

Instructions for Lab Report for Amgen Lab 1

Your lab write up must be typed and demonstrate your understanding of all of the information presented in the Amgen labs introduction, 1.1, 1.2, 2a, 4a and 5. Your write up **MUST** include the following:

- Header
 1. title, your name, date, your class period
 - Introduction
 1. one paragraph explaining what biotechnology is and why it is important
 2. two to three paragraphs explaining gene cloning and how it is used to treat disease (including the answers to questions #2-4 of the pre-lab for Lab 2a)
 3. one or two paragraphs on diabetes that summarizes your answers to #7-16 of the pre-lab question for the Introduction section
 4. at least one diagram showing the process of using genetic engineering to make human proteins
 - Lab 1.1: How to Use a Micropipette
 1. one paragraph explaining what a micropipette is and why/how they are useful to researchers (answer
 2. one or two paragraphs explaining how to use a micropipette (be sure to include all of the "Lab Techniques" from the section)
 3. a graphic that helps to explain how to set the pipette to the correct measurement
 - Lab 1.2: Gel Electrophoresis
 1. at least two paragraphs explaining what gel electrophoresis is, how it works, and how to do it. Be sure your explanation includes the answers to questions #1-9 of the pre-lab for 1.2 and use illustrations to help your explanation.
 2. one or two paragraphs that includes the answers to the four post-lab questions on page 32. If you want, you can just write the answers in a numbered list format and then write one paragraph summarizing what you learned.
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- Lab 2A and 4a: Creation of the Recombinant Plasmid
 1. one paragraph explanation of how recombinant DNA is made (including the answers to questions #7-4 and #12 of the pre-lab for Lab 2a)
 2. one paragraph explaining the rise of antibiotic resistance (your answer to question #6 of the pre-lab for Lab 2a)
 3. one paragraph explanation of how the recombinant plasmid was made that we used to transform the E coli bacteria (the answers to questions #16-18 of the pre-lab for Lab 2a; and including a diagram showing the two starting plasmids and the final plasmid that was produced)
 4. one paragraph explaining why it is necessary to verify the recombinant plasmid and how to do this (including the answers to questions #1, 2, 4, 7, 8, 12, 13, 14, 15 of the pre-lab for Lab 4a)
 5. one paragraph explaining what results you expected to see and what results you did see (including the answer to questions #8 of the pre-lab for Lab 4a and post-lab questions #2-8 for Lab 4a on page 67)
 - Lab 5a: Transforming Bacteria with the pARA-R Plasmid
 1. one paragraph explaining the purpose for transformation and steps of transformation (including the answer to questions #1, 2, 5, 6, 11 of the pre-lab for Lab 5a)
 2. one or two paragraphs explaining how you know which cells were transformed (including the answer to questions #4, 8, 9, 10, 12-17 of the pre-lab for Lab 5a; and including diagrams to help show the process and anticipated results)
 3. one paragraph discussing the safety precautions and important lab techniques for this section (including the answer to questions #18-19 of the pre-lab for Lab 5a)
 4. one paragraph discussing your own results (including the answers to the five post-lab questions for Lab 5a on page 84).
 - Conclusion
 1. one paragraph summarizing what you learned from the Amgen labs, what parts you enjoyed most, and what you would like to do if you had more time and equipment for further investigation.