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1-butanol production from carbon dioxide by Synechococcus elongtus in Turkey

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Carbon dioxide concentration in the atmosphere is increasing as a result of the combustion of fossil fuels each year as 2.3 ppm. However, climate change and the reduction of available energy resources necessities of implementation of new renewable energies. Sources of CO_2 in the atmosphere originated from the power plants, from the refineries and from the industries treating their waste and waste waters with anaerobic digestion and fermentation. Furthermore, it was observed that the CO_2 emissions increasing significantly from the waste digestires and from the some factories and from the vehicles according to the recent studies. In this study, it was aimed to convert the CO2 to fuel(1-butanol) by *Synechococcus elaongatus* which is a genus from *Cyanobacteria*. The ratio of $CO_{2utilized}$ to1-butanol$_{produced}$ ($CO_{2utilized}$/1-butanol$_{produced}$) was monitored. The effects of some environmental factors (SO_4^{-2}, NO_3, NaCl, pH and temperature) were investigated on the 1-butanol production from CO2 The levels of thiolase and Crotonase enzymes produced throughout the metabolism of *Synechococcus elaongatus* were investigated.

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