

## Chapter 7 Membrane Structure and Function

### Overview: Life at the Edge

- The plasma membrane is the boundary that separates the living cell from its surroundings.
- The plasma membrane exhibits **selective permeability**, allowing some substances to cross it more easily than others

### Concept 7.1: Cellular membranes are fluid mosaics of lipids and proteins.

- Phospholipids are the most abundant lipid in the plasma membrane
- Phospholipids are **amphipathic molecules**, containing hydrophobic and hydrophilic regions
- The **fluid mosaic model** states that a membrane is a fluid structure with a "mosaic" of various proteins embedded in it

If a molecule is hydrophobic, then it must also love lipids, since oil and water don't mix. Therefore, we can refer to a hydrophobic molecule as **lipophilic**.

Likewise, if a molecule is hydrophilic and loves water, then it must conversely hate lipids, and we can refer to it as **lipophobic**.

Phospholipids arrange themselves in such a way so as to protect the water-hating (hydrophobic) portion from the aqueous environment of the cell interior and exterior.

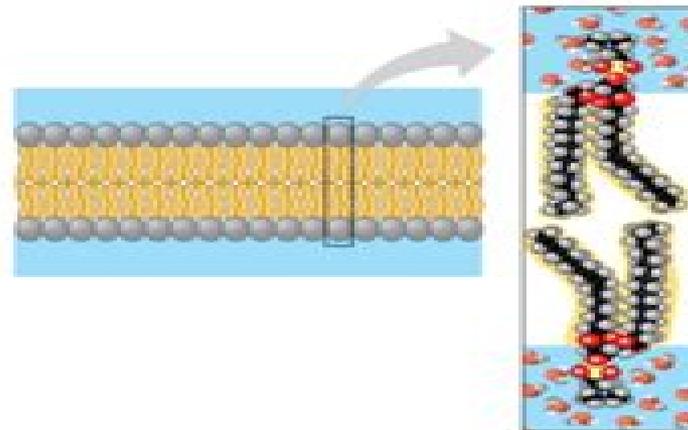


Figure 7.2 Phospholipid bilayer (cross section).

Remember, we know that based on the structure of a phospholipid, the head of the lipid molecule is polar. This is due to the presence of a positively-charged choline group and a negatively-charged phosphate group, both in the head of the molecule. This is what makes the head love water, another polar molecule.

The tail, meanwhile, is non-polar and this is why it hates water.

- Freeze-fracture studies of the plasma membrane supported the fluid mosaic model

# Chapter 7 Membrane Structure And Function

**Jianjun Gao**



## **Chapter 7 Membrane Structure And Function:**

The book delves into Chapter 7 Membrane Structure And Function. Chapter 7 Membrane Structure And Function is an essential topic that must be grasped by everyone, ranging from students and scholars to the general public. This book will furnish comprehensive and in-depth insights into Chapter 7 Membrane Structure And Function, encompassing both the fundamentals and more intricate discussions.

1. The book is structured into several chapters, namely:
    - Chapter 1: Introduction to Chapter 7 Membrane Structure And Function
    - Chapter 2: Essential Elements of Chapter 7 Membrane Structure And Function
    - Chapter 3: Chapter 7 Membrane Structure And Function in Everyday Life
    - Chapter 4: Chapter 7 Membrane Structure And Function in Specific Contexts
    - Chapter 5: Conclusion
  2. In chapter 1, this book will provide an overview of Chapter 7 Membrane Structure And Function. This chapter will explore what Chapter 7 Membrane Structure And Function is, why Chapter 7 Membrane Structure And Function is vital, and how to effectively learn about Chapter 7 Membrane Structure And Function.
  3. In chapter 2, the author will delve into the foundational concepts of Chapter 7 Membrane Structure And Function. This chapter will elucidate the essential principles that must be understood to grasp Chapter 7 Membrane Structure And Function in its entirety.
  4. In chapter 3, the author will examine the practical applications of Chapter 7 Membrane Structure And Function in daily life. The third chapter will showcase real-world examples of how Chapter 7 Membrane Structure And Function can be effectively utilized in everyday scenarios.
  5. In chapter 4, the author will scrutinize the relevance of Chapter 7 Membrane Structure And Function in specific contexts. This chapter will explore how Chapter 7 Membrane Structure And Function is applied in specialized fields, such as education, business, and technology.
  6. In chapter 5, this book will draw a conclusion about Chapter 7 Membrane Structure And Function. This chapter will summarize the key points that have been discussed throughout the book.
- This 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 Chapter 7 Membrane Structure And Function.

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