

Enhancement of biomass and lipid production by biomineralization utilizing CA enzyme in the fresh microalgae *Neochloris oleoabundans* and *Chlorella sorokiniana*

서영현, 유병선, 장원석¹, 심상준[†]

고려대학교; ¹한국지역난방공사

(simsj@korea.ac.kr[†])

The aim of this work was development of microalgae-based biomass-Biomineralization CCU hybrid system. The biggest problem facing humanity at present is climate change, glacier melting and ocean acidification due to the increase of carbon dioxide. To accomplish this problem, it is required to combine biological conversion processes and mineralization processes using microalgae. In this study, the biomass was obtained by using microalgae for the reduction of large amount of carbon dioxide, and calcium carbonate was obtained through induction of calcium ion-mediated biomineralization during the induction stage. The present invention relates to the development of a process capable of remarkably increasing the amount of carbon dioxide in the biomass by additionally producing calcite in an induction stage. The biomass containing CaCO₃-omega 3 produced in the present process can be used as various feeds and cosmetic materials, and CaCO₃ serves as an excipient.