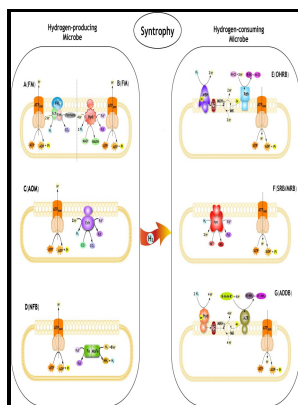


Use of immobilized hydrogenase for hydrogen production

Directorate-General Information Market and Innovation, Commission of the European Communities - Use of cell



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-Use of immobilized hydrogenase for hydrogen production

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EnergyUse of immobilized hydrogenase for hydrogen production

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Hydrogenase

PCC 6803 cells to produce hydrogen via an indirect light driven process was investigated. Algae can split water, but their potential for energy production is long range due to technical problems which must be surmounted by continued basic research.

PHOTOBIOLOGICAL PRODUCTION OF HYDROGEN AND ELECTRICITY

Additionally, a hydrogen gas flow meter Gas Flow Meter series: 32908-51 Cole-Parmer Instrument Company was installed, connected to each photobioreactor. PCC 6803 during dark incubation with methane or at various extracellular pH. Studies have reported that the use of immobilized cells for hydrogen production is more attractive than free cells.

Microalgal hydrogen production

If extracted from the cell, this PHB polymer can be processed into biodegradable and biocompatible plastics, however for this research, it is the efficient metabolic pathway channeling the captured carbon that is of interest. Most of these species are microbes and their ability to use H₂ as a metabolite arises from the expression of H₂ known as hydrogenases. These values were high compared to that obtained in the present study, but other factors could intervene in the production of H₂ when microalgae are cultivated in wastewater, such as organic load, carbon sources and competition and predation by other microorganisms.

Enhanced Hydrogen Production by Co

For H₂ photoproduction, arrows indicate the points where the atmosphere of the vials was replaced with Ar supplemented with 6% CO₂. These results demonstrate that R.

Hydrogen photoproduction by immobilized n₂

Experiments have been designed and executed to quantify the IBT catabolism of R.

Biohydrogen production by *Chlorella vulgaris* and *Scenedesmus obliquus* immobilized cultivated in artificial wastewater under different light quality

Both immobilized microalgae grown under anaerobic conditions showed the ability to change their metabolism and use sources of organic carbon glucose for growth.

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