

Activity 50: ATP Production

Learning Objective

Count the number of ATP produced during glucose catabolism

Estimated Completion Time 30 Minutes

Instructor Information

This activity assumes that the oxidative catabolism of glucose has been discussed. The answer key assumes the nucleotide output of 2.5 ATP per 1 NADH and 1.5 ATP per 1 FADH₂. Some textbooks offer different values.

ANSWERS TO QUESTIONS

1. 7 ATP
2. 5 ATP
3. One molecule of glucose provides 2 acetyl CoA. Each acetyl CoA produces a total of 10 ATP in one turn of the citric acid cycle, for a total of 20 ATP.
4. Combining answers for questions 1–3, 32 ATP.

Activity 50: Skill Development

1. a. 1.5 ATP b. 32 ATP c. 2.5 ATP d. 12 ATP