

Guided Inquiry • Skills Lab

Chapter 16 Lab

**Amino Acid Sequences:
Indicators of Evolution****Problem**

How can you use proteins to determine how closely organisms are related?

Introduction

Biologists have many ways to study evolution. They can use fossils to learn about ancient species. They can compare the anatomy of modern species. They can observe the order in which cells develop in embryos. All these clues reflect what took place over time at the molecular level. DNA and proteins, the genes and the products of genes, provide powerful evidence for descent with modification.

As DNA changes over time, the proteins that are produced by the DNA change too. The result is that many organisms have similar, but not identical, versions of a given protein. Differences among these homologous proteins provide clues to evolution.

In Part A of this lab, you will compare amino acid sequences of hemoglobin from eight mammals. In Part B, you will analyze data about sequences in a second protein—cytochrome c. In Part B, the organisms will be more varied.

Skills Focus

Analyze Data, Graph, Draw Conclusions

**Build Vocabulary**

Term	Definition
compare	To examine two or more things in order to discover ways in which they are alike, or <i>comparable</i> , and ways in which they are different
sequence	The order in which things are arranged, actions are carried out, or events happen
related	Connected by a common, or shared, origin; descended from a common ancestor
identical	Exactly the same or alike in every way

Big Idea

Molecular biology provides evidence for evolution.

Skills Objectives

Students will be able to:

- analyze amino acid sequences of proteins.
- infer the relatedness of species from differences in proteins.

Class Time

40 minutes

Group Size

Individuals

Build Vocabulary

Students will have a more successful lab experience if they understand these terms.

Lab Amino Acid Sequences Indicators Of Evolution

Rosina Ehmann



Lab Amino Acid Sequences Indicators Of Evolution:

This book delves into Lab Amino Acid Sequences Indicators Of Evolution. Lab Amino Acid Sequences Indicators Of Evolution is a crucial topic that needs to be grasped by everyone, from students and scholars to the general public. The book will furnish comprehensive and in-depth insights into Lab Amino Acid Sequences Indicators Of Evolution, encompassing both the fundamentals and more intricate discussions.

1. The book is structured into several chapters, namely:
 - Chapter 1: Introduction to Lab Amino Acid Sequences Indicators Of Evolution
 - Chapter 2: Essential Elements of Lab Amino Acid Sequences Indicators Of Evolution
 - Chapter 3: Lab Amino Acid Sequences Indicators Of Evolution in Everyday Life
 - Chapter 4: Lab Amino Acid Sequences Indicators Of Evolution in Specific Contexts
 - Chapter 5: Conclusion
 2. In chapter 1, the author will provide an overview of Lab Amino Acid Sequences Indicators Of Evolution. The first chapter will explore what Lab Amino Acid Sequences Indicators Of Evolution is, why Lab Amino Acid Sequences Indicators Of Evolution is vital, and how to effectively learn about Lab Amino Acid Sequences Indicators Of Evolution.
 3. In chapter 2, this book will delve into the foundational concepts of Lab Amino Acid Sequences Indicators Of Evolution. The second chapter will elucidate the essential principles that need to be understood to grasp Lab Amino Acid Sequences Indicators Of Evolution in its entirety.
 4. In chapter 3, this book will examine the practical applications of Lab Amino Acid Sequences Indicators Of Evolution in daily life. This chapter will showcase real-world examples of how Lab Amino Acid Sequences Indicators Of Evolution can be effectively utilized in everyday scenarios.
 5. In chapter 4, the author will scrutinize the relevance of Lab Amino Acid Sequences Indicators Of Evolution in specific contexts. This chapter will explore how Lab Amino Acid Sequences Indicators Of Evolution is applied in specialized fields, such as education, business, and technology.
 6. In chapter 5, the author will draw a conclusion about Lab Amino Acid Sequences Indicators Of Evolution. This chapter will summarize the key points that have been discussed throughout the book.
- The book is crafted in an easy-to-understand language and is complemented by engaging illustrations. It is highly recommended for anyone seeking to gain a comprehensive understanding of Lab Amino Acid Sequences Indicators Of Evolution.

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Lab Amino Acid Sequences Indicators Of Evolution Introduction

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