

Scale-up cultivation of Photosynthetic organisms for *Haematococcus pluvialis*

윤흥기, 최윤영, 심상준<sup>†</sup>  
고려대학교 화공생명공학과  
(simsj@korea.ac.kr<sup>†</sup>)

Photosynthetic microalgae species produce various useful products and convert carbon dioxide to oxygen. Among these microalga, *Haematococcus pluvialis* can produce astaxanthin. As very-well known antioxidant, astaxanthin is effective in extending life span and preventing cancer causes, and enhancing immunity. In this study, we scale-up the photobioreactor to increase productivity of astaxanthin and compare to indoor cultivation. The cultivation condition is; 25 L polymer film typer photobioreactor, 20~25°C, 0~300  $\mu\text{mol photon/m}^2 \text{ s}$  of light intensity. At these conditions, *H. pluvialis* accumulated 130 mg/L of astaxanthin in 76 days and compared to small indoor conditions, the productivity of *Haematococcus* was remarkably increased.