Salk Mobile Science Lab

Day 3 – DNA Technology

Recognizing DNA Patterns

1.The technique for separation by size for DNA (or food color) molecules is called \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

2. Examine the image of gel under the microscope. What is the importance of its structure?

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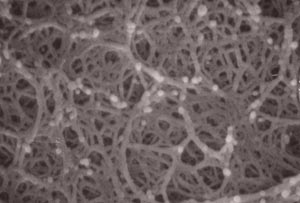
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3. Which of the following DNA fragments would you expect to find at the bottom of the gel after the experiment? Why?

Fragment 1 Fragment 2

ATTGC ATTTAGGGGCACGGGACTACATA

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4. List 2 reasons why a scientist might use gel electrophoresis.

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2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Color code your gel:**

* Draw an arrow outside the “gel” to show which direction electricity is flowing
* Put a star next to the gel to show where the color molecules started
* Draw a circle around the largest color molecule
* Draw a rectangle around the smallest color molecule

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**Analysis**

5. Claim: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the **largest** color molecule.

Evidence: (Using your gel as a reference, provide data that supports your claim)

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Reasoning: (Write a statement that connects your evidence to your claim about which molecule is the largest)

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6. Claim: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the **smallest** color molecule.

Evidence: (How do you know?)

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Reasoning: (What is the significance of your evidence?)

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**Challenge!**

What happened to the green food coloring the experiment?

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If human genomes are 99.9% similar explain how gel electrophoresis can be used to identify individuals and rule out suspects. Use the diagram on the left to support your answer.

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