Regulation of the Lactase Gene



About This Worksheet

This worksheet complements the Click and Learn "Regulation of the Lactase Gene" developed in conjunction with the 2011 HHMI Holiday Lectures on Science "Bones, Stones, and Genes: The Origin of Modern Humans."

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Key Concepts

- Eukaryotic gene expression is regulated at the levels of transcription, RNA processing, translation, and post-translation.
- Proteins called transcription factors bind to DNA and control transcription. Different types of transcription factors can increase or decrease transcription.
- Mutations in DNA regions that control gene expression can alter the way genes are expressed.
- Infants have high lactase levels so that they can digest their mothers' milk, but lactase gene expression is turned off after wearing.
- Lactase persistence is the trait that allows adults to continue to digest milk. It results from a mutation in an enhancer region
 of the lactase gene.

Instructions

- 1. Go to BioInteractive.org.
- In the menu bar under the masthead, mouse over Topics →Evolution→Interactive.
- 3. Scroll down the page and click on "Regulation of the Lactase Gene."
- Proceed through the slides, watch the embedded video clips, and answer the following questions in the space provided.

Questions

- 1. What is the difference between lactose tolerance and lactose intolerance? Be specific.
- 2. Why is lactose tolerance also called lactase persistence?
- 3. In which cells or tissues is lactase produced and what is its role?
- 4. What normally happens to the levels of lactase produced throughout a person's lifetime?
- 5. In general, why is it important for a cell to regulate protein production?

Hhmi Answers To Lactase Regulation

R Sandford

Hhmi Answers To Lactase Regulation:

Adopting the Tune of Phrase: An Emotional Symphony within Hhmi Answers To Lactase Regulation

In a world taken by displays and the ceaseless chatter of immediate transmission, the melodic splendor and emotional symphony developed by the published word frequently diminish in to the background, eclipsed by the persistent noise and interruptions that permeate our lives. However, located within the pages of **Hhmi Answers To Lactase Regulation** a wonderful fictional treasure overflowing with natural feelings, lies an immersive symphony waiting to be embraced. Constructed by a wonderful composer of language, that fascinating masterpiece conducts visitors on an emotional journey, well unraveling the hidden tunes and profound affect resonating within each cautiously crafted phrase. Within the depths of the touching examination, we will examine the book is central harmonies, analyze its enthralling publishing design, and submit ourselves to the profound resonance that echoes in the depths of readers souls.

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Table of Contents Hhmi Answers To Lactase Regulation

- 1. Understanding the eBook Hhmi Answers To Lactase Regulation
 - The Rise of Digital Reading Hhmi Answers To Lactase Regulation
 - Advantages of eBooks Over Traditional Books
- 2. Identifying Hhmi Answers To Lactase Regulation
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
- 3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Hhmi Answers To Lactase Regulation
 - User-Friendly Interface
- 4. Exploring eBook Recommendations from Hhmi Answers To Lactase Regulation

- Personalized Recommendations
- Hhmi Answers To Lactase Regulation User Reviews and Ratings
- Hhmi Answers To Lactase Regulation and Bestseller Lists
- 5. Accessing Hhmi Answers To Lactase Regulation Free and Paid eBooks
 - Hhmi Answers To Lactase Regulation Public Domain eBooks
 - Hhmi Answers To Lactase Regulation eBook Subscription Services
 - Hhmi Answers To Lactase Regulation Budget-Friendly Options
- 6. Navigating Hhmi Answers To Lactase Regulation eBook Formats
 - o ePub, PDF, MOBI, and More
 - Hhmi Answers To Lactase Regulation Compatibility with Devices
 - Hhmi Answers To Lactase Regulation Enhanced eBook Features
- 7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Hhmi Answers To Lactase Regulation
 - Highlighting and Note-Taking Hhmi Answers To Lactase Regulation
 - Interactive Elements Hhmi Answers To Lactase Regulation
- 8. Staying Engaged with Hhmi Answers To Lactase Regulation
 - o Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Hhmi Answers To Lactase Regulation
- 9. Balancing eBooks and Physical Books Hhmi Answers To Lactase Regulation
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Hhmi Answers To Lactase Regulation
- 10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
- 11. Cultivating a Reading Routine Hhmi Answers To Lactase Regulation
 - Setting Reading Goals Hhmi Answers To Lactase Regulation
 - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Hhmi Answers To Lactase Regulation

- Fact-Checking eBook Content of Hhmi Answers To Lactase Regulation
- Distinguishing Credible Sources
- 13. Promoting Lifelong Learning
 - Utilizing eBooks for Skill Development
 - Exploring Educational eBooks
- 14. Embracing eBook Trends
 - Integration of Multimedia Elements
 - Interactive and Gamified eBooks

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