STYLE GUIDE FOR CONTRIBUTORS

Current Protocols in Bioinformatics

CURRENT PROTOCOLS

Ann Boyle, Senior Developmental Editor
John Wiley & Sons, Inc.
45 Lawson Drive
Madison, CT 06443
Phone: (203) 318-8589
aboyle@wiley.com

Alex Castro, Assistant Editor
111 River Street, MSC 8-01
Hoboken, NJ 07030-5774
Phone: (201) 748-8851
Fax: (201) 748-6207
alecastro@wiley.com

Quick Guide to Unit Structure

The standard elements listed below are fully described
in the "Organization of the Manuscript" section of this guide

- Title Page
  title, author, affiliation, phone/fax/e-mail contacts
- Significance Statement (required)
  120-word-maximum statement about the significance of the protocols/topic described in your manuscript
- Abstract
  brief overview of the unit, do not include reference; maximum length 150 words
- Keywords
  three to seven keywords summarizing the principles of the unit
- Unit Title and Unit Introduction
  gives context in relation to chapter; short description of individual protocols in unit; a brief mention of any critical limitations and assumptions; a flowchart, when appropriate Make sure you have an SEO-friendly title for your unit. The title needs to be descriptive and must incorporate a key phrase related to your topic. Put your keywords within the first 65 characters of the title.
- Strategic Planning
  procedural options (e.g., protocol selection) for complex methods
- Basic Protocol(s)
  - Title
    parallel with other titles in unit; more specific than unit title
  - Introduction
    gives context of protocol with regard to unit as a whole; summary of procedure
  - Necessary Resources
    Hardware; software (including availability); files (include format of input file)
  - Steps and Annotations
    steps in <u>active</u> voice; details for <u>novice,</u> life science investigators
  - Tables and/or Figures
    e.g. screen shots to illustrate protocol steps
- Alternate and/or Support Protocols (optional)
  same elements as for Basic Protocol
- Guidelines for Understanding Results
  general discussion goes here, specific discussion of worked-out example goes in the protocols; when possible, include examples of "Bad Results" here
- Commentary
  - Background Information
    theory (suitable for molecular biologists), limitations, other options for similar analyses etc..
  - Critical Parameters
    points to consider <u>before</u> beginning
  - Troubleshooting
    suggestions for commonly encountered problems
  - Advanced Parameters (optional)
  - Suggestions for Further Analysis (optional)
- Literature Cited
  follow Current Protocols style for journals/books in this guide
- Key References with Annotations (optional)
- Internet Resources with Annotations (optional)
- Appendix

Style Guide for Contributors

Objectives and Audience

Many subscribers to Current Protocols are trained in the subject covered, but are neither trained nor experienced in a large proportion of the procedures described. Therefore, sufficient detail must be provided to permit duplication of the protocols in any laboratory, whatever the disciplinary background or level of sophistication. For the benefit of the novice experimenter, very specific information should be included where it is important to the success of the protocol. It is preferable that you provide too much detail that can be edited at the discretion of the editorial board, rather than not enough detail.

The primary audience for Current Protocols in Bioinformatics consists of molecular biologists who have an interest in applying bioinformatics tools to their own work, but who may have little to no computational experience.

Submission of Manuscript

The manuscript should be submitted to Current Protocols via ScholarOne Manuscripts, our electronic manuscript submission system. You will receive instructions on how to use this system in emails from our editorial office.

If you have questions, the address and phone number of the Developmental Editor are listed on the cover page of this guide. Also listed are the addresses and phone numbers of the editorial board members, whom you can contact regarding questions of scientific content or approach.

Role of Contributors

The procedure you provide should be reliable and efficient, and should provide tips and expertise based on your experience. Your name will be listed on the protocol, so the procedure will be associated directly with you.

As a contributor, you are responsible for submitting revisions or corrections to your published protocol to maintain its accuracy and timeliness. If you have improved the methods, contact your chapter editor or the Developmental Editor, and your changes will be scheduled for a future update.

Organization of the Manuscript

Current Protocols uses two types of units, the overview style and the protocol style. Sample published units of the protocol style are available at http://www.currentprotocols.com. Contact the Developmental Editor for a sample overview unit. **Unless stated otherwise in your invitation, please prepare your unit using the protocol style.**

Protocol-style:

The Quick Guide to Unit Structure outline on the previous page illustrates the required organization of the standard protocol unit. Listed below, corresponding to each element in the outline, are descriptive passages of these elements, *listed in the order in which they should appear in your manuscript.* It is important that you include all the elements described herein (except those listed as optional). Contact the Developmental Editor with any questions regarding the format or style of your submission..

Overview style:

On occasion, a contributor is asked to prepare an overview unit. An overview unit is presented as explanatory text with no protocol steps. It is not meant to be a thorough review of a subject, but rather an introduction to the major concepts; it is a useful format for summaries of key topics. You have a great deal of leeway in designing such a unit.

Authors should bear in mind that many readers will be new to the subject matter and will be looking to the overview for a brief and accessible introduction to the topic of interest with a brief, targeted reference list that will help guide them to additional background in the literature. The reference list should contain a maximum of 25 to

30 references, of which the vast majority should be less than 5 years old and contain, when available, 2-3 review articles that have been published within the last 2 years.

1. Title Page. Include title of manuscript, all authors' names in the order in which they are to appear in the citation, all affiliations, phone and fax numbers, and an e-mail address for the corresponding author.

2. Significance Statement (required). Please provide a 120-word-maximum statement about the significance of the protocols/topic described in your manuscript. This should be written at a level understandable to undergraduate-educated scientists outside their field of specialty. The primary goal is to explain the relevance of the work in broad context to a broad readership. It will be used in promotion of the article following publication.

3. Abstract. Provide a brief (1 paragraph, less than 150 words) informal summary of your manuscript without references. The abstract will be freely available to the public and may be the only information a reader may have to determine whether to purchase an individual unit. Please try to explain the importance of the unit and its contents as well as possible. Also note that this title is indexed by PubMed, and this abstract will be available by this and other indexing services.

4. Keywords. Provide three to seven keywords which best summarize the principle topics of your manuscript. To make sure that you have an SEO-friendly title for your unit, be sure that the important keywords are also in the title.

5. Unit Title and Unit Introduction. The unit title succinctly describes the function of the protocol(s) in your unit and should be parallel in construction with the other unit titles of the chapter (refer to the outline of the manual and consult the chapter editor if necessary or see the Table of Contents for the book, available at http://www.currentprotocols.com).

The first few sentences of the unit introduction provide a context for the unit (why the protocol is performed and/or how it relates to other units in the chapter). Second, when only one protocol is contained in the unit, the unit introduction proceeds to summarize the actual steps of the basic protocol. When multiple protocols are presented in the unit, the second portion of the unit introduction indicates the general approach of the methodology involved and briefly names and compares the protocols that are included. Any important topic-specific terminology or abbreviations should be defined here. Critical assumptions should also be briefly identified.

> *The unit introduction should not be confused with "Background Information" (see item 11 below, "Commentary"), which appears toward the end of a unit; the purpose of the unit introduction is to briefly orient the reader to the protocol steps.*
>
> *If both Web and Unix protocols exist, please present both – one as the Basic Protocol and the other as the Alternate Protocol.*

6. Strategic Planning (optional). Occasionally a protocol is sufficiently complex that a Strategic Planning section is required, either at the end of the unit introduction (when pertinent to several protocols) or prior to the materials list and steps of an individual protocol. This describes in paragraph form various procedural options. The Developmental Editor can provide you with examples of Strategic Planning sections.

7. Basic Protocol Title and Introduction. These are included when the unit has more than one protocol. The basic protocol title is more specific than the unit title; it should describe the approach being used and differentiate the steps from other protocols (alternate and support) in the unit. Please note that the titles of all protocols in the unit should be parallel in construction.

The basic protocol introduction summarizes the specific approach of that protocol, mentioning important programs, data files, equipment, etc., that are employed. Occasionally a lead-in statement of context may also be appropriate, although this should not duplicate the contextual description in the unit introduction.

8. Basic Protocol Necessary Resources List. The necessary resources list should consist of the following segments:

- *hardware*

- *software* – Please include where users can access or purchase the software.
- *files* – This should include the format of input files with references citing other protocols that generate such files. Please include a screen shot of the input file if it is **NOT** one of the following formats: FASTA, GENBANK, EMBL, PIR, PHYLIP, or PDB.
- where applicable, a third, single run-on entry, *"Additional hardware, software, and files for procedure (UNIT X.X);"* this entry is meant to avoid the listing of materials and steps for a procedure that can instead be cross-referenced to another unit by number. Especially for common procedures, please check whether portions of your protocols can be effectively covered by such cross-references; be sure to provide appropriate connecting information (e.g., necessary changes to the file formats). (In the initial core volume of each manual, contributors will generally not be able to provide this information, although you may refer to the outline and consult the chapter or Developmental Editor if necessary.)

All resources are to be listed *in order of use* in their respective categories In addition, recommendations regarding specific suppliers may be noted here (especially if the supplier is critical or if the item is difficult to obtain).

Sample File. If you have sample data that will be used in the worked-out example please provide an electronic version of the file. We will make the sample file available to our readers.

9. Basic Protocol Steps and Annotations. The protocol steps should describe the actions performed, employing the **active tense** versus the passive: e.g., "View the structure in RasMol." rather than "The structure is viewed in RasMol." Additionally, when there are more than 10 steps to a protocol, provide ***subheadings*** to clarify the sequence of steps at each major juncture in the experiment; these headings do not affect the consecutive numbering of the protocol steps, but help organize a long protocol. These, too, should be in the active tense, e.g., "Construct the dendrogram…"

In most cases, an example should be incorporated with the step-by-step procedure. Please use "stable" protein families for database searches (to improve reproducibility) and cite the database version and date of search. Include screen shot figures of sample output. The specific results from the sample can be described in the steps or annotations.

Useful auxiliary information can be included after some protocol steps (as needed) in the form of italicized ***annotations.*** These may cover special tips for performing a step successfully, descriptions of *why* a step is performed, emphasis regarding crucial parameters, descriptions of expected results (e.g., expected statistics), alternate ways to perform the step, cautions regarding necessary assumptions, time considerations, storage information, and theoretical asides.

10. Alternate and/or Support Protocols. **Alternate protocols** are included when the basic protocol you have chosen is inappropriate for certain important applications, or if different processes are widely used in other labs. If both Web and Unix versions of the method exist, present one as the Basic Protocol and the other as the Alternate Protocol. **Support protocols** should be provided to supplement the basic protocol where necessary; it is preferable to list a separate protocol for, e.g., preparatory techniques, than to combine everything into one extremely long protocol. (This strategy is also helpful for later cross-referencing of procedures in the manual.) If the procedure is very short, you may employ a textual rather than a step-by-step format for the alternate/support protocols, although it is preferable, for clarity, to itemize steps whenever possible.

a. Alternate/support protocol title and introductory text (statement of purpose). Each alternate and support protocol should have a distinguishing title (parallel in construction to the basic protocol) and an introduction describing why the particular protocol is being included in the unit (for *alternate protocol:* why it is performed instead of the basic protocol and how the steps differ; for *support protocol:* description of its relation to the protocol it is supporting).

b. Necessary Resources. Alternate and support protocols should each have their own necessary resources list of hardware, software, data files, and special equipment.

11. Guidelines for Understanding Results. A discussion of the anticipated results, including expected statistical values (e.g., E-value), indications that the analysis was done correctly, or flags indicating that perhaps the results are not reliable. It should also mention what conclusions can reasonably be drawn from the analysis. General discussion should be included here; specific discussion of the worked-out example should be provided in the protocol steps or annotations. When possible, please include and discuss examples of "bad results" here.

12. Commentary. A complete commentary section should include at least a few sentences of discussion for each of the categories listed below.

a. Background Information. A brief discussion of the theory and applications of your procedure. Some or all of the following elements could be included in this section:

- why the procedure is performed (historical development, where pertinent);
- the central advantages (and disadvantages) of the technique chosen (with brief description and references for alternative methods);
- comparison of basic and alternate protocols or comparison with other methods currently in use;
- applications of methods;
- citation of original or useful literature and brief discussion of primary references;

This section is not to be confused with the introduction at the beginning of a unit. The introduction is a practical organizational tool while Background Information helps the reader to develop an intuitive sense of the experimental design.

b. Critical Parameters. Information that is critical to the success of the experiment, supplementing or repeating comments in the protocols or annotations.

c. Troubleshooting. Discussion of problems that may be encountered in the procedure (including variations from anticipated results) with suggested remedies. Sometimes itemized in a 3-column table of Problem, Possible Cause, and Solution.

Optionally, the two preceding sections may be combined into one, titled "Critical Parameters and Troubleshooting."

Critical Parameters and Troubleshooting are among the most popular features of Current Protocols. Remember, the commentary is being pitched to investigators who have never performed the technique.

d. Advanced Parameters *(Optional.)* *An optional section describing parameters that more advanced users may opt to modify.*

e. Suggestions for Further Analysis *(Optional.)* *This section provides researchers with a sense of how the results fit into the larger framework of bioinformatics tools that are available. Based on the results from the unit, suggest subsequent analyses that researchers might want to consider. Include appropriate cross-references to other units.*

13. Literature Cited. Full references to any literature cited in the unit.

Should you wish to use EndNote, Reference Manager, or Zotero, please download the corresponding output style from our For Authors page.

References in this section should be listed alphabetically according to the following style:

a. **Journal article**

Baker, R.H. Jr., Suebsaeng, L., Rooney, W., Alecrim, C.C., Dourado, H.V., and Wirth, D.F. 1986. Specific DNA probe for the diagnosis of *P. falciparum* malaria. *Science* 231:1434-1436.

b. **Book**

Sambrook, J., Fritsch, E.F., and Maniatis, T. 1989. Molecular Cloning: A Laboratory Manual, 2nd ed. Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y.

c. **Chapter in a book**

Matthews, B. 1983. Liposome-mediated delivery of DNA to plant protoplast. *In* Handbook of Plant Cell Culture, Vol. 1: Techniques for propagation and breeding (D.A. Evans, W.R. Sharp, P.V. Ammirato, and Y. Yamada, eds.) pp. 520-540. Macmillan, New York.

All references listed in this section must be cited in the unit or they will be removed. Entries should include the names of all authors. Citations in the text are according to the style "(Smith, 1989; Jones, 1992)" or "as described by Ausubel et al. (1991)," where "et al." is employed for references with more than two authors.

Government regulations and protocols should be cited as described above at first mention but may thereafter be referred to by number, if applicable: "EPA Method 8080 (EPA, 1992)"; later, "EPA Method 8080."

14. Key References with Annotation. One (or more) key reference may be supplied. These may, but need not necessarily, be drawn from your literature-cited list. A key reference might be a seminal journal article, an elucidating review chapter or paper, or an important book. For each one, provide a one-sentence descriptive annotation, explaining to the reader why you consider this reference to be of particular value.

15. Internet Resources with Annotations. Listing of Web sites, FTP servers, and the like that are of particular interest or utility to the researcher. For each one, provide a one-sentence descriptive annotation signaling to the reader why you consider this resource to be of particular value.

http://www.bbri.harvard.edu/rasmb/rasmb.html

Web site for most recent programs and discussion group on analytical ultracentrifugation.

16. Appendix (Optional.) If a more detailed discussion of the technique's theoretical foundations is warranted, please present it in the Appendix separate from the commentary. Readers without a strong computational background should be able to perform and understand the protocol without relying on the Appendix.

Figures

Appropriate figures illustrate some aspect of the protocol (equipment, flow chart of steps, appearance of gradients, etc.) or expected results. Submit electronic files as individual image files during the manuscript submission process. See the *Guidelines for Current Protocols Illustrations and Photographs* that follow for details of acceptable image file formats.

All figures must be cited in the unit and accompanied by a detailed figure legend. Figures should be referred to as Figure 1, Figure 2, etc. If previously published, cite the original source(s) and provide a Permission Request Form (see below). Contact the Developmental Editor if you have questions.

Tables

Tables should be self-explanatory and prepared on separate pages at the end of the manuscript. Include a table number, table title, and explanatory footnotes. Cite each table in the text of your manuscript. If previously published, cite the original source(s) and provide a copyright permission form (see below).

Videos/Movies

Current Protocols is now accepting videos/movies that enhance understanding of the procedures described in the protocols. Such a video would illustrate a process involved in carrying out a protocol, particularly if that process requires special skills. For an example, see the videos available from currentprotocols.com in the "Website Resources" section.

If the video depicts animal research, a statement indicating that IACUC guidelines were followed must be included, preferably at the start of the video.

Videos acceptable for inclusion in a unit must be of suitable quality for web publication. Videos will be used as submitted, if acceptable. We will do no editing. Video files should be submitted with the manuscript, but separate from it.

Each video should be cited within the manuscript at the step the video illustrates. And each video should be listed at the end of the submitted manuscript (after Figure Legends) with (1) an identifying file name, (2) a title for the video, and (3) a video legend describing the content. The title and legend will be used online, with the video identification, to help the reader find the appropriate video.

Abbreviations, Measurements, and Mathematical Notation

Current Protocols manuals follow the guidelines of the *American Society for Microbiology Style Manual for Journals and Books* (ASM, Washington, D.C., 1991). Please define all standard abbreviations at their first usage

and clearly indicate the accepted style (bold, italics, upper- or lower-case, super- or subscript) for names of organisms, genetic elements, commercial products, etc.

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Please do not hesitate to contact the Developmental Editor or our offices at any time. We would appreciate any suggestions you might offer.

Current Protocols Art Guidelines for Authors

GENERAL REQUIREMENTS

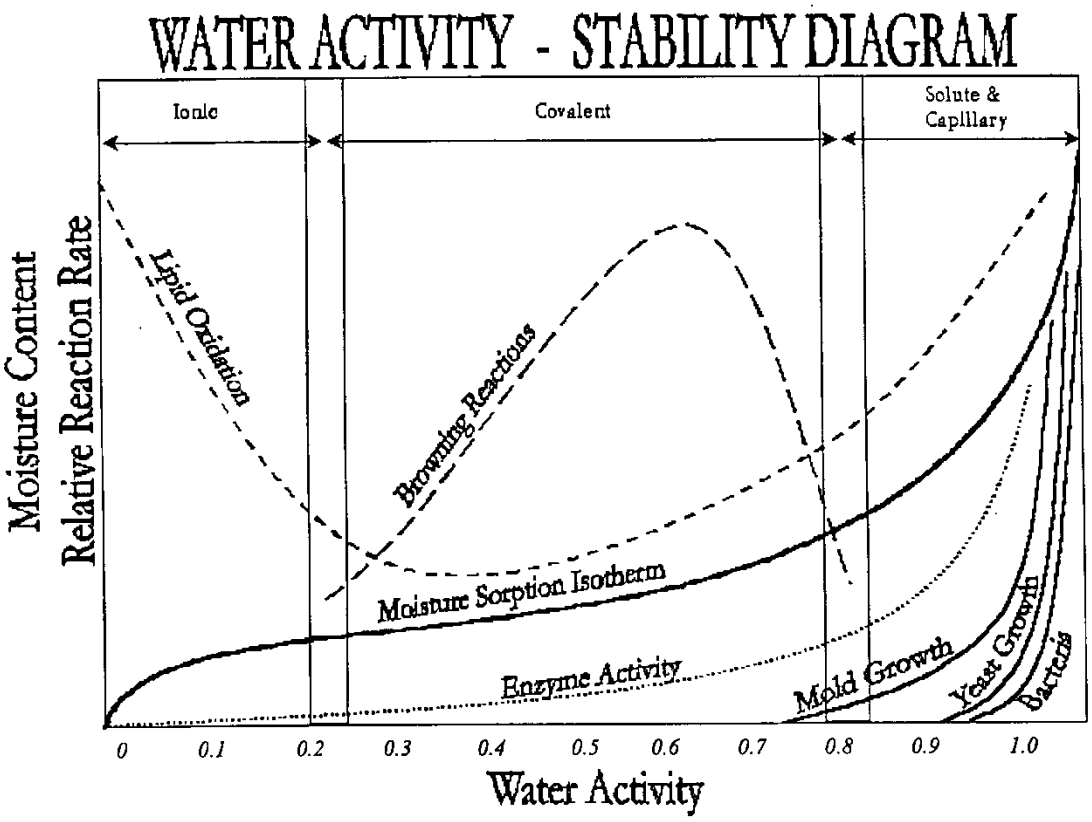
- Publication quality digital files must be provided for all figures.
- If the figure requires a key (e.g., "◆ morphine, □ dexamethasone, ● nimesulide"), the key should be part of the figure (not the figure caption).
- Panel identifiers should be bold capital letters (**A**, **B**, **C**, etc.) and should appear in the upper left-hand corner of each panel.

DIGITAL FILES

- **Preferred formats:** Digital files should be in EPS or TIF format. TIF format with a resolution of 266-300 dpi produces the best results for halftone images; EPS format produces the best results for line art and graphs.
- **Other acceptable formats:** If you are unable to supply files in a preferred format, we may be able to use files in other formats (e.g., JPG, Photoshop, Adobe Illustrator, PDF, and ChemDraw). Please be sure that the files are of print publication quality and to provide us with information about the file format and software version used to create the image. Corel Draw files for figures should be avoided.
- **Screenshots** should be JPG, GIF, or TIF files saved at screen resolution (i.e., 72-96 dpi).
- **PowerPoint:** If you have created a graph or flowchart in PowerPoint, submit the images as PowerPoint files. However, images created with other software (e.g., Illustrator) should be submitted as TIF, EPS, or the original application format. Importing those images into PowerPoint will significantly reduce their print quality.
- **PDF and Microsoft Word:** Figures converted to PDF or imported to Microsoft Word will usually produce very poor results and sometimes be unusable by production. These formats can be useful during manuscript review, but for final submission figures should be in one of the preferred formats listed above.

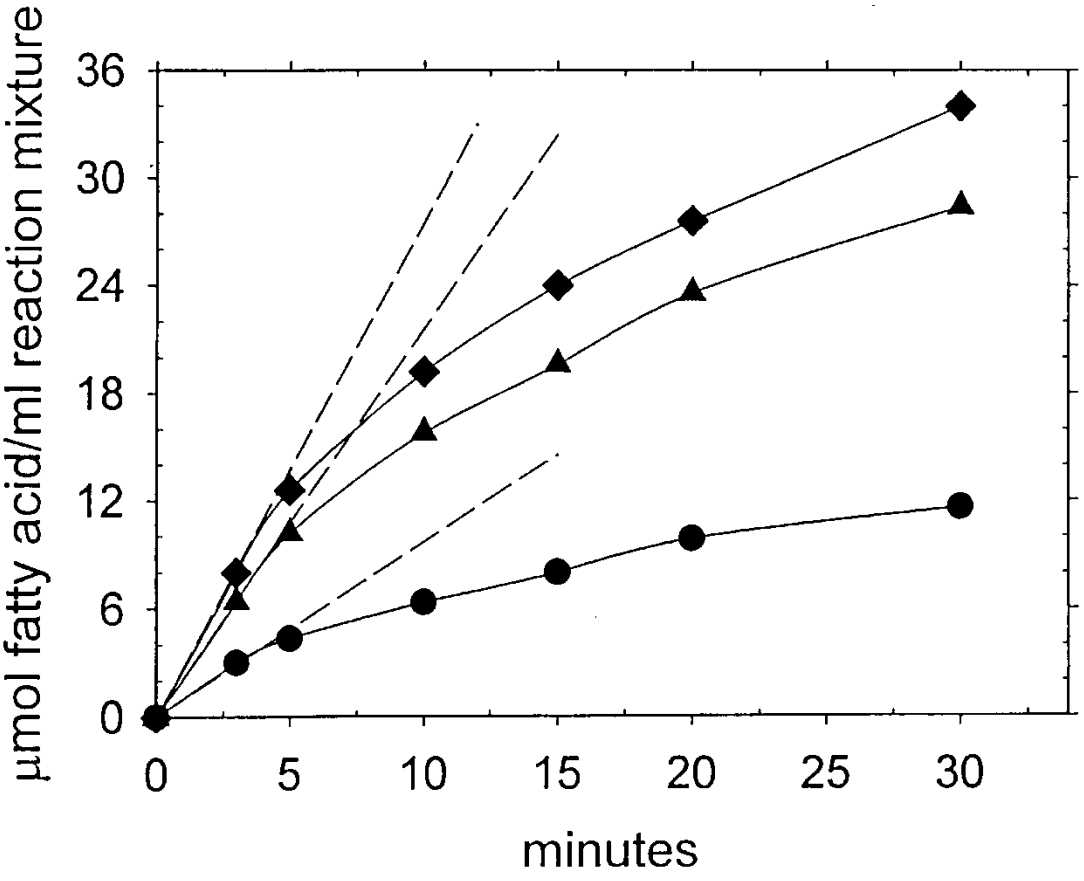
COLOR FIGURES

- Figures will appear in color on CP Online.



Bad Graph

This is a sample of a bad graph. Please note, the low quality resolution of the entire figure. Also the fonts are not Helvetica.

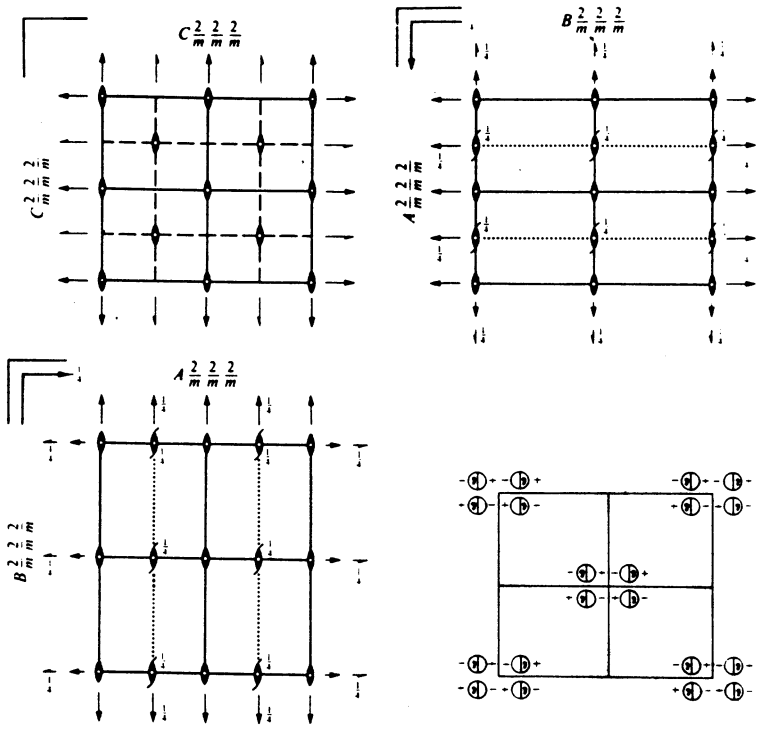


Good Graph

This is a sample of a good graph. Please note, the high quality the entire figure. Also the fonts are Helvetica. Such a figure can easily be reduced in order to fit the page.

$C\,m\,m\,m$ D_{2h}^{19} $m\,m\,m$ Orthorhombic

No. 65 $C\,2/m\,2/m\,2/m$ Patterson symmetry $C\,m\,m\,m$



Origin at centre $(m\,m\,m)$

Asymmetric unit $0\le x\le\frac{1}{4};\ 0\le y\le\frac{1}{4};\ 0\le z\le\frac{1}{4}$

Symmetry operations

For (0,0,0)+ set

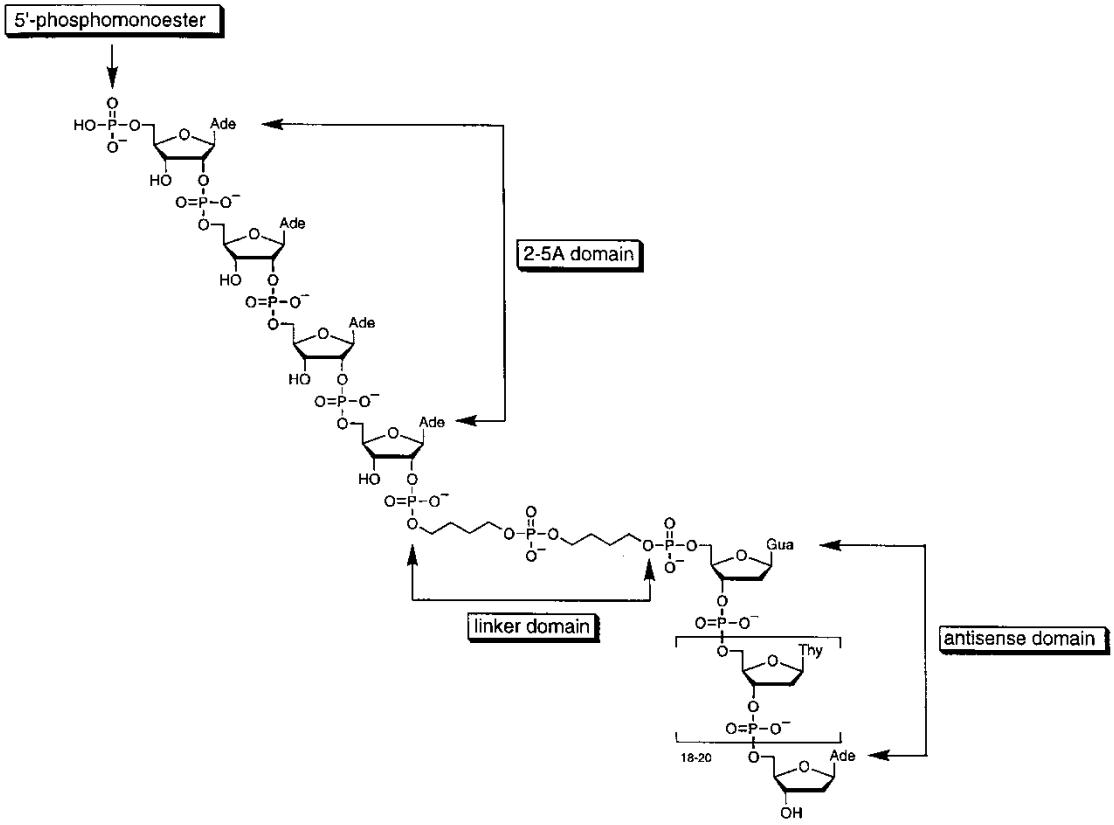
(1) 1 (2) 2 0,0,z (3) 2 0,y,0 (4) 2 x,0,0
(5) $\bar{1}$ 0,0,0 (6) m x,y,0 (7) m x,0,z (8) m 0,y,z

For ($\frac{1}{2}$,$\frac{1}{2}$,0)+ set

(1) $t(\frac{1}{2},\frac{1}{2},0)$ (2) 2 $\frac{1}{4},\frac{1}{4},z$ (3) 2(0,$\frac{1}{2}$,0) $\frac{1}{4},y,0$ (4) 2($\frac{1}{2}$,0,0) $x,\frac{1}{4},0$
(5) $\bar{1}$ $\frac{1}{4},\frac{1}{4},0$ (6) $n(\frac{1}{2},\frac{1}{2},0)$ $x,y,0$ (7) a $x,\frac{1}{4},z$ (8) b $\frac{1}{4},y,z$

Bad Figure

This is a sample of a bad figure. Please note, the poor quality resolution of the entire figure. Also the fonts are not Helvetica and so small they are almost illegible.



Good Figure

This is a sample of a good figure. Please note, the high quality resolution of the entire figure. Also the fonts are Helvetica and legible.

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Title of publication _____

Title of selection _____ Copyright date _____

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To page _____, line _____ , ending with the words _____

Figure No. _____ on page_____ Table No. _____ on page _____
(If necessary, attach continuation sheets)

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Thank you,

_____

_____

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