Photosynthesis

Photosynthesis is the process by which green plants, algae and some bacteria convert light energy into chemical energy. It takes place mainly in the chloroplasts, which contain the green pigment chlorophyll. The overall equation is 6CO2 + 6H2O + light -> C6H12O6 + 6O2. The light-dependent reactions occur in the thylakoid membranes and produce ATP and NADPH, releasing oxygen from water. The Calvin cycle occurs in the stroma and uses ATP and NADPH to fix carbon dioxide into glucose. The enzyme RuBisCO catalyzes the first step of carbon fixation.