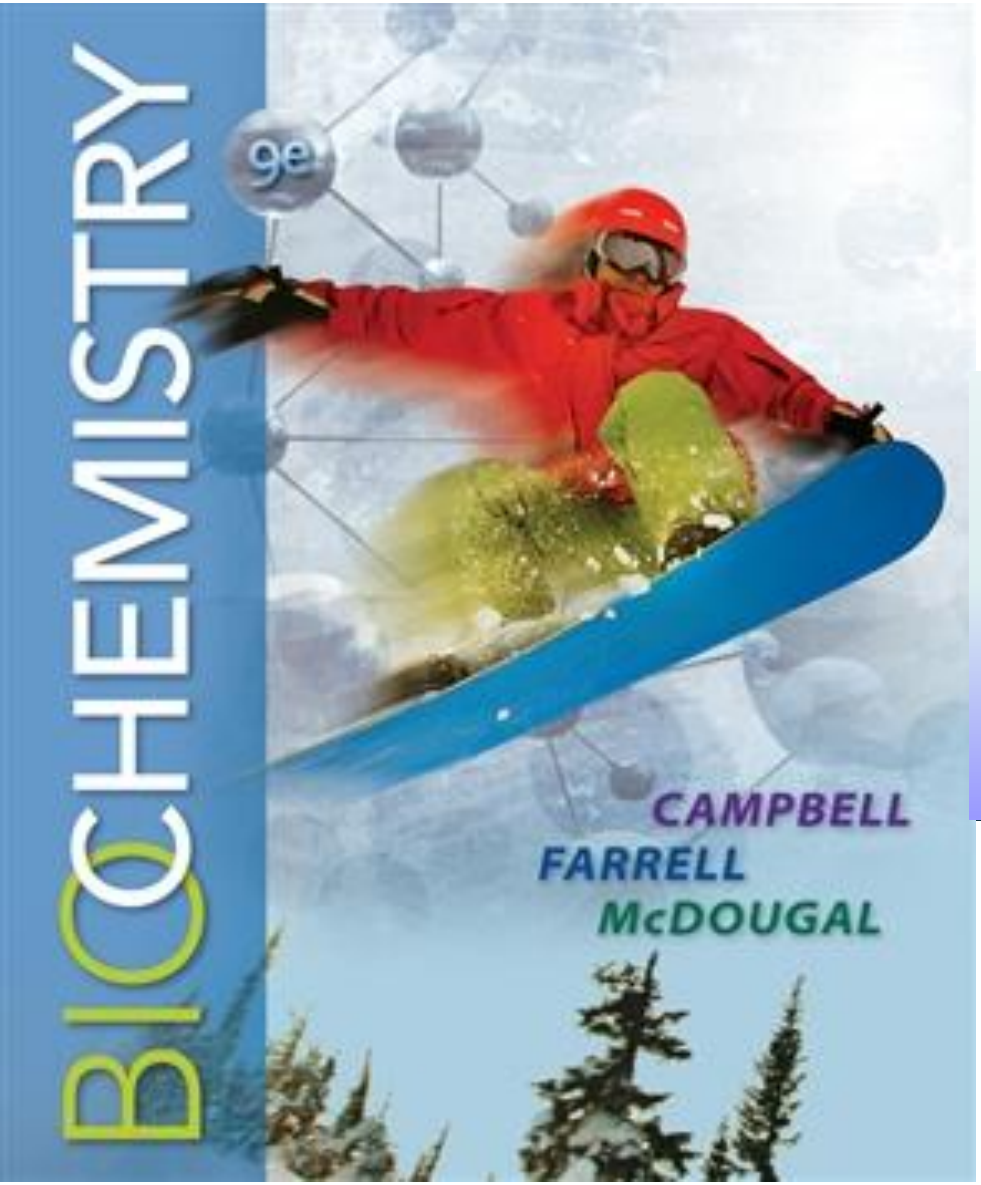


Chapter 17
Glycolysis

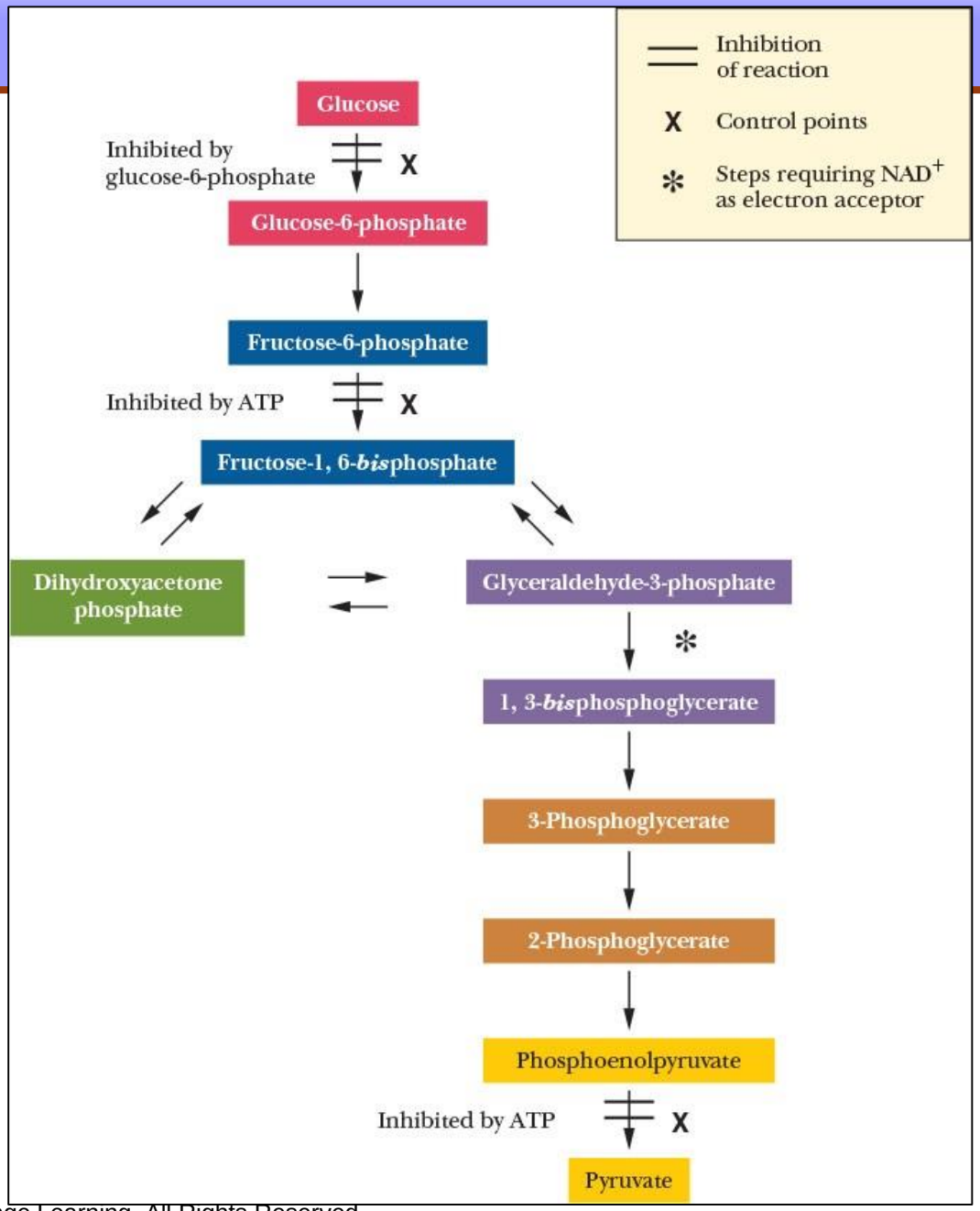
Energy Production and Control of Glycolysis

Energy Production in Glycolysis

- Glycolysis is exergonic overall
  - $\Delta G°'$ from glucose to 2 pyruvates equal to -74.0 kJ/mol
- Energy released in exergonic phases drives endergonic reactions
  - Phosphorylation involved as two moles of ADP converted to ATP
    - Substrate-level phosphorylation
- Energy released by glycolysis serves no purpose except for production of ATP as energy source

Control Points in Glycolysis

- 3 control points in glycolysis
  - Irreversible steps
  - Step 3 the main control point
- More on regulation in next chapter



Control of Liver Pyruvate Kinase

- Inhibited by ATP and alanine
  - Alanine a precursor of pyruvate
- Isozymes in different tissues
  - M in muscle; L in liver; A in others

Control of Liver Pyruvate Kinase

- Low blood sugar regulation
  - PK phosphorylated when [glucose] low
  - Less active
  - Less substrate for pathway