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Colloque & Assemblée générale

SOCIÉTÉ PHYCOLOGIQUE DE FRANCE

Paris, Jeudi 14 et Vendredi 15 Novembre 2019

ISOLATION OF A *HAEMATOCOCCUS PLUVIALIS* STRAIN FROM A MEDITERRANEAN TEMPORARY WATER POOL: ANTIOXIDANT ACTIVITIES OF CELLULAR EXTRACT FROM CULTURES AT THE GREEN AND THE RED STAGES

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In the last decade, a growing interest has been observed regarding the numerous potentialities of microalgae biomass, including energy production, treatment of wastewaters or human and animal nutrition. Among the high value products, some natural carotenoids such as β -carotene and astaxanthin are derived from microalgae biomass. The health effects of astaxanthin esters sustain its commercial interest. Some microalgae species are known to accumulate such pigments up to 4 % of their dry biomass under stressful conditions. Such treatments are known to induce overproduction of reactive species (ROS). Indeed, the accumulation of the ketocarotenoid astaxanthin, a very potent antioxidant, has been proposed to be directly linked to the production of ROS. However, the application of an oxidative stress, such as high irradiance, was shown to require also a nitrogen deficiency. The optimization of astaxanthin production by microalgae cultures still requires better control of the process leading to its intracellular over-accumulation.

The present study aims to evaluate, through a kinetic analysis, the evolution of the balance between the different antioxidant activities of the microalga *Haematococcus pluvialis* before and after their transfer under high irradiance and nitrogen limitation. Antioxidant is involved in the defense mechanism of the organism against the effects of free radicals and maybe against chytrid attack. The shift from primary to secondary carotenoid production is a function of the level of the residual nitrogen in the culture medium and, according to preliminary results, seems to induce a drastic redistribution of different antioxidant activities.

Keywords: *Haematococcus pluvialis*, antioxidants, astaxanthin, kinetic analysis, antioxidant

Jeudi
14
Novembre
16h00 - 16h30