

Utilization of organic waste from the sugar factory for docosahexaenoic acid (DHA) production from *Aurantiochytrium* sp. KRS101

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In the present study, we considered the usage of sugar factory wastewater (SFW) as an inexpensive carbon source for cultivation of heterotroph marine strain *Aurantiochytrium* sp. KRS101 for the production of docosahexaenoic acid (DHA). The highest biomass yield (20.03 g/L in 5 days) was obtained using 30% of SFW in basal medium, which was higher than that of pure glucose control (concentration of glucose: 30 g/L). In addition, the biomass and lipid content were maximized by optimizing the concentration of N and P sources to 20 g/L of yeast extract and 9 g/L of monopotassium phosphate, respectively. And then in order to increase the DHA yield, we implemented sea salt shock up to 35 g/L. In this study, we confirmed *Aurantiochytrium* sp. KRS101 can be successfully cultivated using alternative carbon source from waste waters. We believe that these findings may have a significant impact on the future technology development for DHA production using *Aurantiochytrium* sp. KRS101. (This work was supported by the Advanced Biomass R&D Center of Korea Grant funded by the Ministry of Science, ICT and Future (ABC-2010-0029728)).