

*Identification of suitable harvesting method for high-density microalgae, Aurantiochytrium sp. KRS101*

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*Five harvesting methods, coagulation, electro-flotation (EF), electro-coagulation-flotation (ECF), centrifugation, and membrane filtration, were compared for harvesting heterotrophic microalgae, Aurantiochytrium sp. KRS101 which has much higher cell density than photoautotrophic microalgae. Coagulation, EF, and ECF could not achieved high harvesting efficiency and low water content in harvested biomass simulataneously. Too strong force of centrifugation induced cell rupture and the consequent biomass loss by over 13 %. On the other hand, membrane filtration accomplished almost 100 % of harvesting efficiency and low water content in harvested biomass at the same time. High permeate fluxes of 219.0 and 135.0 L/m<sup>2</sup>/h were maintained even at extremely high concentration of 150.0 and 203.0g/L, respectively, due to high rotation speed of disk. Dynamic filtration with ultrafiltration membrane and rotation of a perforated disk was proven to be a suitable harvesting method due to no biomass loss, low water content in harvested biomass, moderate energy demand, and flexible operation control.*