

Guidelines for unknown investigation lab report



MIC 206 Guidelines for Unknown Investigation Lab Report General

Considerations: A. Papers must be typed, written in past tense, and in third person. (-50 if not typed) B. Paper Structure: Each section is to be headed with the appropriate heading. C. Format and Style 1. Format: a. Face Page: The face page should contain the title of the experiment, the author of the report, class section time, & date submitted. (1. 5 points) b. Page Format: (1. 5 points) 1. One-inch margins 2. Last name & page number as the header 3. Double spaced 4. Section headings . Other considerations: 1. Tables, charts, and figures should be clearly labeled with captions. Ex. Figure 1/Table 1. (2 points) 2. ALL genus and species names must be italicized and the genus name must be capitalized.

The first time that a genus name is used, write it out in full (*Pseudomonas aeruginosa*). After that, one letter abbreviations may be used (P. *aeruginosa*). (3 points) D. Plagiarism: Remember that you may quote another person's work, or even paraphrase it as long as you give credit and cite the work you are quoting, paraphrasing, or referring. -50 if plagiarism occurs) 3. Parts of a Scientific Paper: A. Abstract: This appears first in the paper, but it is the last section written. In the Abstract: (1) state the major objective(s) and scope of the experiment, (2) briefly describe the methodology used, (3) summarize the results, and (4) state the major conclusions. (3 points) B. Introduction: In this section, you should provide general background information on the subject to aid the reader. This can be followed by a very brief description (1-2 sentences) of the problem that was investigated.

Every report must include a clearly stated hypothesis. A hypothesis is a statement of what may or may not occur under defined conditions. Your

hypothesis must be clearly (readily identifiable) presented in this section of your report. Remember that a hypothesis does not have to be correct, just testable. (5 points) C. Materials and Methods: For this section, you should merely cite your laboratory manual sections and/or pages used. Any changes made to the procedure should also be noted in this section.

Finally, any changes made to the directions outlined in this manual must be stated in the materials and methods section. For instance, if the directions stated that you should incubate your sample at 37°C for 1 hour, and you incubated your sample at 25°C for 30 minutes, you must note the deviation. If you use any procedures NOT in the lab manual, describe them fully and cite them. Do not do anything more than listed above for this section. (2 points) D. Results: You must describe what you did to obtain the data that you are presenting in this section (If in doubt - refer to a journal article).

You should describe the data in such a manner that if the reader chose not to look at the figures, tables or graphs, they could still understand your data. The data must be summarized in figures, tables or graphs, which must be clearly labeled and referred to specifically by name when they are being discussed. You must present both your raw data and calculated results. For the calculated results, a sample calculation must be provided so that we can determine how you obtained the calculated values. When graphs are used, be sure that both axes are labeled correctly.

Remember that the dependent variable is ALWAYS presented on the vertical axis. As a rule, the intersection of the X- and Y-axes should be the zero point. The spacing between time points should be proportional to the elapsed time. DO NOT USE BAR GRAPHS, they are not appropriate in this course. In the

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case of differential tests, you must describe in general terms what constitutes a positive and negative result. That way we can determine whether you are interpreting your results correctly. All data MUST be reported.

Deleting data to suite your hypothesis is the same as inventing data in order to suite your hypothesis. If there are data that appear to be erroneous, you may choose not to use those data or datum, but you must still include it in the results and justify your decision not to use it. Finally, if an experiment fails and you have no data, you may obtain results from a classmate or your instructor. You cannot receive full credit for a report that has no data analysis. If you use outside data, you must state the source of the results. (7 points) E.

Discussion: This is the only section in which the use of the first person is acceptable. Remember, in your Discussion, you do not reiterate your results, rather you interpret them and discuss their meaning. Present a discussion of your results as it relates to your hypothesis. Bring attention to data that support your hypothesis. You must also bring attention to data that contradict your hypothesis and provide possible explanations for why the data do not correlate with your hypothesis. It is typically easier to write a discussion when your data do not support your hypothesis.

However, that does not mean you should create a hypothesis that will purposely not be correct. You should also compare and contrast your results with other work in the field; do your results and interpretations agree or disagree with other members of your class? outline considerations for the Discussion Section: 1. State you conclusions clearly and boldly 2. Summarize

the supporting data (results) for each conclusion you draw. 3. Include the following in the discussion: a. Normal Microbiota of your bacteria b. Bergey's Group Classification/ Identification c.

Does your bacteria have a Role in Disease d. Does your bacteria have a Role in Biotechnology e. One unique fact, not previously reported above, that you found interesting f. What communal relationship does your bacteria have with our environment or our bodies. 4. End your paper with a short summary or conclusion regarding the significance of the experiment. (15 Points Discussion section) F. Bibliography: In writing your Introduction, Mat & Meth, and Discussion, you will need to support your assertions and contentions with citations from the literature.

You may cite such sources as journal articles, textbooks, the lab manual, an encyclopedia, a dictionary, or any other useful sources. Be very wary of using websites - anyone can write anything and put it on a website. There is no minimum or maximum number of references required for any given report. Citations and References shall be in American Society of Microbiology (ASM) style. (-25 points if you do not properly use ASM style) Obtained isolated colonies on MAC plate, from original unknown sample (1 point) Obtained isolated colonies on CAN/PEA plate, from original unknown sample (1 point) Note: isolated colonies must have been obtained from quadrant streaking original unknown mixed culture tube. If a second culture or a control culture was given to you, after failing to get isolated colonies from your original mixed culture and you observed isolated colonies at that point, the 1 point is not earned.) Identified Gram Negative bacteria: (2.5 points) Identified Gram Positive bacteria: (2.5 points) Report is written free of

grammatical or mechanical errors as determined by the TA. (3 points)

Source: Stout, V. MIC 302 Report Writing Guidelines. Arizona State University