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Effectiveness of Photosynthesis Under Red Light

**Introduction**

Photosynthesis is the process by which plants create sugars by using energy from solar radiation. This process occurs in organelles called chloroplasts. These membrane-bound organelles contain membranous sacs called thylakoids which are arranged in stacks called granum.

The proteins that convert light energy into energy that is usable by the cell are embedded in the membranes of the thylakoids. The process begins in photosystem II, where the light energy separates the hydrogen and oxygen atoms of water molecules, which results in one oxygen atom, two protons, and two electrons for each water molecule. The protons are transported into the inner space of the thylakoid, called the lumen. The electrons, are used to transport protons from the stroma, the space outside of the thylakoid, into the lumen. In the process their energy is reduced. Next, the electrons enter photosystem I, which uses further light energy to excite the electrons which are transported to NADP reductase which converts NADP+, H+, and the two electrons, into NADPH. Finally, ATP synthase, uses the proton gradient created in the previous steps to generate ATP from ADP and Pi­.

Experimental Design and Methods

Results

Discussion

# Works Cited

Appendix