

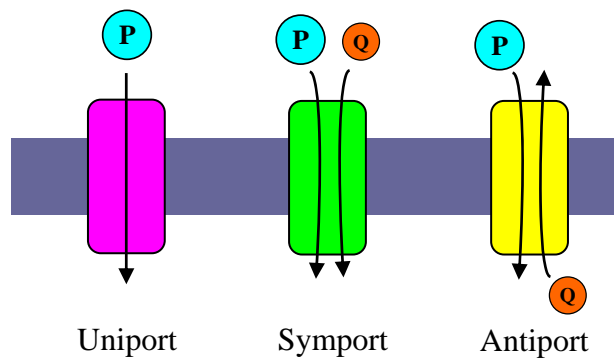


## CHAPTER 3: MOVEMENT OF SUBSTANCES ACROSS THE PLASMA MEMBRANE



### Protein Pumps and Types of Carrier Proteins

1. In active transport, carrier proteins are also called **pumps** or **protein pumps**.
2. There are **three types** of **carrier proteins** involved in active transport.
  - **Uniport** – one molecule is moved at a time
  - **Symport** – two molecules are moved in the same direction
  - **Antiport** – two molecules are moved in opposite directions



*The three types of carrier proteins (P and Q = solute molecules)*