



produce a diploid zygote during fertilisation. In multicellular eukaryotes, the zygote divides into stem cells, which can then grow and differentiate into specialised cells that perform specific functions and assemble into tissues, organs, and biological systems. Myocytes, adipocytes, blood cells, neurons, hepatocytes, osteocytes, macrophages, and other cell types exist in humans.

Single-celled eukaryotes exist. A cell is a complete organism capable of completing all of the basic duties that different systems in a multicellular organism execute. Protists are examples of these single-celled organisms.

Organelles play particular roles in eukaryotes, such as energy production, photosynthesis, and membrane creation. The majority are membrane-bound structures that host specialised biochemical reactions. The nucleus is one of the most significant eukaryotic organelles since it houses a cell's DNA. Mitochondria and chloroplasts are two more significant organelles that play important roles in energy conversion and are assumed to have evolved from primitive single-celled organisms.

Genetic information is stored in genes in both eukaryotes and prokaryotes. ATP is their primary source of metabolic energy. They both have ribosomes, which help with protein synthesis.