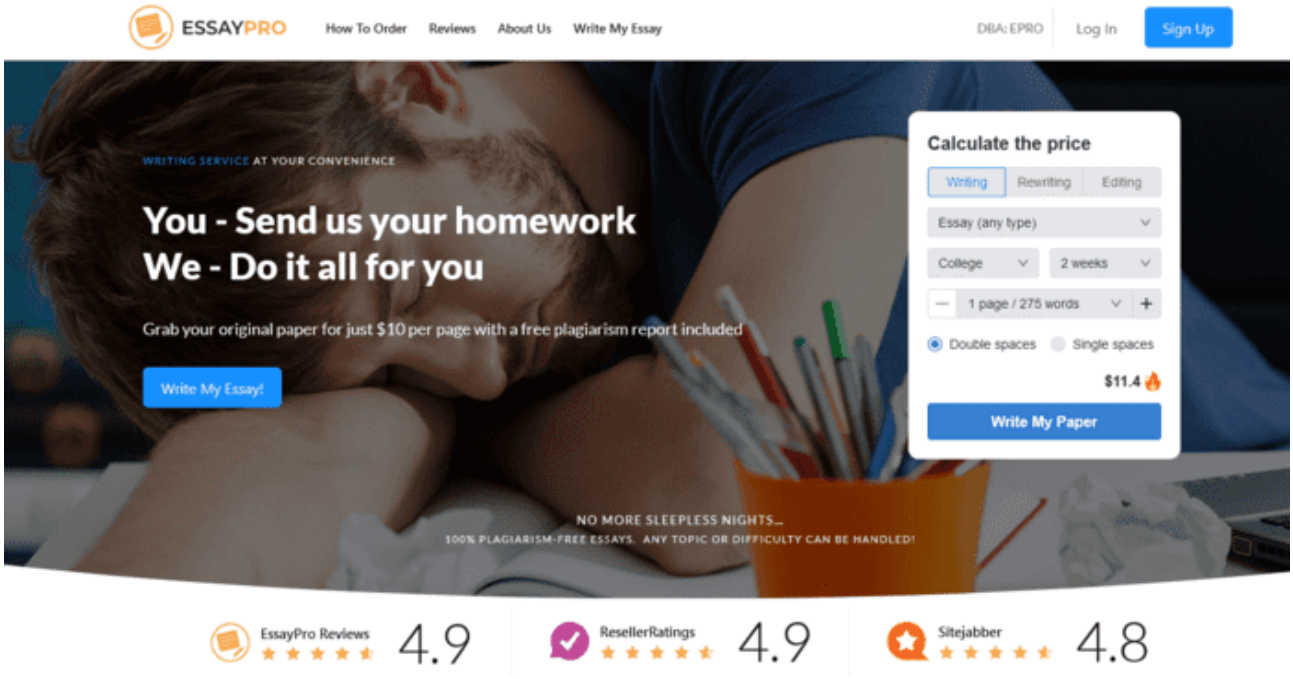
Division and Fusion in Mitochondria Essay



LINK => http://787787.com/writing-service?374597013

Division and Fusion in Mitochondria

Mitochondria are essential organelles in many cells. Each component of mitochondria have distinct roles that they must partake in for the sake of the cell's survival. Mitochondria have their own genetic system that encodes directions for the mitochondria's different processes. Oxidative phosphorylation, an activity that is necessary to the cell takes place within the mitochondria, along with electron transport. Mitochondria also take part in processes that benefit themselves, including fusion and division (Hales, 2010). Therefore, the processes of mitochondria are important not only to the mitochondria itself, but also to the whole cell overall.

Cellular Biology Knowledge

In order to understand this material, previous knowledge from a cellular biology class is important to have. Prior classes and readings explained the structure and functions of mitochondria. The structure of mitochondria shows that it has two membranes; an outer membrane that is permeable to ions and small molecules because of porins, and an inner membrane, impermeable to ions and small molecules, that forms in cristae in order to increase surface area. Mitochondria house critical functions of the cell, including ATP synthesis through oxidative phosphorylation. An understanding of the composition, membranes, and permeability of this organelle is essential in comprehending readings on

the fusion and division of networks in mitochondria and building upon previously studied information. It is necessary to understand key concepts about mitochondria in order to grasp the overall view of this organelle.
Mitochondrial Networks
In the early 1930s, it was first discovered that mitochondria form interconnected networks of tubules that a...

... middle of paper ...

...ions and divisions of mitochondria (Hales, 2010). By understanding what causes the disease, further research can be done to figure out how to treat the specific mitochondria and neurons involved. Therefore, mitochondrial fusion and division is necessary in discovering effective medical treatments that have not yet become available. These mitochondrial treatments can then be dispensed and used to help all people affected by diseases caused by mitochondrial mutations.

References
Hales, K. G. (2010). Mitochondrial Fusion and Division. Nature Education. 3(9):12
Cooper, G. M., Hausman, R. E. (2013). Bioenergetics and Metabolism. The Cell: A Molecular
Approach (6th ed.). (421-457). Sunderland, MA: Sinauer Associates, Inc.
Youle, R. J., van der Bliek, A. M. (2012). Mitochondrial Fission, Fusion, and Stress. Science.
337(6098), 1062-1065. [DOI:10.1126/science.1219855].

- Mass Media Health Awareness Campaigns In Kenya