

# Biology - db 1

[Science](#), [Biology](#)



Biology - DB Part A cell being the fundamental unit of life can be differentiated into eukaryotic and prokaryotic cells. The structure and functionality of a cell are made possible by the basic characteristics that form the components of the cell. Eukaryotic cell function at their best through an interplay of action of the organelles that control the functionality of the cell. Nevertheless, despite the absence of the organelles in the prokaryotic cells, the cells are adapted to their functionality at their best. In this regard, a cell can be compared to an organizational set-up equipped with tools and appliances that enables smooth operation and achievement of the objectives of the organization (Kietrys, Szopa, & Bąkowska-Zywicka, 2009).

In an analogy comparison of an organizational operation system to the organelles, a chloroplast could be compared to a solar panel. This is because the function of the chloroplast in a plant cell is to trap the solar energy for photosynthesis thus contributes to the manufacture of glucose for the sell. In the same nature, a solar panel traps the suns energy that is converted to electrical energy for provision of power for the functions in an organization. Analogical representation of a mitochondrion in an organization is a furnace. Just as a furnace is responsible for the boosting of the backing energy, a mitochondrion is responsible for the production of energy through the action of cellular respiration. A cell membrane can be compared to the security system in an organization that helps in controlling the entry of substances in an out of the cell. A vacuole could be like a store room in an organization that helps in the storage of surplus.

Part 2

Energy is the utmost requirement for the functionality of an organism. Unlike plant cells that can manufacture their energy through the process of photosynthesis, animal cells can only acquire their energy supplies through the consumption of other energy sources. The core benefit that would accrue in case animals can manufacture their energy would be a reduction in the depletion of the ecosystem by the human in drive for acquisition of energy. Humans would not be able to cut down trees or practice agricultural activities that lead to soil erosion since they will not need fuel or crops to acquire energy (Milius, 2010).

Genetic engineering has been at the cornerstone in ensuring that there is an increase in productive efficiency for both plants and animals. Nevertheless, application of genetic engineering to enable the animal cells to manufacture their energy has posed a problem since it would require the animal cells to assume a replica of plant cells in structure and functionality. The animal cells would have to possess a regular and fixed shape with a cell wall in addition to the cell membrane. Additionally, the animal cell would have a large central vacuole to be able to apply the principle of energy manufacturing effectively.

#### References

Kietrys, A. M., Szopa, A., & Bąkowska-Zywicka, K. (2009). Structure and function of intersubunit bridges in procaryotic ribosome. *Biotechnologia*, 48-58.

Milius, S. (2010). Green sea slug is part animal, part plant. Retrieved from <http://www.wired.com/wiredscience/2010/01/green-sea-slug>