

Steps of Aerobic Respiration

The complete process of aerobic respiration occurs in four different stages:

Glycolysis

It is the primary step of aerobic respiration is glycolysis and takes place within the cytosol of the cell. During the glycolysis process, the glucose molecules are splitting and separated into two ATP and two NADH molecules, which are later used in the process of aerobic respiration.

Formation of Acetyl Coenzyme A

The second step in aerobic respiration is the formation of acetyl coenzyme A. In this process, pyruvate is oxidized in the mitochondria and 2-carbon acetyl group is produced. The newly produced 2-carbon acetyl group binds with coenzyme A, producing acetyl coenzyme A.

Citric Acid Cycle

The third step in aerobic respiration is the citric acid cycle, which is also called the Krebs cycle. In this stage of Aerobic respiration, the oxaloacetate combines with the acetyl-coenzyme A and produces citric acid. The citric acid cycle undergoes a series of reactions and produces 2 molecules of carbon dioxide, 1 molecule of ATP, and reduced forms of NADH and FADH.

Electron Transport Chain

This is the last step in aerobic respiration. In this phase, the large amounts of ATP molecules are produced by transferring the electrons from NADH and FADH. A single molecule of glucose creates a total of 34 ATP molecules.