

Photosynthesis Microscopic relatives

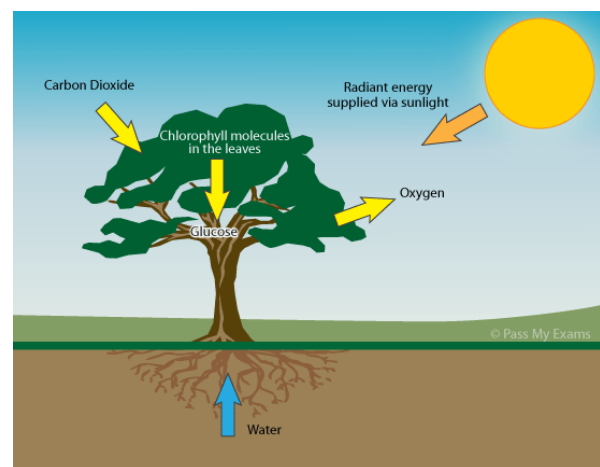
Photosynthesis is the process by which plants, some bacteria and some Protista's use the energy from sunlight to produce glucose from carbon dioxide and water. This glucose can be converted into pyruvate which releases adenosine triphosphate (ATP) by cellular respiration. Oxygen is also made.

An ancient signalling pathway inherited from bacteria has an impacts on plant growth and development, a new study has found. Chloroplasts, cell organelles responsible for plant photosynthesis, are the key component of this signalling pathway. Students at universities investigated a signalling pathway, which was already present in the bacterial ancestor of chloroplast, the compartment where photosynthesis takes place.

Signalling pathway is dependent on a molecule that has an important bit in bacterial stress response which is Guanosine tetraphosphate. Genetically modifying the guanosine tetraphosphate content in plant chloroplast.

Researchers have shown that it inhibits chloroplast activity, impacting both function and size. The researchers have also shown that this bacterial signalling pathway plays a key role in communication between the chloroplast and the cell nucleus that regulates plant growth and development.

This signalling pathway could be used to optimize the photosynthetic efficiency of plants subject to water and nutrient deficiencies. With potential application, crop development for green chemistry and algae-based bio-fuel solutions.



The proses Photosynthesis

- Wiktorja