnotes

PDF Footer

12.1 The short title cannot exceed 90 characters, including spaces and punctuation.

12.2 The short title should be sentence case, no period. Designators and other terms usually set in all caps should remain capitalized.

12.3 One author: Smith. Two authors: Smith and Devaux. Three or more: Smith et al.

Copyright statement

12.4 There are four kinds of copyright holders:

1) Author copyright: <Author surname> or <Author and Author> or <Author et al.>

   ©2025 Zhou et al.

2) Work for Hire: <Company name>

   ©2024 Genentech

3) US Government: No specific institution will be named; there is just a standard statement.

   ©2025 This is a work of the U.S. Government and is not subject to copyright protection in the United States. Foreign copyrights may apply.

4) Crown government: <Crown copyright> and statement

   ©2023 Crown copyright. The government of Australia, Canada, or the UK ("the Crown") owns the copyright interests of authors who are government employees. The Crown Copyright is not transferable.

More information about licenses and copyright are available in the RUP Wiki.

Numbered footnotes

12.5 Footnote numbers should be superscript Arabic numerals and appear at the end of the sentence, after the punctuation mark.

Unnumbered footnotes

12.6 These items are always run as unnumbered footnotes: (1) deceased author; (2) authors contributing equally; (3) corresponding author's email address; (4) an author's current affiliation; (5) citation of a preliminary report; (6) mention that the article has been deposited on a preprint server; (7) mention that the article is in a special collection; (7) names of members who belong to a consortium in the author list (see rule 12.13).

12.7 A footnote to indicate that the work has been published previously, though not in a full-length report, is sometimes run.

> This work was presented at the American Society for Cell Biology meeting in Washington, DC on December 9, 2017, and at the Scientific Conference of Molecular Biology of the Cardiovascular System in Boston, MA on September 10, 2018, and has appeared in abstract form.

12.8 If authors acknowledge their own preprint, style as follows:

> A preprint of this paper was posted in *bioRxiv* on May 10, 2016.

12.9 When an author of a paper dies before publication, add a footnote: “Dr. Brown died on December 18, 2023.”

12.10 Correspondence should be styled as follows. Multiple corresponding authors are permitted.

The primary corresponding author should be the letter a, and any secondary corresponding author(s) should be assigned b, c, etc., regardless of their order on the author list.

> Camilla Raiborg,[1,2,b] Harald Stenmark,[1,2,c] and John Snarcks[2,a]
>
> [a]Correspondence to John Snarcks: jsnarcks@ulrik.uio.no
>
> [b]Camilla Raiborg: craiborg@ulrik.uio.no
>
> [c]Harald Stenmark: stenmark@ulrik.uio.no

12.11 If an author is currently at a different institution than their numbered affiliation (which indicates where the research was done), style the footnote as follows:

> K.L. McDonald’s current affiliation is Department of Molecular, Cellular, and Developmental Biology, University of Colorado, Boulder, CO.

12.12 Authors who contributed equally to the paper should be indicated with an asterisk in the author line and related footnote. If there are two contributed equally footnotes, the second pair of authors should be indicated with double asterisks. Do not superscript the asterisks.

> Françoise M. Roelants,[1,2,3]* Brooke M. Su,[1,2]* Joachim von Wulffen,[3] Subramaniam Ramachandran,[4,5] George O. Nads,[3,5] Elodie Sartorel,[4] Amy E. Trott,[4]** and Jeremy Thorner[5]**
>
> *F.M. Roelants and B.M. Su contributed equally to this paper.
>
> **A.E. Trott and J. Thorner contributed equally to this paper.

12.13 When a consortium is listed as being an author of the article, the group’s members should be provided in a footnote if the list is not too long. See the bottom of this Wiki page for specifics.

> JRI Live Cell Bank members: David Artis, Randy Longman, Gregory F. Sonnenberg, Ellen Scherl, Robbyn Sockolow, Dana Lukin, Vinita Jacob, Laura Sahyoun, Michael P. Mintz, Lasha Gogokhia, Thomas Ciecierega, Aliza Maria Solomon, Arielle Bergman, Kimberley Chein, and Elliott Gordon.

If consortium member affiliations are also provided, they should be listed in a supplemental table. Add a sentence to the end of this footnote:

> Affiliations are listed in Table S#.

Figures

13.1 Major inconsistencies and misspellings in the figures should be fixed.

Copyediting figure and video legends

13.2 For most article types (see 13.15 and 13.15a for exceptions), “Figure” and “Video” are spelled out at the beginning of the legend. The first sentence is bold and should be a brief summary of the results, so avoid using panel letters/descriptors.

> Figure 1. **Macrophage ingesting an aging red blood cell. (A and B)** An enlarged version of the nucleus.

Do not use links in this bold caption (it causes problems in the online display).

13.3 The use of capital and lowercase descriptors is determined by the artwork on the figures; i.e., if the panels are labeled A and B, the legend should not refer to a and b.

13.4 Parenthetical panel letters in front of their corresponding descriptions should be bold—both the letters themselves and the surrounding parentheses.

> **(A and B)** Depictions of the senses that protect the individual from external and internal perturbations.

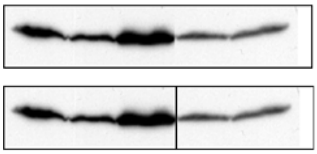
13.4a Do not apply bold formatting to panel letters mentioned in running text.

> The error bars in B and D represent SEM; in A and C, error bars represent SD.
>
> Depiction of the senses that protect the individual from external (A) and internal (B) perturbations.

13.5 Make sure the information in the text is consistent with the information in the figure. For instance, if the text says "The arrow in Fig. 6 A..." verify that, in fact, Fig. 6 A has an arrow and that the panel letter is a capital A.

13.6 Preflight editors add dividing lines to gel images that have been spliced by the author. It is the copy editor's responsibility to add the following sentence to the figure legend and query the author for approval:

> White/Black lines indicate that intervening lanes have been spliced out.



The figure on the top has been spliced (see that faint separation/space between the third and fourth bands); on the bottom, a dividing line (black) has been added for distinction.

13.7 Protein molecular weights/masses or DNA fragment sizes should be indicated for all figure panels showing gel electrophoresis. This should be indicated on the figure. If they are missing, check with the scientific editor.

13.8 Error bars ("T"-shaped extensions on bar graphs) must be defined in the legend. Usually authors note it by stating "Data are means ± SD" or simply "means ± SEM."

13.9 P values, typically noted as asterisks in the figure, must be defined within the figure or in the legend.

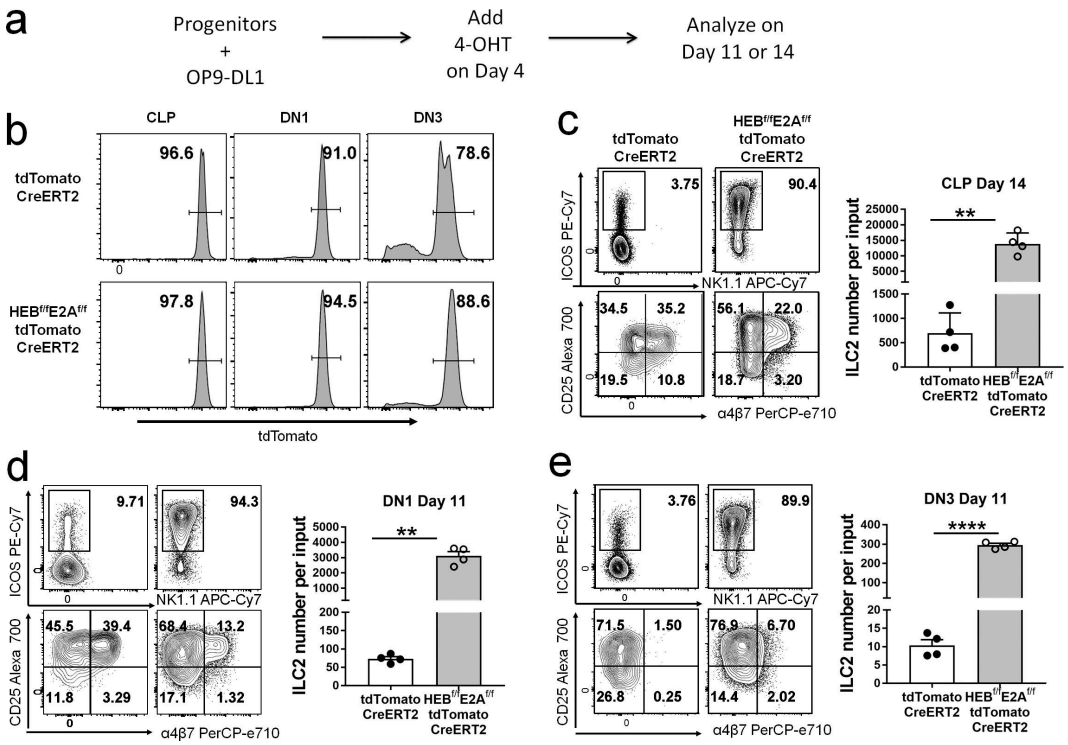


Figure 5. **ILC2 differentiation is enhanced by ablation of E proteins in vitro. (a)** The experimental scheme. CLP, DN1, and DN3 cells were sorted from indicated strains of mice and placed onto OP9-DL1 stromal cells for coculture as described in Fig. 4 a. On day 4, 4-OHT was added to induce CreERT2 function. **(b)** Efficiency of induction by tamoxifen in culture. Expression of tdTomato in $CD45^+$ cells were measured 3 d after addition of 4-OHT and shown in histograms. **(c–e)** Live $CD45^+tdTomato^+TCRb^-gdTCR^-$ cells from CLP (c), DN1 (d), and DN3 (e) cocultures were analyzed, and the gating strategies of ILC2s are shown. Numbers of $tdTomato^+$ ILC2s per input of indicated progenitors at indicated time points are shown on the right ($n = 4$). Data shown are representative of two experiments. Student's t test was used to determine statistical significance. Error bars are SEM. **, $P < 0.01$; ****, $P < 0.0001$.

13.10 The number of data points (*n*) represented in a graph must be indicated in the figure or in the legend.

JGP only: Authors need to indicate whether *n* refers to biological or technical replicates. This can be stated literally, or the author can state what the *n* specifically refers to; e.g.,

Xenopus oocyte data for deletions of the positive (458–489) and dimer (490–521) regions compared with WT control data collected on the same day from the same frog (*n* is a technical replicate).

Cumulative residence time histograms showing the distribution of ATP attachment event durations in untreated porcine cardiac myofibrils (circles; *n* = 3 pigs).

13.11 Microscopic images must have scale bars. The scale used can be noted in either the figure or in the legend.

13.12 Style permission for a reprinted figure as follows:

Fig. X is reprinted with permission from <*journal name*>.

Permission must be obtained for a reprinted or adapted figure from the copyright holder.

13.13 For videos, the playback speed or frame rate must be mentioned in the legend; e.g.,

Playback rate is 10 frames per second.

The video was acquired at 5 s per frame over the course of 4 min on a confocal microscope.

13.14 If a figure has source data associated with it, insert a sentence at the end of the legend:

Source data are available for this figure: SourceData F2.

13.15 Headshots are not numbered, and captions should simply be the names of the people pictured, in the order they are presented from left to right. Keep any photo credit that is provided (i.e., "Photo provided by University of London"). Do not set headshot captions in bold.

13.15a Since headshots are not numbered, neither can any other figure included in that article. Do not use "Figure #" in the front of the legend and do not bold the first sentence.

This applies to JCB article type "People & Ideas"; JEM article types "People & Ideas" and "Insights"; and JGP's "Research News."

13.16 Figures created in BioRender should include the figure's BioRender URL in the legend.

Created in BioRender. Nylandsted (2025) https://BioRender.com/xzbtnu6.

Tables

14.1 Table titles and column headings are initial capped only; style as you would article titles and headings. The title should not end in a period.

14.2 Left align all columns.

14.3 Place table legends before any footnotes. Footnotes should be indicated by lowercase, superscript letters. Each footnote should have its own line. Incomplete sentences are acceptable, but must end in periods.

Table 4. Properties of larger sparks with 1- and 2-ms scan periods

Morphological parameter	**1.024-ms scans (*n* = 358)**	**2.046-ms scans (*n* = 876)**
0–100% rise time	3.60 ± 0.09	4.13 ± 0.07
Peak amplitude (ΔF/F)	1.09 ± 0.02	1.13 ± 0.01
Decay time constant (ms)	4.84 ± 0.11	4.93 ± 0.08
Late offset (ΔF/F)	0.010 ± 0.002[a]	0.015 ± 0.002
FWHM (µm)	0.93 ± 0.02	1.01 ± 0.01
Mass (µm)	1.42 ± 0.08	1.89 ± 0.09

Entries show mean ± SEM values for sparks from *R. pipiens* with a fitted peak amplitude ≥0.7 ΔF/F, measured with 1.024- and 2.048-ms scan periods. The data were collected in 13 mM [K^+] Ringers from the four fibers marked by a superscript b in the first column of Table 1. As in Table 1, ΔF/F amplitudes were corrected by the F′/F scaling procedure (factor 1.3). Temperature, 17–19°C.

[a]Significant difference compared with Table 1.

Headings

15.1 Research articles (those with a JATS @article-type of research-article) must contain these sections: Introduction, Results, Discussion, Materials and methods, Data availability, Acknowledgments, and References.

Some shorter research articles combine the Results and Discussion into one section. In this case, the heading is "Results and discussion."

"Ethics statement" is also a main section heading, although it is not required.

15.2 All headings are sentence case. Note that colons represent the start of a subheading, so the first word requires a capital letter.

15.3 Headings should not be numbered and should not end with a period or any other punctuation.

Abbreviations

16.1 Do not bold, italicize, capitalize, or underline abbreviations for emphasis. Consistency is key! Do not use both the abbreviation and its spelled-out form indiscriminately.

16.2 The Abstract is considered to be separate from the rest of the text, so the following rules don't apply (see section 3.2).

16.3 Nonstandard abbreviations have to be used at least twice in the text; if only used once, spell the abbreviation out. However, there are several caveats (see below).

16.4 Abbreviations are generally acronyms. Make the distinction between abbreviations (MAP, microtubule-associated protein) and designators (MAP-1, MAP-2). A designator is a name coined from an abbreviation rather than an abbreviation itself. The following items and items like them do not need to be used at least three times:

16.4a variables that appear in equations (e.g., T_i for time of illumination), provided that they are defined in the text. If the authors have used T_i in equations, but spell out time of illumination in the text, do not change to T_i in the text.

16.4b buffers/mediums/compounds. For instance, if buffer A consists of 8 mM Na_2HPO_4, 1.5 mM KH_2PO_4, 2 mM KCl, 0.9 mM $CaCl_2$, and 0.5 mM $MgCl_2$, pH 7.4, it can be mentioned only twice. Do not replace buffer A by writing out the ingredients two times.

16.4c symbols for chemical elements (e.g., Ca for calcium; Hg for mercury).

16.4d restriction enzymes (e.g., EcoRI, HindIII, BamHI).

16.4e amino acids (common ones listed below) and synthetic peptide sequences (e.g., Gly-Arg-Gly-Asp-Ser [GRGDS]).

Ala, alanine Arg, arginine Asx, asparagine or aspartic acid Cys, cysteine or cystine Gln, glutamine Glu, glutamic acid Glx, glutamine or glutamic acid Gly, glycine His, histidine Hyl, hydroxylysine Hyp, hydroxyproline Ile, isoleucine	Leu, leucine Lys, lysine Met, methionine Orn, ornithine Phe, phenylalanine Pro, proline Ser, serine Thr, threonine Trp, tryptophan Tyr, tyrosine Val, valine

16.5 Do not use periods in abbreviations (min, wk, mg) unless the term could be misread for a word (e.g., the abbreviation for inch is in.).

Standard abbreviations

16.6 Standard abbreviations do not need to be defined, but leave the definition if the author has provided it. Do not change the spelled-out form to the standard abbreviation throughout the text. Only change if it is inconsistent.

16.7 JHI does not have a standard abbreviation list. Most abbreviations should be defined when used for the first time in the abstract and when used for the first time in the main text.

Abbreviations of standard biochemical compounds, e.g., ATP, DNA, nucleotides in nucleic acids, and amino acids in proteins, need not be defined.

16.8 Most units of measure, when used directly with a number, should be abbreviated.

second	s or sec	gram	g
minute	min	Dalton, kilodalton	D or Da; kD or kDa
hour	h or hr	liter	liter or L but ml, etc.
month	mo	meter	m
week	wk	molar	M
watt	W	mole	mol

7–10 sec ~3 h later

40,000–mol wt protein incubated for >100 min

Sometimes authors use u as the symbol for µ (micro); change u to µ when used in a unit of measure. For example, change ul, um, and ug to µl, µg, and µm, respectively.

Nonstandard abbreviations

16.9 Nonstandard abbreviations should be defined on first mention in the main text.

> These experiments suggest that microtubule-associated proteins (MAPs) do not cross-link microtubules, though further studies with MAPs must be performed to determine why they sometimes do.

Amino and Carboxy Terminus

17.1 Only one type of notation should be used throughout the paper: either C/N or carboxy(l)/amino. Carboxy and carboxyl are both acceptable, but edit for consistency.

17.2 Note that -terminal (suffix) is the adjectival form; terminus/termini is a noun.

Capitalization

18.1 If a sentence begins with an abbreviation that begins with a lowercase letter (e.g., mAb, snRNP), that first letter remains lowercase (except for x ray).

Also see Symbols for sentences that begin with Greek characters.

18.2 When *n* denotes the number in a study or group, it must be lowercase (e.g., $n = 5$).

Equations

19.1 The signs of aggregation in an equation are as follows: { [()] }. For example,

$$r_i/2\{1 \ \cos[p(9r - R_i)/E_i]\}.$$

The exception to this rule is that you can put brackets inside of parentheses if the brackets indicate concentration, as in a + b([Ca]), in which [Ca] stands for the concentration of calcium.

19.2 Equations, if numbered, should be numbered sequentially. The number appears in parentheses to the right of the equation.

$$a + b = c. \quad (3)$$

19.2a Equations that are related to one another can share the same number but are distinguished by a, b, c, etc.

$$x + y = z. \quad (5a)$$

$$p(x + y) - z + g. \quad (5b)$$

$$g(x + y) + z = p. \quad (5c)$$

19.3 Equation numbers in an Appendix can be preceded by an A. The author also may choose to continue the numbering sequence begun in the text. Either option is fine as long as it is consistent.

19.4 Cite equations in the text as Eq. 2 or Eqs. 3 and 4. Do not cite a range of equation numbers (change “Eqs. 3-7” to “Eqs. 3, 4, 5, 6, and 7”).

19.5 Punctuation following an equation should be incorporated into the equation itself rather than being outside the equation; otherwise, there will be a space between the equation and punctuation in the article.

19.6 Trigonometric expressions (e.g., exp, sin, cot, ln, log, arc, sec, tan) are always roman.

19.7 Units of measure used in an equation should be roman.

Italicized Terms

20.1 An italicized *g* refers to a unit of gravity and is to be distinguished from g, the abbreviation for gram. Both *g* and x*g* are acceptable.

> Homogenates were centrifuged for 1 h at 100,000 *g* at 4°C, and supernatant fractions were prepared as described above.

20.2 Italicize gene names.

20.3 See section 24.2 for details on how to style genus and species.

20.4 Italicize the P in "*P* element" because *P* is considered to be the name of the gene.

20.5 Set journal names/abbreviations in italics.

> She reads the *Journal of Experimental Medicine* regularly.
>
> Before I read *Le Monde*, I read *JCB*.

20.6 Italicize *n* when it denotes the number in a study or group (e.g., $n = 5$).

Numbers

21.1 When a number indicates an amount and is not followed by a unit of measure, spell out zero through nine, and use numerals for 10 and above.

21.2 When directly preceding a unit of measure, use an Arabic numeral. Note that RUP treats "well," "days," and "years" as units of measure.

> 4 ml 8 min 2 h 140 kD 37°C 101% 6-well plate 5 days 1 year

21.3 Never use a symbol such as ~ or < directly before a spelled-out number.

21.4 Treat ordinal numbers as you would cardinal numbers.

> in the second experiment
>
> on the 11th attempt

21.5 In a series containing some numbers of 10 or more and some less than 10, use numerals for all (in the example below, the series is trees).

> The 7 apple trees, 9 peach trees, and 20 plum trees were given six applications of dust.

21.6 In numbers consisting of four or more digits, use a comma if the number indicates an amount.

> 1,500 samples 1,750 rpm 20,000 U

Do not spell out numbers in terms such as buffer 2, clone 5, fraction 3, stage 1, position 10, day 4, residue 8, chromosome 12, and position 1, as these numbers do not indicate an amount.

21.7 Leave a space between a number and a unit of measure; i.e., change 6mM to 6 mM. But if the unit of measure is a symbol, close up; i.e., change 27 % to 27% and 37 °C to 37°C.

21.8 For mathematical expressions, insert a space on each side of the operator symbol (+, −, ±, <, etc.).

> $n = 6$ $P < 0.01$ mean ± SEM $2 + 4$ $7 < x \leq 14$

But close up +, −, ±, <, and ~ to the number when the math symbol is used to designate a value.

> ±3 −3 +7 >6 <1.1 ~5

21.9 Style the suffix -fold as follows.

> twofold 10-fold

a two- to fourfold increase an 8–12-fold increase

21.10 Avoid phrases like $^{1}/_{2}$ – 1 h. Change to 0.5–1 h. Likewise, change $^{1}/_{10}$ vol to 0.1 vol and $^{1}/_{2}\times$ SSC to 0.5× SSC. When a decimal is used to express any quantity less than 1, a zero must be placed before the decimal; i.e., change .3 to 0.3.

21.11 Sentences can begin with numerals.

Prefixes and Suffixes

22.1 "Post" words are usually adjectives and are typically closed up; when used correctly, they precede a noun. Change "post" to "after" if the phrase does not directly precede a noun.

Incorrect: 2 h postinjection, the rat went into spasms.

Correct: 2 h after injection, the rat went into spasms.

22.2 For adjectives ending in -like, close up -like to the root if it is listed as such in *Webster's*. If the word is not in *Webster's*, hyphenate it. Compounds retain the hyphen both before and after a noun.

22.3 *Webster's* offers half words in a variety of styles: half-life, half line, halftone, halfway. For those entries you cannot find in *Webster's*, hyphenate whether they precede or follow the noun.

the half-maximal release of secretogranin II

the release was half-maximal

22.4 Hyphenate self- compounds (self-administered, self-assembly, etc.).

Punctuation

Apostrophes

23.1 Apostrophes and quotation marks can represent mathematical symbols or units of measure. The characters mean something different in each of the following examples.

uridine 5′-diphosphate

incubated for 5′30"

10 × 12"

a 6'5" pool

In the first item, a spelled-out compound, the symbol is a prime and needs to be styled accordingly.

In the second example, change the prime and apostrophes to the abbreviations for minutes and seconds (incubated for 5 min 30 s).

In the third and fourth examples, change to in. and ft (10 × 12 in., a 6.5-ft pool).

Commas

23.2 Unless the sentence is extremely short, use a comma between two independent clauses joined by "and."

All surface H1 molecules are associated with H2, and one third of the H2 population is independent of H1.

23.3 Use serial commas.

23.4 Separate introductory statements with a comma to avoid mistaken junction.

Recently, excessive amounts of another cytokine, TGF-β, have been reported to be secreted by freshly isolated ATL cells.

To determine the gene elements used, DNA isolated from each of these five clones was digested with the relevant restriction enzymes.

23.5 The word "respectively" should be preceded by a comma and followed by a comma except when followed by a period.

At the low doses of 0.8 and 1.7 nM EGF, the responses were inhibited by 55% and 45%, respectively.

23.6 The expressions "i.e." (that is, namely, viz) and "e.g." (for example) are always followed by a comma. Use "That is" and "For example" at the beginning of a sentence rather than "i.e." and "e.g."

For both Vg9 and Vd2 transcripts, the sequence is indicated as in-frame (e.g., a potentially productive transcript based on sequence analysis) or not in-frame.

Of these, 73 (90% of all Vg9 transcripts) were in-frame (i.e., likely productive) sequences.

For example, many agents that stimulate HIV-1 replication do so in both T cells and monocytes.

23.6a The punctuation preceding i.e. or e.g. should be determined by the magnitude of the break in continuity. Generally speaking, if the clauses before and after these expressions are complete, use a semicolon. If the clause after such an expression is incomplete, use a comma or parentheses.

In the cells with localized actin mRNA, the degree of regionalization was not as great as in cells cultured for 2 d; i.e., substantial amounts of actin mRNA were found throughout the cytoplasm.

Therefore, we further investigated each of these parameters (i.e., kinetics and durations) in more detail.

Cells listed as having small differences in the size of hybridizing bands, e.g., $V_b3.1$-hybridizing bands of 4.0, 4.3, 4.5, and 4.8 kb, were consistently distinguishable when run together on the same gel.

23.7 See section 21.6 concerning commas in numbers and see section 23.18 concerning commas with quotation marks.

Dashes versus hyphens

23.8 Hyphens must have a function. If they do not add clarity for the reader (e.g., Particles were seen on the cell-surface), delete them.

Note the following examples:

A protein of 75 kD was detected.

A 75-kD protein was detected.

Cells were incubated for 2 h.

Cells were given a 2-h incubation.

The protein is DNA binding.

We studied a DNA-binding protein.

In each set, the second example warrants a hyphen because it is clarifying for the reader the construction of a compound adjective directly preceding the noun that it modifies.

23.9 Numbers: use an en dash, rather than "to" or a hyphen, to express a number range. See 23.9a and 23.9b for exceptions to this rule.

13–20 ng/ml 15–20 well-fed rats 80–85 min 10–15-fold

Note: an 85-min exposure but an 80–85-min incubation.

23.9a When a negative sign is used, do not change "to" to an en dash.

−37 to 40°C −7 to −6°C

23.9b When numbers are used with prepositional phrases (from...to, between...and, etc.), do not use dashes.

No blood was drawn between days 12 and 15.

Case 26 went from 135 to 155 lbs. in <3 wk.

23.10 En dashes also imply equal significance of juxtaposed items.

a dose–response curve

a cell–cell interaction

the prothrombin–calcium complex

Words such as complex, conjugate, interaction, pathway, mixture, and system are often clues that a coordinate term is being formed.

23.11 An en dash is also used in place of a hyphen in a compound adjective when one element consists of two words or of a hyphenated word.

cell-associated activity T cell–associated mediators	Ly-6A antigen Ly-6A–encoded cells
IL-6 molecules IL-6–transfected cells	FITC-conjugated IgG horseradish peroxidase–conjugated IgG
tissue-specific sequence cell type–specific heterogeneity	membrane-spanning domain plasma membrane–specific property
a 28-inch segment a 28–amino acid segment	RGD-containing proteins Arg-Gly-Asp–containing proteins

23.11a Just as the hyphen is not needed if the adjective does not directly precede the noun (e.g., “macrophages were monocyte derived”), the en dash is not needed if the compound adjective does not directly precede the noun (e.g., “cells that were bone marrow derived”).

23.12 Hyphens are usually sufficient in unit of measure modifiers (e.g., 4-mm-thick cell, 6-ft-long countertop).

23.13 Authors will often incorrectly place the dash.

change this	**to this**
cell-type specific reaction	cell type–specific reaction
Coomassie-blue stained gel	Coomassie blue–stained gel
vitamin-C related study	vitamin C–related study

If the term never had a hyphen to begin with (e.g., cell type, Coomassie blue, and vitamin C), it should not be hyphenated as part of the compound adjective.

23.14 Never hyphenate adverbs that end in -ly. With other adverbs (not, too, less, more, almost), the hyphen is optional, but be consistent within the manuscript.

Parentheses

23.15 Do not place a parenthetical element within a parenthetical statement. Instead, use brackets, as indicated in the examples below.

> Incubation of erythrophores in reagents that inhibit cyclic nucleotide phosphodiesterases (caffeine or theophylline [TPL]) induces pigment dispersion.
>
> The rate of VSG transport to the cell surface was significantly reduced (this result is consistent with the assumption that, as in mammalian cells [Hess, 1989], VSG becomes trapped in the trans-Golgi region under the same conditions).

The exception to this is when parentheses are part of a term name—do not change those to brackets.

> (PI(4)P was used in this particular experiment.)

23.16 In lists, either numbers or lowercase letters can be used, but be consistent in the paper. Surround them with parentheses.

> We used three types of cells in this experiment: (1) T cells, (2) white blood cells, and (3) B cells.
>
> This suggests a role in (a) killing virus cells, (b) reducing inflammation, and (c) boosting immunity.

Quotation marks

23.17 Use double quotes when coining a term or using a phrase figuratively.

> The present results support the view that E102 and E117 lymphocytes "see" the TCT.1 molecule on the surface of target cells.
>
> This suggests a possible role in "immune surveillance" as effector lymphocytes able to kill virally infected or tumor cells.

Do not use the quotation marks excessively. Delete the quotes after the first occurrence.

23.18 Place commas and periods inside quotation marks

> RNP complexes may possibly be exported by "default," through a mechanism that promotes RNP interaction.
>
> Thus, we propose the name "contactinhibin."

but place colons, semicolons, question marks, and exclamation points outside quotation marks (unless they belong in the quote matter).

Species

24.1 Scientists place living organisms into the following categories (taxons).

Example:

Kingdom	Animalia
Phylum	Chordata
Class	Mammalia
Order	Primates
Family	Hominidae
Genus	*Homo*
Species	*sapiens*

All taxons except genus and species are roman and capitalized.

24.2 Italicize genus and species names. The genus name is capitalized, and the species name is lowercase. Both the genus and species should be specified on first mention.

Arabidopsis thaliana	*Danio rerio*	*Mycobacterium bovis*	*Shigella dysenteriae*
Blastomyces dermatitidis	*Dictyostelium discoideum*	*Neisseria gonorrheae*	*Staphylococcus aureus*
Bordetella pertussis	*Drosophila melanogaster*	*Paramecium tetraurelia*	*Tetrahymena thermophila*
Caenorhabditis elegans	*Dunaliella salina*	*Persea americana*	*Torpedo marmorata*
Candida tropicalis	*Escherichia coli*	*Plasmodium falciparum*	*Trypanosoma brucei*
Chlamydia trachomatis	*Hansenula polymorpha*	*Rana pipiens*	*Tetrahymena thermophila*
Chlamydia pneumoniae	*Haemophilus influenzae*	*Saccharomyces cerevisiae*	*Torpedo marmorata*
Chlamydomonas reinhardtii	*Listeria monocytogenes*	*Schistosma mansoni*	*Trypanosoma brucei*
Clostridium difficile	*Lycopersicon esculentum*	*Schizosaccharomyces pombe*	*Xenopus laevis*

Spelling

25.1 JCB, JEM, and JGP use American spelling only. Change British variations to the American spelling.

JHI allows both British and American spelling, but one style must be used consistently throughout the paper.

Subject/Verb Agreement

26.1 Plurals of Latin and Greek words take plural verbs.

criteria are media are

curricula are phenomena are data are

26.2 The following words are regularly treated as singular:

aerobics mathematics

aesthetics measles

astronautics mumps

economics news

genetics physics

kinetics semantics

linguistics

26.3 Units of measure take singular verbs, except when used in the collective sense.

4 mg was injected *not* 4 mg were injected

but

The milligrams were administered as indicated in Table 1.

Symbols

27.1 If the author uses the spelled-out form (e.g., TGF-beta), change to the corresponding Greek symbol (e.g., TGF-β).

27.2 If a term that begins with a Greek symbol appears at the beginning of a sentence, capitalize the first letter of the word to which it is attached; e.g.,

α-Actinin was found to . . .

27.3 Never begin a sentence with symbols such as ~, <, or >. Spell them out instead.

27.4 If two symbols are used consecutively, spell out the first one; e.g., change "<−3" to "less than −3."

27.5 The correct symbol for "plus or minus" is ±. Always change 6 +/− 3 to 6 ± 3. (Note the space before and after the symbol.)

27.6 Positive and negative signs directly following a proper term indicate whether the item is positive or negative and should be superscript (e.g., Lrig1^{+} stem cells, tdTomato^{-}). A negative sign should always be a minus symbol, not a hyphen.

27.7 See sections 21.7 to 21.9 for how to style symbols with numbers.

Miscellaneous

28.1 Change the micro symbol, µ, to "µm" when used directly with a number or "micrometer" when not used with a number.

28.2 "Compare to" and "compare with"

When the purpose is to liken two things or to put them in the same category, use "to." When the purpose is to place one thing side by side with another, to examine their differences or their similarities, use "with."

In other words, one might compare a skinny boy to a fishing pole, but one would certainly compare the results of one experiment with the results of another experiment.

28.3 Articles "a" and "an" with abbreviations

The sound of the first letter in an abbreviation dictates the article to use: if it sounds like a consonant, use "a"; a vowel, use "an."

a TCA sample	a PBS solution
an mAb	an SCF-related protein

When an abbreviation is pronounced as a word and not as a string of letters, use "a."

a STOC protein	not an S-T-O-C protein

28.4 Full sequences should begin with 5′ and end with 3′ (5′-AUGCCCAAGTCAGCC-3′). Sequences should be capitalized, with no hyphens or spaces between the letters.

Change	AUG CCG GCA UGA
to	5′-AUGCCGGCAUGA-3′

Note that ′ is a prime symbol.

URLs

29.1 Websites must begin with http:// or https://. Add the prefix if missing.

List of Common Terms

Apostrophes

Note the placement (or lack) of the apostrophe in the following miscellaneous items:

Dulbecco's modified Eagle's medium	Earle's balanced salt solution
Eagle's basal medium	Eagle's minimum essential medium

complete Freund's adjuvant
Hanks' balanced salt solution
Ringer's solution
Student's *t* test
Ham's F10 and F12 medium
Krebs-Ringer solution
Stokes radius

Blots

northern blot, western blot, Southern blot

Cells

B cells, Caco-2 cells, COS-1 cells, T cells, T lymphocytes, NK cells, Kupffer cells, Langerhans cells, Leydig's cells, Purkinje's cells, Schwann cells

Close up

arrowhead, baseline, endplate, germline, coverslip

Diseases

Parkinson's disease, Legionnaires' disease, Lyme disease, venereal disease, Down's syndrome

Leave open

time course, time point

Microscopes

color-contrast microscope, dark-field microscope, phase-contrast microscope

Stains

Giemsa stain, Golgi's stain, Gram's stain, immunofluorescence staining (not immunofluore*scent*)

Syndromes

Down's syndrome, immunodeficiency syndrome (not immunedeficiency; also, along those lines, radioimmunoassay, not immune assay)

Viruses

Epstein-Barr virus, herpesvirus, herpes simplex virus, Rous sarcoma virus, Sendai virus, simian virus 40 (SV40)

Journal Differences

Item	JCB	JEM	JGP	JHI
Section order	Intro, Results, Discussion, M&M, Data availability, Acknowledgments, References	Intro, Results, Discussion, M&M, Data availability, Acknowledgments, References	Intro, **M&M,** Results, Discussion, Data availability, Acknowledgments, References	Intro, Results, Discussion, M&M, Data availability, Acknowledgments, References

Editor information?	No	No	**Yes**	No
Ref citation style	Harvard	Harvard	Harvard	**Numbered**
Spelling type	American	American	American	American **or British**
Standard abbrev list?	Yes	Yes	Yes	**No**

JEM-Specific Style for Cell Types

Cell subset	**Abbreviations and acceptable alternatives**	**Avoid**	**Related terms**
T helper cell	Th cell Helper T cell Helper cell T_H cell	TH cell	T helper type 1 cell T helper type 2 cell Th1 cell Th2 cell
Central memory T cell	Central memory cell T_{CM} cell	TCM TCM cell Central/memory T cell	
Effector memory T cell	Effector memory cell T_{EM} cell	TEM TEM cell Effector/memory T cell	
Regulatory T cell	T regulatory cell T reg cell Treg, Tregs T_{reg}	T_{Reg} T regs	
Cytotoxic T cell	CTL	TC cell	T cytotoxic type 1 cell T cytotoxic type 2 cell Tc1 cell Tc2 cell

“Cell” is interchangeable with “lymphocyte” in all cases.

Th1 cell differentiation: If you have the word “differentiation” you need “cell” before it.

Th1 response: If you have the word “response” you don’t need “cell” before it.

*Treat abbreviated terms like T reg cell as abbreviations in the text.

e.g., “Regulatory T cells (T reg cells) were used in this experiment.”

Standard Abbreviations Lists

JCB

2D two-dimensional
3D three-dimensional

A ampere
μA microampere(s)
mA milliampere(s)
Å angstrom (10^{-10}m)
aa amino acid(s)
ADP adenosine diphosphate
AMP adenosine monophosphate
cAMP cyclic AMP
ANOVA analysis of variance
AP alkaline phosphatase
ATP adenosine triphosphate
ATPase adenosine triphosphatase
a.u. arbitrary units

bp base pair
BrdU bromodeoxyuridine
BSA bovine serum albumin

°C degree Celsius
CaM calmodulin
Cdk cyclin-dependent kinase
CFP cyan fluorescent protein
CHAPS
3-(3-cholamidopropyl)diethylammonio-1 propanesulfonate
CHO Chinese hamster ovary
Ci curie(s)
μCi microcurie(s)
mCi millicurie(s)
cpm counts per minute
cps counts per second
CRISPR clustered regularly interspaced short palindromic repeats
CTP cytidine triphosphate

D/Da dalton
kD/kDa kilodalton(s)
d density
DAB diaminobenzidine
DAG diacylglycerol
DAPI 6′-diamidino-2-phenylindole
DEAE diethylaminoethyl
diam diameter
DMEM Dulbecco's modified Eagle's medium
DMSO dimethyl sulfoxide
DNA deoxyribonucleic acid
cDNA complementary DNA
DNase deoxyribonuclease
DNP dinitrophenyl
dpm disintegrations per minute

g gram
g unit of gravity
GAPDH glyceraldehyde 3-phosphate dehydrogenase
GDP guanosine diphosphate
GFP green fluorescent protein
GST glutathione *S*-transferase
GTP guanosine triphosphate
GTPase guanosine triphosphatase

h/hr hour
HA hemagglutinin
HBSS Hanks' balanced salt solution
Hepes/HEPES
N-2-hydroxyethylpiperazine-*N*′-2-ethane sulfonic acid
HPLC high performance liquid chromatography
HRP horseradish peroxidase

IFN interferon
Ig immunoglobulin
i.l. intraluminal(ly)
i.m. intramuscular(ly)
i.p. intraperitoneal(ly)
IPTG isopropyl-β-D-thiogalactoside
IU international unit(s)
i.v. intravenous(ly)

JNK c-Jun NH_2-terminal kinase

kb kilobase(s)
kbp kilobase pair(s)

L liter(s)
but **ml** milliliter(s)
m meter
μm micrometer(s)
M molar
mAb monoclonal antibody
MAPK mitogen-activated protein kinase
MDCK Madin–Darby canine kidney
MEM Eagle's minimum essential medium
MES 2-(*N*-morpholino)ethane sulfonic acid
min minute
mo month
MOI multiplicity of infection
mol mole(s)
mol wt/MW molecular weight
MOPS morpholino propane sulfonic acid
M_r relative molecular mass
mRFP monomeric RFP

PAGE polyacrylamide gel electrophoresis
PBS phosphate-buffered saline
PCA perchloric acid
PCR polymerase chain reaction
PDGF platelet-derived growth factor
PFA paraformaldehyde
P_i inorganic orthophosphate
Pipes [1,4-piperazinebis(ethane sulfonic acid)]
PKC protein kinase C
PLC phospholipase C
PMA phorbol myristate acetate
PMSF phenylmethylsulfonyl fluoride

r correlation coefficient
RBC red blood cell
RER rough endoplasmic reticulum
RFP red fluorescent protein
RIA radioimmunoassay
RNA ribonucleic acid
gRNA guide RNA
mRNA messenger RNA
miRNA microRNA
shRNA short hairpin RNA
siRNA small interfering RNA
tRNA transfer RNA
RNAi RNA interference
RNase ribonuclease
RNP ribonucleoprotein
rpm revolutions per minute
RT room temperature
RT-PCR reverse transcription PCR

s/sec second(s)
s sedimentation coefficient
S Svedberg unit of sedimentation coefficient
SD standard deviation
SDS sodium dodecyl sulfate
SEM standard error of the mean
SNAP soluble NSF attachment protein
SNARE SNAP receptor
SSC standard saline citrate
SV40 simian virus 40

***t* test** Student's *t* test
$t_{1/2}$ half-life, half-time
TBS Tris-buffered saline
TCA trichloroacetic acid
TdR thymidine deoxyribose
TGF transforming growth factor
TGN trans-Golgi network
TLC thin-layer chromatography
TNF tumor necrosis factor (α)

dps disintegrations per second
DTT dithiothreitol

ECL enhanced chemiluminescence
ECM extracellular matrix
EDTA ethylenediaminetetraacetic acid
EGF epidermal growth factor
EGFP enhanced GFP
EGTA ethyleneglycol-bis(β-aminoethyl ether)-*N*,*N*′-tetraacetic acid
ELISA enzyme-linked immunosorbent assay
EM electron microscopy
ER endoplasmic reticulum
EST expressed sequence tag

°F degree Fahrenheit
FACS BD fluorescence-activated cell sorter
F-actin filamentous actin
FAK focal adhesion kinase
FBS fetal bovine serum
FCS fetal calf serum
FGF fibroblast growth factor
FISH fluorescent in situ hybridization
FITC fluorescein isothiocyanate
FRAP fluorescence recovery after photobleaching

N normal (concentration of ionizable groups)
n number in a study or group
NA numerical aperture
NAD^+ nicotinamide adenine dinucleotide
NADH NAD^+ reduced
NADP NAD^+ phosphate
NADPH NADP reduced
NBD nitrobenzoxadiazole
ND not determined
NGF nerve growth factor
NLS nuclear localization signal
No. number
NS/ns not significant
NSF *N*-ethyl-maleimide sensitive fusion protein
nt nucleotide

OD optical density
ORF open reading frame
osM osmolar

TRITC tetramethylrhomadine isothiocyanate
Tris tris(hydroxymethyl)aminomethane
t-SNARE target membrane SNARE
TUNEL Tdt-mediated dUTP-biotin nick end labeling

U unit
UDP uridine diphosphate
UTP uridine triphosphate
UTR untranslated region
UV ultraviolet

V volt
VEGF vascular endothelial growth factor
vol volume
v-SNARE vesicle membrane SNARE

W watt
WGA wheat germ agglutinin
wk week
wt weight
WT wild type

YFP yellow fluorescent protein

JEM/JHI

2D two-dimensional
3D three-dimensional
2-ME 2-mercaptoethanol

A ampere
Å angstrom
aa amino acid(s)
AIDS acquired immune deficiency syndrome
ANOVA analysis of variance
APC antigen-presenting cell
ATP adenosine triphosphate (also **ADP**, **AMP**, **CTP**, **UDP**, etc.)
AU arbitrary unit

bp basepair
Bq Becquerel
BrdU 5-bromo-2′deoxyuridine
BSA bovine serum albumin

C complement
C region constant region of Ig
cAMP cyclic AMP
cDNA complementary DNA
CFA complete Freund's adjuvant
CFSE carboxyfluorescein diacetate

h/hr hour
H chain heavy chain of Ig
HAT hypoxanthine, aminopterin, thymidine
HBSS Hanks' balanced salt solution
H&E hematoxylin and eosin
Hepes/HEPES *N*-2-hydroxyethylpiperazine-*N*′-2-ethanesulfonic acid
HIV human immunodeficiency virus
HLA human histocompatibility leukocyte antigens
HPLC high-performance liquid chromatography
HRP horseradish peroxidase
HSV herpes simplex virus
HTLV human T lymphocyte virus
HUVEC human umbilical vein endothelial cell

Id idiotype
ID_{50} 50% infective or inhibiting dose
IFA incomplete Freund's adjuvant
IFN interferon (e.g., IFN-γ)
Ig immunoglobulin
IL interleukin (e.g., IL-2)

n number in study or group
N normal (concentration of ionizable groups)
ND not determined
NFAT nuclear factor of activated T cells
NF-κB nuclear factor κB
NP-40 Nonidet P-40
NS/ns not significant
nt nucleotide

OD optical density
osM osmolar
osmol osmole
OVA ovalbumin

PAGE polyacrylamide gel electrophoresis
PBS phosphate-buffered saline
PCR polymerase chain reaction
PE phycoerythrin
PFU plaque-forming unit
PHA phytohemagglutinin
Pipes piperazine-*N*,*N*′-bis(2-ethane sulfonic acid)
PMA phorbol myristate acetate
PMSF phenylmethylsulfonyl fluoride

succinimidyl ester
CFU colony-forming unit
Ci curie
cM centimorgan (but morgan)
CMV cytomegalovirus
Con A concanavalin A
cpm counts per minute
CRISPR clustered regularly interspaced short palindromic repeats
CSF colony-stimulating factor
CTL cytotoxic T lymphocyte

D/Da dalton
kD/kDa kilodalton(s)
D region diversity region of Ig or TCR
DAPI 6′-diamidino-2-phenylindole
DMEM Dulbecco's modified Eagle's medium
dpm disintegrations per minute
DMSO dimethylsulfoxide
DNA deoxyribonucleic acid
DNase deoxyribonuclease
DNP dinitrophenyl

EBV Epstein-Barr virus
ED_{50} 50% effective dose
EDTA ethylenediaminetetraacetic acid
EGTA ethyleneglycol-bis(β-aminoethyl ether)-*N*,*N*,*N*′,*N*′-tetraacetic acid
ELISA enzyme-linked immunosorbent assay
ELISPOT enzyme-linked immunospot
ER endoplasmic reticulum
ERK extracellular signal–related kinase
E/T ratio effector–target ratio
FACS fluorescence-activated cell sorter
FBS fetal bovine serum
FCS fetal calf serum
FITC fluorescein isothiocyanate
fMLP
formyl-methionyl-leucyl-phenylalanine

g gram
g unit of gravity
GAPDH glyceraldehyde 3-phosphate dehydrogenase
GFP green fluorescent protein
GM-CSF granulocyte/macrophage colony–stimulating factor

i.m. intramuscular(ly)
i.n. intransal(ly)
IMDM Iscove's modified Dulbecco's medium
i.p. intraperitoneal(ly)
IU international unit
i.v. intravenous(ly)

J region joining region of Ig or TCR
JAK Janus kinase
JNK c-Jun NH_2-terminal kinase

kb kilobase
KLH keyhole limpet hemocyanin
KO knockout

L liter(s)
but **ml** milliliter(s)
L chain light chain of Ig
LAK lymphokine-activated killer
LD_{50} 50% lethal dose
LFA lymphocyte function associated
LN lymph node
LPS lipopolysaccharide
LTR long terminal repeat

m meter
M molar
mAb monoclonal antibody
MAPK mitogen-activated protein kinase
MEF mouse embryonic fibroblast
MEM minimum essential medium
MHC major histocompatibility complex
min minute
MLR mixed leukocyte reaction
Mls minor lymphocyte stimulating
mo month
mol mole
mol wt molecular weight
M_r relative molecular mass
mRNA messenger RNA

r recombinant (e.g., rIFN-γ)
R receptor (e.g., IL-2R)
RAG recombination activating gene
RBC red blood cell
RFP red fluorescent protein
RNA ribonucleic acid
RNase ribonuclease
ROS reactive oxygen species
RT reverse transcription

s/sec second
s sedimentation coefficient
S Svedberg unit of sedimentation coefficient
s.c. subcutaneous(ly)
SCID severe combined immunodeficiency
SD standard deviation
SDS sodium dodecyl sulfate
SE standard error
SEM standard error of the mean
shRNA short hairpin RNA
siRNA small interfering RNA
STAT signal transducer and activator of transcription

$t_{1/2}$ half-life, half-time
TCA trichloroacetic acid
TCR T cell receptor for antigen
TdR thymidine deoxyribose (also, UdR, AdR etc.)
TFA trifluoroacetic acid
TGF transforming growth factor
TLC thin layer chromatography
TLR Toll-like receptor
TNF tumor necrosis factor (α)
TNP trinitrophenyl
Tris tris (hydroxymethyl) aminomethane

U unit
UV ultraviolet

V volt
V region variable region of Ig
vol volume

W watt
wk week
wt weight
WT wild -type

YFP yellow fluorescent protein

2D two-dimensional
3D three-dimensional

A ampere
  µA microampere
  pA picoampere
Å angstrom (10^{-10} m)
Ab antibody
AFM atomic force microscopy
Ag antigen
ANOVA analysis of variance
atm atmosphere
ATP adenosine triphosphate
  (also **ADP**, **AMP**, **CTP**, **UDP**, etc.)

bp basepair
Bq Becquerel
BSA bovine serum albumin

C coulomb
  µC microcolombs
°C degree Celsius
cAMP cyclic AMP (also **cGMP**)
cDNA complementary DNA
CFTR cystic fibrosis transmembrane conductance regulator
Ci curie(s)
  mCi millicurie(s)
  µCi microcurie(s)
CICR Ca^{2+}-induced Ca^{2+} release
Cm membrane capacitance
CNG cyclic nucleotide gated
cpm counts per minute
CRISPR clustered regularly interspaced short palindromic repeats

D/Da dalton
  kD/kDa kilodalton
dpm disintegrations per minute
diam diameter
DMSO dimethylsulfoxide
DNA deoxyribonucleic acid

ED_{50} 50% effective dose
EDTA ethylenediaminetetraacetic acid
EGTA ethyleneglycol-bis(ß-amino-ethyl ether)-*N*,*N*,*N*′,*N*′-tetra acetic acid
ELISA enzyme-linked immunosorbent assay
EM electron microscopy
  cryo-EM cryo-electron microscopy
EPR electron paramagnetic resonance

h/hr hour
HEPES/Hepes
N-2-hydroxyethyl-piperazine-*N*′-2-ethanesulfonic acid
HPLC high-performance liquid chromatography

I current
Ig immunoglobulin
IL interleukin (e.g., IL-2)
IU international unit
i-V (and g-V) single-channel current voltage relation
I-V (and G-V) membrane current-voltage (or conductance-voltage) relation

J Joule
  kJ kiloJoule

°K degree kelvin
kb kilobase
kB Boltzmann constant
kcal kilocalorie(s)
K_d dissociation constant
K_i inhibition constant
K_m Michaelis constant

LD_{50} 50% lethal dose
L liter(s)
  but **ml** milliliter(s)

m meter
  cm^3 (not cc) cubic centimeter(s)
  µm or 10^{-6} m (not µ) micrometer(s)
M molar
mAb monoclonal antibody
MD molecular dynamics
MEM minimum essential medium
Mes 2-(*N*-morpholino) ethane-sulfonic acid
µeq microequivalent(s)
  meq milliequivalent(s)
MHC major histocompatibility complex
min minute(s)

mm Hg millimeters of mercury
mo month
mol mole
mol wt molecular weight
MOPS morpholino propane sulfonic acid
M_r relative molecular mass

OD optical density
osM osmolar
osmol osmole(s)
  µosmol microosmole(s)
  mosmol milliosmole(s)

Pa Pascal
  kPa kiloPascal
PAGE polyacrylamide gel electrophoresis
PBS phosphate-buffered saline
PCR polymerase chain reaction
PG prostaglandin
P_i inorganic orthophosphate
pI isoelectric point
PIPES piperazine-*N*,*N*′-bis(2-ethane sulfonic acid)
PKA protein kinase A
  (also **PKC**, **PKG**)
PLA2 phospholipase A2 (also **PLC**)
PMA phorbol myristate acetate
PMSF phenylmethylsulfonyl fluoride

r correlation coefficient
R gas constant
R_f retardation factor
RFLP restriction fragment length polymorphism
RFP red fluorescent protein
RIA radioimmunoassay
RMSD root mean square deviation/difference
RNA ribonucleic acid
  mRNA messenger RNA
  tRNA transfer RNA
rpm revolutions per minute
RYR ryanodine receptor

s/sec second(s)
SD standard deviation
SDS sodium dodecyl sulfate
SERCA sarco/endoplasmic reticulum Ca^{2+}-ATPase
SEM standard error of the mean
SR sarcoplasmic reticulum

T temperature in degrees Kelvin
***t* test** Student's t test
$t_{1/2}$ half-life, half-time
TEA tetraethylammonium
TIRF total internal reflection fluorescence

ER endoplasmic reticulum
FBS fetal bovine serum
FCS fetal calf serum
FITC fluorescein isothiocyanate
FRAP fluorescence recovery after photobleaching
FRET Förster resonance energy transfer

g gram
kg kilogram
g unit of gravity
G conductance
GFP green fluorescent protein

MTS methanethiosulfonate

n number in study or group
N normal (concentration of ionizable groups)
NAD^+ nicotinamide adenine dinucleotide (also NADH NADP, NADPH, etc.)
ND not determined
NMDG (or NMDA) *N*-methyl-D-glucamine (or -arginine)
NMR nuclear magnetic resonance
No. number
NS/ns not significant

TLC thin-layer chromatography
Tris tris (hydroxymethyl)aminomethane

U unit
UV ultraviolet

V volt
mV millivolt
V_{max} maximum velocity
vol volume

W watt(s) (voltampere)
wk week
wt weight
WT wild type

YFP yellow fluorescent protein