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How Cells Work

4.1. INTRODUCTION

So far you have learned something about how cells are constructed and how enzymes function. But a cell is much more than a bag filled with lipids, amino acids, sugars, enzymes, and nucleic acids. The cell must control how these components are made and interact with each other. In this chapter we will explore some examples of metabolic regulation. It is this ability to coordinate a wide variety of chemical reactions that makes a cell a cell.

The key to metabolic regulation is the flow and control of information. The advent of computers has led many to speak of the "Information Age." There are many analogies between human society's need to use and exchange information and a cell's need to use and exchange information between subcellular components. Human society depends primarily on electronic signals for information storage, processing, and transmission; cells use chemical signals for the same purposes. Molecular biology is primarily the study of information flow and control.

4.2. THE CENTRAL DOGMA

Fortunately, almost all living systems have the same core approach to the storage, expression, and utilization of information. Information is stored in the DNA molecule