

# Breakthrough in the Lab: A Scientist's Unexpected Discovery

COMPREHENSION • VOCABULARY • DISCUSSION

## INTERACTIVE ONLINE TEST

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## Reading Passage

Read the passage carefully. Each paragraph is labelled with a letter for easy reference.

- A** Dr. Emily Chen, a renowned biochemist at the University of California, was working late one evening in her laboratory, surrounded by various scientific instruments and samples. She had been studying the effects of a rare plant extract on cancer cells for several months, dedicating countless hours to her research. The extract, sourced from the Amazon rainforest, was known for its vibrant colors and potent medicinal properties that had intrigued scientists for years. As Emily mixed the extract with various compounds, she noticed an unusual reaction. The cancer cells, which had been resistant to traditional treatments, began to shrink significantly under the microscope, an observation that was both surprising and promising. This unexpected finding sparked a wave of excitement in the lab, leading to discussions about the potential implications of her work.
- B** Over the next few weeks, Emily and her team conducted a series of rigorous tests to confirm their results, meticulously documenting each step of their experiments. Each experiment revealed that the plant extract not only inhibited the growth of cancer cells but also promoted healthy cell regeneration, a dual effect that was rare in cancer research. The implications of this discovery were profound. If further research supported her findings, this extract could lead to a new treatment for patients who had exhausted all other options, offering them a glimmer of hope. Emily presented her results at a major scientific conference, where she received accolades from her peers, who were impressed by the potential of her research. This breakthrough could potentially change the landscape of cancer treatment and offer hope to countless individuals facing this devastating disease, making it a significant milestone in the field of medical science.

## Vocabulary Glossary

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Key words and phrases from the passage. Study them before attempting the exercise below.

WORD / PHRASE	DEFINITION	EXAMPLE SENTENCE
<b>renowned</b>	known and admired by many people for special skills or achievements	<i>She is a renowned artist famous for her paintings.</i>
<b>extract</b>	a substance taken from a plant or other matter, usually by a chemical process	<i>The chef used vanilla extract to add flavor to the cake.</i>
<b>potent</b>	having a strong effect or influence	<i>The medicine is very potent, so you need only a small amount.</i>
<b>inhibited</b>	stopped or slowed down	<i>The cold weather inhibited the growth of the plants.</i>
<b>regeneration</b>	when something grows again or is replaced by new growth	<i>The lizard's tail showed regeneration after it was cut off.</i>
<b>accolades</b>	praise or approval	<i>The movie received accolades from critics and audiences alike.</i>
<b>implications</b>	possible effects or results of an action or a decision	<i>The new law has serious implications for workers.</i>
<b>milestone</b>	an important event in the development or history of something	<i>Graduating from university was a major milestone in her life.</i>

### Vocabulary Exercise — Fill in the Blank

Use one word or phrase from the glossary above to complete each sentence. Each item is used only once. Answers are on the final page.

1. The scientist received many \_\_\_\_\_ for her groundbreaking research.
2. The \_\_\_\_\_ of the medicine were stronger than expected.
3. The new treatment was seen as a \_\_\_\_\_ in medical research.
4. The biologist studied the plant \_\_\_\_\_ to understand its effects.
5. She is a \_\_\_\_\_ expert in her field, known by many people.
6. The special cream helps with skin \_\_\_\_\_ after injuries.

## Comprehension Questions

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These questions are different from the online practice test. Choose the best answer (A, B, C, or D). Answers and explanations are on the final page.

### Question 1

**Why was the plant extract considered 'potent'?**

- A. It had strong medicinal properties.
- B. It was very colorful.
- C. It was difficult to obtain.
- D. It was well-known to scientists.

### Question 2

**What unexpected observation did Emily make during her experiments?**

- A. The cancer cells grew rapidly.
- B. The cancer cells shrank significantly.
- C. The equipment malfunctioned.
- D. The colors of the extract changed.

### Question 3

**What was a dual effect of the plant extract?**

- A. Reduced side effects and increased potency.
- B. Inhibited cancer cells and improved equipment.
- C. Shrank cancer cells and promoted healthy cell growth.
- D. Improved lab processes and reduced costs.

### Question 4

**What did Emily do after confirming her results?**

- A. Published a book about her findings.
- B. Presented her results at a conference.
- C. Started a new project.
- D. Quit her job at the university.

### Question 5

#### What is the potential significance of this discovery?

- A. It could replace all current cancer treatments.
- B. It might offer new hope for patients with no other options.
- C. It will immediately cure all types of cancer.
- D. It will only affect a small group of patients.

### Discussion & Writing Prompts

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*Each prompt references a specific detail from the passage above. Use for classroom discussion or a short written response (150–200 words).*

1. Paragraph 1 describes the unexpected shrinking of cancer cells from a rare plant extract. Do you think unexpected discoveries are common in science, and how should they be handled?

2. Emily's presentation at the scientific conference received accolades. In what ways can peer recognition impact a scientist's career and future research opportunities?

3. The dual effect of the plant extract, as mentioned in Paragraph 2, is rare in cancer research. What challenges might scientists face in replicating these results in actual treatments?

# Answer Key

## COMPREHENSION QUESTIONS

Q1 A

Q2 B

Q3 C

Q4 B

Q5 B

## VOCABULARY EXERCISE

FIB1 accolades

FIB2 implications

FIB3 milestone

FIB4 extract

FIB5 renowned

FIB6 regeneration

## Comprehension Question Explanations

Why the correct answer is right — and why each wrong option is incorrect.

### 1. Why was the plant extract considered 'potent'?

✓ A — It had strong medicinal properties. The passage states the extract had 'potent medicinal properties'.

✗ B — It was very colorful. *Its color is mentioned but not as the reason for potency.*

✗ C — It was difficult to obtain. *The difficulty of obtaining it is not discussed in relation to potency.*

✗ D — It was well-known to scientists. *Being well-known does not relate to its potency.*

### 2. What unexpected observation did Emily make during her experiments?

✓ B — The cancer cells shrank significantly. The passage notes that the cancer cells began to shrink significantly.

✗ A — The cancer cells grew rapidly. *The cancer cells did not grow; they shrank.*

✗ C — The equipment malfunctioned. *There is no mention of equipment malfunction.*

✗ D — The colors of the extract changed. *The passage does not mention a change in the color of the extract.*

### 3. What was a dual effect of the plant extract?

✓ C — Shrank cancer cells and promoted healthy cell growth. The passage states the extract inhibited cancer growth and promoted healthy cell regeneration.

✗ A — Reduced side effects and increased potency. *Side effects are not discussed.*

✗ B — Inhibited cancer cells and improved equipment. *Improvement to equipment is not mentioned.*

✗ D — Improved lab processes and reduced costs. *Cost and lab processes are not relevant here.*

### 4. What did Emily do after confirming her results?

✓ B — Presented her results at a conference. Emily presented her results at a major scientific conference.

✗ A — Published a book about her findings. *There is no mention of her publishing a book.*

✗ C — Started a new project. *The passage does not mention starting a new project.*

✗ D — Quit her job at the university. *She did not quit her job; she presented her findings.*

### 5. What is the potential significance of this discovery?

✓ **B — It might offer new hope for patients with no other options.**

The passage suggests it could provide hope for patients who have exhausted other options.

✗ **A — It could replace all current cancer treatments.**

*The passage does not claim it will replace all treatments.*

✗ **C — It will immediately cure all types of cancer.**

*Immediate cures for all cancer types are not claimed.*

✗ **D — It will only affect a small group of patients.**

*The passage does not limit its effect to a small group.*

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