Effects of Alcohol on Drosophila Behavior

Your Name

Bi03622
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Section 2

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Notes: Title should be descriptive but concise, containing some key words
Title page should include only the information shown here
Use no smaller than 12 pt font for entire lab report
Capitalize words in title (except “of”, “the”, “in”, …….)
**ABSTRACT** (Capitalized with bold face, underline or all caps)

A simple, stand alone, summary of the important points of the paper. Usually a 1-2 paragraphs. The reader should be able to understand the problem, the hypotheses, the key experiments done, the results and the major conclusions by reading *only* the abstract. Should be about 10% of your entire lab report.

**EXAMPLE**

Drosophila (fruit fly) is a well-studied organism which has been used as model to understand higher-order organisms both at the behavior and molecular levels. Because this organism reproduces rapidly a number of mutants phenotypes exit, Drosophila has proven to be very useful tool. Because high alcohol levels has been shown to have an effect of development of the human fetus, we asked whether similar effects are observed and to what extent in the Drosophila. In order to test this hypothesis, Drosophila were treated with varying levels of alcohol at various times during embryogenesis. Our results demonstrate that as little as 10% alcohol treatment has profound effects on Drosophila development. In addition, embryogenesis was delayed and abnormal wing development was observed. These results suggest that alcohol affects many aspects of Drosophila embryogenesis.
INTRODUCTION

Write a 2-4 paragraph introduction to the subject matter to give the casual reader a sense of what is being studied, and what questions the experiments are addressing. Your mom should be able to read this and make some sense out of it. It should provide enough background information that it convinces the reader that the experiments to be described later in the lab report are worthwhile. When you make a claim, cite the source (for this class, it may the Gilbert textbook). The last sentence or two should state your hypothesis, then describe the experiment actually done. Lastly, state the predicted or actual outcome of your experiment.

MATERIAL and METHODS

Provide a detailed account of the materials used and the methods carried out. It should include enough detail so that a classmate could repeat the experiment just by reading your description. Include controls used, number of tests subjects done, and all parameters that were controlled for (e.g. temperature, pH, light). Always use past tense. Avoid outline form or numbered items. This section will likely be 1-2 pages in length.

RESULTS

This section summarizes your data and should also be a narrative. Your first sentence should describe the question being asked. The second sentence should give the rationale for the first experiment. Make sure to include enough experimental detail such that the reader knows what you are about to describe.

EXAMPLE

The previously published results demonstrating a high rate of deformations in newborns of alcoholic mothers led us to ask questions about alcohol effects on development of a model organism, Drosophila. First, we tested the effect of increasing alcohol concentrations on pupal development in Drosophila. Drosophila were exposed for 1-4 hours to increasing levels of ethanol and measurements made of when pupa formation was detected. Results (Figure 1) show that …………..

Present data in an organized, readable form. If data cannot be explained in a few words (and most cannot), then use a table or a graph. Hand-drawn graphs and table are not acceptable. These should be produced on a computer. Tables and figures (graphs, drawings) should be labeled consecutively (e.g. Table 1, Table 2, Figure 1). All figures and tables should have a descriptive title and a legend to allow the reader to make sense to the table/figure without reading the rest of the results.

Each time a result is described, reference should be made to the figure.

EXAMPLE

The treatment of Drosophila with 20% ethanol resulted a 30% increase in heart rate (Table 2)” However, although the heart rate increased, it quickly returned to normal 10-15 minutes after removal of the alcohol (Figure 2).

Do not explain why the results turned out the way they did, only describe the results.

DISCUSSION

This section tells the reader what you think the results mean. Use a few sentences to restate your experiment and your hypothesis. Then mention the results and describe what you think they mean. Don’t repeat the details, just the major findings.

EXAMPLE
Alcohol exposure in humans has been demonstrated to result in multiple errors in development. The experiments described here examined the effect of alcohol of development of a drosophila. Although we predicted that ………., our results showed that …….. Surprisingly, although the ………. the effects were minimal. The effect suggests that…………..

Describe what may have gone wrong, variables that could have affected your results, and interpretation of results. List how the experiment might be done for more reliable results. What would you change? Could these results be applied to other creatures? State any conclusions.

Total length should be 1-2 pages in length.

LITERATURE CITED

List references, usually in the order they are cited in the text.

EXAMPLES


TABLES

Should be computer-generated and easy to understand. Normally, each table should be placed on a separate page. However, it is acceptable to embed tables in the results narrative. Each table should be numbered consecutively in the order they are mentioned in the text. The table should have a descriptive title with appropriate column labels as shown in the following example:

EXAMPLE

<table>
<thead>
<tr>
<th>Observation Day</th>
<th>Plate Treatment</th>
<th>Diameter of Growth (mm)</th>
<th>Prevalent Life Cycle Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 4</td>
<td>A-1/ Control</td>
<td>59</td>
<td>Mexican hat; few fb’s</td>
</tr>
<tr>
<td>Day 7</td>
<td>A-1/ Control</td>
<td>64</td>
<td>fb’s TNTC</td>
</tr>
<tr>
<td>Day 4</td>
<td>A-1/ Stock solution</td>
<td>8</td>
<td>Dense growth; ~10 fb’s;</td>
</tr>
<tr>
<td>Day 7</td>
<td>A-1/ Stock solution</td>
<td>16</td>
<td>Dense growth; ~30 fb’s; some slugs</td>
</tr>
<tr>
<td>Day 4</td>
<td>A-2/ 1:2 solution</td>
<td>18</td>
<td>Dense growth; trail of fb’s</td>
</tr>
<tr>
<td>Day 7</td>
<td>A-2/ 1:2 solution</td>
<td>28</td>
<td>Dense growth; ~20 clustered fb’s</td>
</tr>
<tr>
<td>Day 4</td>
<td>A-2/ 1:4 solution</td>
<td>14</td>
<td>Slug formation/movement</td>
</tr>
<tr>
<td>Day 7</td>
<td>A-2/ 1:4 solution</td>
<td>28</td>
<td>Slug trails formed fb’s</td>
</tr>
</tbody>
</table>

FIGURES

Graphs are great to show patterns in an eye-catching form. They should be consecutively in the order they are mentioned in the text. Each graph should contain a descriptive title and labeled x and y axes (including proper units). A legend may be required to make a graph understandable. The x axis (horizontal line) will always contain the independent variable and the y axis the dependent variable. Standard error bars should be included if the data represents averages three or more independent experiments.
Figure 3. M38 cells, but not Fado-2 cells, undergo programmed cell death in response to multiple compounds.