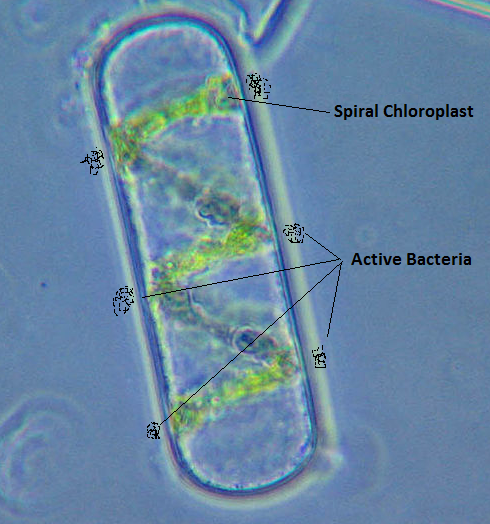
**CHLOROPLAST EVIDENCE**

**Evidence 2**

A scientist named T. G. Engelmann wanted to see if oxygen was produced in a cell and where. He knew of a bacteria called *Pseudomonas* is very active in the presence of oxygen and moves toward oxygen when it is present.

**Method:** He placed plant cells from a plant called *Spirogyra* on a microscope slide. This plant has a spiral shaped chloroplast. He put bacteria on the slide with the plant cells and exposed it to light.

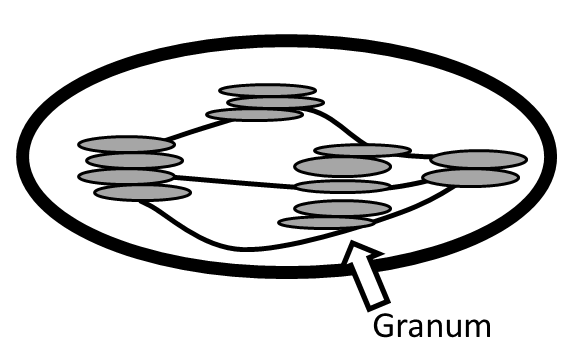


**Findings:** When Engelmann shined light on the plant cell, he found that the amount of active bacteria near the chloroplast increased. The bacteria, which are attracted to oxygen, grouped around the edge of the cell where the chloroplast was located and were very active.

**Evidence 5**

**What makes chloroplasts work?**

Look at the diagram below. Chloroplasts have smaller structures called grana inside them. In normal chloroplasts, the grana are stacks of little disks with chloroplasts in them. Chlorophyll is a green chemical found in the grana. Scientists are interested in whether the grana influence how much glucose is produced by chloroplasts.



We studied the structure of chloroplasts from barley. Sometimes plants have mutated chloroplasts. Mutated chloroplasts do not have normal grana. We looked at barley plants with normal chloroplasts, mutated chloroplasts, and very mutated chloroplasts by looking through very powerful microscopes. You can see what we saw below. We also measured how much glucose is produced in each kind of barley plant.

|  |  |  |  |
| --- | --- | --- | --- |
| **Plant type** | **What the chloroplasts look like through a *very* powerful microscope** | **Leaf color** | **How much glucose was produced in the leaves?** |
| Barley plants with normal chloroplasts |  | dark green | Large amounts of glucose |
| Barley plants with mutated chloroplasts |  | pale green | Small amounts of glucose |
| Barley plants with very mutated chloroplasts |  | yellow | No glucose |