

BIOLOGY 163 LABORATORY
INTRODUCTION TO A LITERATURE CRITIQUE
(Revised Fall 2009)

Scientific research papers are the means for communication of significant experimental results. You have written scientific papers of your results and experiments in Introductory Biology this year, but it is also necessary to be able to read scientific papers with a critical eye. During the past several weeks we have been discussing a variety of topics, and you have been doing considerable reading in your textbook. However, you have been relying on secondary sources (the textbook authors or us) to summarize the scientific results of others and present them to you. Now you will have the opportunity to go directly to the primary literature and evaluate it critically. As you may know, reading a scientific paper is not at all like reading a novel or even like reading your textbook. It may be necessary to read and reread a particular section of a paper before the authors' meaning comes through, but the effort is definitely worth it.

In general scientists direct their research papers toward the professional audience of a particular journal (just as you direct yours towards Introductory Biology students of the future). Therefore it may, at first, appear extremely difficult at this stage to pick up a scientific paper and analyze it. However, with practice, the primary scientific literature is quite accessible and will provide to you the most current information available to anyone.

Accessing the paper

You will read and critique the following paper for this assignment:

Prodigiosin from the supernatant of *Serratia marcescens* induces apoptosis in haematopoietic cancer cell lines

Beatriz Montaner, Sira Navarro, Maria Piqué, Marta Vilaseca, Marc Martinell, Ernest Giralt, Joan Gil and Ricardo Pérez-Tomás
Br J Pharmacol (2000) 131: 585-593

You are responsible for downloading and printing your own copy of the paper. A .pdf version is publicly available online and can be accessed at:

<http://www3.interscience.wiley.com/cgi-bin/fulltext/121663625/PDFSTART>

A link to the paper is available on the BI163 Web site, along with a glossary of potentially unfamiliar terms you may encounter in the paper.

Evaluating the paper

Use the following questions to guide your critique of the paper:

1. What was the specific purpose of this study? Is the hypothesis adequately supported by the background information?
2. What specific experimental methods were employed to answer the questions(s) posed? Were these methods appropriate?
3. What specific evidence was provided to answer the questions(s) posed? Are the results reported in the text an accurate reflection of the data presented in the figures and tables?
4. What conclusions were made? Did the evidence provided support those conclusions?
5. Is the paper written clearly and organized logically?

Use your answers to these questions to evaluate the paper and to make a recommendation to the editors regarding its publication. Justify your recommendation with a short summary paragraph.

RECOMMENDATION

_____ Acceptable

If acceptable:

_____ Outstanding contribution

_____ No revision needed

_____ Solid contribution

_____ Minor revision
(re-review not required)

_____ Marginal contribution

_____ Major revision
(re-review required)

_____ Reject on the basis of

_____ Manuscript presentation

_____ Scientific content

You must have your review prepared BEFORE coming to lab. You will be expected to participate in a group discussion of the paper at that time.