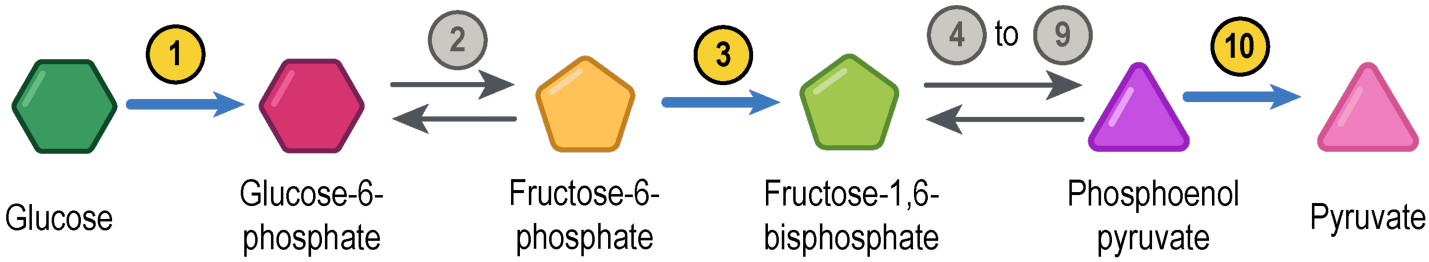
CONCEPT: GLYCOLYSIS REGULATION

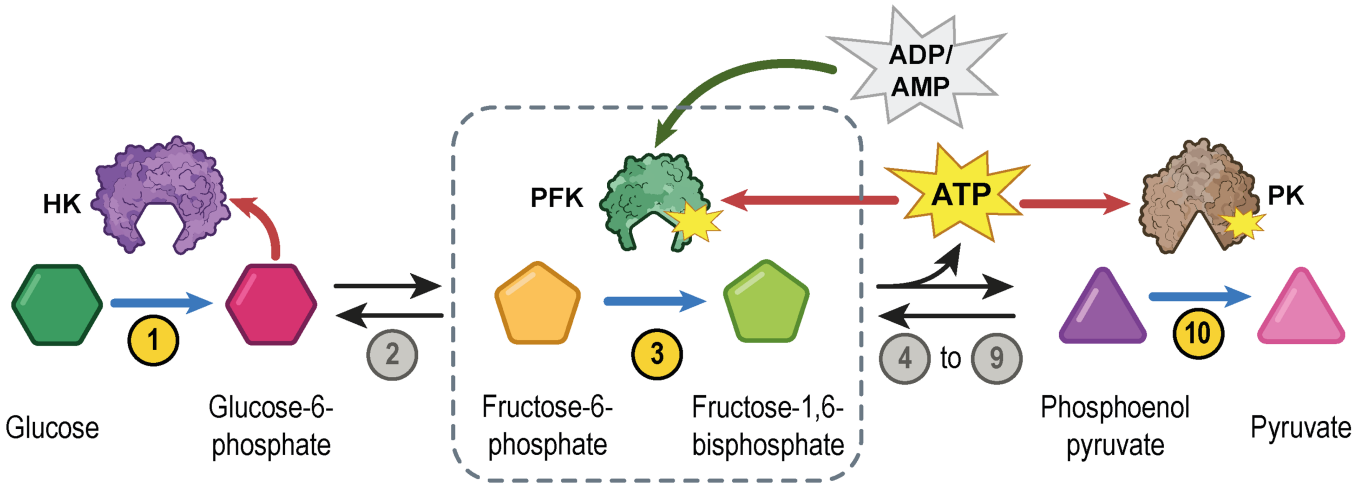
Introduction to Glycolysis Regulation

- Cells regulate biochemical pathways to _____ the production of essential molecules.
- Glycolysis regulation enables cells to control the concentration of ATP and _____ in the cell.
    - □ Speeds up when there is _____ for ATP and slows down when there is _____ ATP inside the cell.
    - □ The irreversible reactions ____, ____, and ____ are allosterically regulated.



Glycolysis Regulation Mechanism

- Enzymes in reactions 1, 3, and 10 are allosteric enzymes and are regulated through _____ control.
- **Reaction 3:** Main control point in the pathway regulation.
    - □ **Phosphofructokinase (PFK):** _____ by ATP.
    - □ Activated by ADP/AMP.
- **Reaction 10:** Pyruvate kinase (PK) is also inhibited by _____.
- **Reaction 1:** _____ is inhibited by its product, glucose-6-phosphate.



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EXAMPLE: Which of the following enzymes serves as the main regulatory control point of glycolysis?

a) Hexokinase

b) Pyruvate kinase

c) Phosphofructokinase

d) Glucose-6-phosphate isomerase

PRACTICE: Which of the following molecules would be expected to decrease in concentration when the rate of glycolysis is reduced?

a) ATP.

b) Citrate.

c) Pyruvate.

d) None of the above.

e) All of the above.