

## **CHAPTER 11. STRUCTURE AND FUNCTIONS OF TRANSPORTERS-I**

Transporters can usefully be classified into superfamilies, whose members have considerable similarity of sequence and might therefore be expected to share structural and functional properties.

There are two very broad categories of transporters: carriers and channels.

Carriers bind their substrates with high stereospecificity, catalyze transport at rates well below the limits of free diffusion, and are saturable in the same sense as are enzymes: there is some substrate concentration above which further increases will not produce a greater rate of activity.

Channels generally allow transmembrane movement at rates several orders of magnitude greater than those typical of carriers, rates approaching the limit of unhindered diffusion.

### **Types of cell membrane transport systems**

- Uniport (a single substance, moves in a single direction)
- Symport (two substances, moves in the same direction)
- Antiport (two substances, moves in opposite directions)

### **The Glucose Transporter of Erythrocytes Mediates Passive Transport**

The GLUT transporters, such as GLUT1 of erythrocytes, carry glucose into cells by facilitated diffusion.

These transporters are uniporters, carrying only one substrate.