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ANTI CANCER DRUG FROM ALGAE AND WASTEWATER TREATMENT: A DOUBLE WINNER

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Abstract

Microalgae are one of the most promising sources for sustainable wastewater treatment in the last decades. Algae used in wastewater treatment facilities to reduce the need for greater amounts of toxic chemicals than are already used. On the other hand, optimization of microalgae production is receiving a growing attention due to their potential to produce drugs, vitamins and energy. It is predicted that cancer will cause 12 million deaths worldwide in 2030, over 30% of the world's population are anaemic due to iron deficiency and 250,000 children only in South East Asia become blind because of Vitamin A deficiency. These statistics demonstrate the importance of producing more drugs and nutrients with less cost. Microalgae can be a remarkable solution for all these problems.

The purpose of the present study is twofold. First, the ability of algae to remove pollutants can be gainfully used in bioremediation of many toxic chemicals. Biodegradative capabilities of microalgae for treatment of phenols, fenamiphos, other organophosphorus pesticides, and toxic chemicals ranging from simple monocyclic to more complex polycyclic pollutants are the primary focus of this study. It also involves the ability of algae for nitrogen and phosphorous removal, carbon dioxide capture and conversion of diluted nutrients from animal wastes. Second, these advantages of algae may increase production of algal biomass. This concept can be an essential step in drug development using algae for more production of beta-carotene, Vitamin B-12, Vitamin E, antibiotics, probiotics, iron and other nutrients and vitamins. Furthermore, anti cancer drugs have been created from blue green algae. This study has been carried out to provide a process, obtaining multi-beneficial effects of microalgae.
