

Two-stage cultivation of *Chlorella sorokiniana* HS1 for lipid accumulation

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Two-stage cultivation of microalgae is a promising strategy to accomplish high lipid productivity. In the cultivation, microalgal growth and lipid accumulation are carried out in two separate and non-interacting reactors respectively. In the second-stage, the microalgae grown in the first-stage are transferred into a growth-limited condition, thus inducing lipid accumulation within microalgae. In order to make the medium impoverished, chemical additives, which inhibit algal growth, are generally used such as sodium chloride, hydrogen peroxide and sodium hydroxide. However, the lipid metabolism of microalgae vary depending upon microalgal strains. Hence, considering algal strains, customized formulation and mixtures of the additives are required. In this study, two-stage cultivation of *Chlorella sorokiniana* HS1, a novel freshwater green algal strain, is performed to investigate how the induction stage affects the lipid productivity. With multiple additives, their optimal concentration for *Chlorella sorokiniana* HS1 are determined.