



# Exploring Gene Therapy - Answer Key



Log on to: http://gslc.genetics.utah.edu/units/genetherapy and explore this module to find the answers to the questions below.

Hint: the Search feature on this website may or may not help you find what you are looking for; it is best to go through the module to find the answers.

#### Questions:

1. What is gene therapy?

Adding a normally functioning copy of a mutated gene to help affected cells, tissues and organs work properly.

- 2. What are the five criteria for a gene therapy candidate disease?
  - The condition must result from mutations in one or more genes.
  - You must know which gene is involved and have an available DNA copy of that gene.
  - You must know the biology of the disorder which tissue is affected, the role of the protein encoded by the gene, and how mutations in the gene affect the protein product.
  - Adding a normal copy of the gene must fix the problem.
  - 5. It must be possible to deliver the gene to cells of the affected tissue.
- 3. Case Study; Is cystic fibrosis a good candidate for gene therapy? Why or why not?

Yes, cystic fibrosis meets all of the criteria above.

4. What are the hallmarks of successful gene delivery in gene therapy trials?

Targeting the right cells, activating the gene, integrating the gene into the cells, avoiding harmful side effects.

5. Explain the in vivo technique of delivering genes to a patient's cells.

The vector carrying the gene is injected directly into the body. The in vivo approach happens inside the body.

Explain the ex vivo technique of delivering genes to a patient's cells.

Cells from the affected tissue are isolated and cultured in a Petri dish. The vector carrying the gene is introduced to the cells in the Petri dish. The ex vivo approach happens outside the body.

## **Part 1 Exploring Gene Therapy Answers**

**Michael Rajnik** 

Part 1	Exp	loring	Gene	Therapy	<b>Answers:</b>
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#### Reviewing Part 1 Exploring Gene Therapy Answers: Unlocking the Spellbinding Force of Linguistics

In a fast-paced world fueled by information and interconnectivity, the spellbinding force of linguistics has acquired newfound prominence. Its capacity to evoke emotions, stimulate contemplation, and stimulate metamorphosis is actually astonishing. Within the pages of "Part 1 Exploring Gene Therapy Answers," an enthralling opus penned by a very acclaimed wordsmith, readers attempt an immersive expedition to unravel the intricate significance of language and its indelible imprint on our lives. Throughout this assessment, we shall delve in to the book is central motifs, appraise its distinctive narrative style, and gauge its overarching influence on the minds of its readers.

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