

Enhanced astaxanthin extractability from microalgae *Haematococcus pluvialis* via biological/physical and ionic liquid assisted chemical treatment

조승준, 심상준[†], 장원석¹, 전재민

고려대학교; ¹한국지역난방공사

(simsj@korea.ac.kr[†])

Haematococcus pluvialis is the richest source of natural astaxanthin, but the thick cell wall of mature red cyst complicates the efficient extraction of astaxanthin from the strain. Herein, the cyst germination method was developed by using nitrogen and light for practical application for an efficient astaxanthin extraction from *Haematococcus* cells cultured in outdoor condition. Energy efficiency for extraction process was highly increased with cyst germination by 1 mM KNO₃-150 μE/m²/s. Also, chemical extraction method was developed to produce stability increased astaxanthin extracts with soybean oil. In this developed ionic liquid assisted sequential extraction method, astaxanthin recovery showed as 74 % for 2nd, 62 % for 3rd, and 56 % for 4th extraction process with re-use of solvent.