Current Avenues in Nutraceuticals and Pharmaceuticals from Algae

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Background
Alga (comprising of many varieties of algae) are our wealth from nature. They are abundant, and do not require any special sustenance measure; in fact, they sustain the fauna on Earth. Alga provide ‘nutritive’ and ‘ceutic’ functionalities, simultaneously. Their insignificant demand for sustenance, but the plethora of useful products they produce is intriguing. It’s also true that the impact of algae on our nutrition and pharmaceuticals is tremendous.

Objective
Despite their utility, a coherent overview and an in-depth discussion on the various facets of alga as a source of nutraceuticals and pharmaceuticals is awaited. Currently, focus on specialization-wise utilization of algae is practiced by researchers, which could be owing to the lack of a review article that presents a comprehensive discussion on algal utilization in medicine and nutraceuticals. To know more about them functionally as a nutraceutical and pharmaceutical, a review article could provide a holistic understanding of algal utilization.

Methods
A narrative review for collation of findings, and developing an interlink among various findings has been adopted in the present article. This method was envisaged to better aid in understanding the lacunae in existing research,

and formulate the way forward. The present disquisition focusses on discussing nutraceuticals and pharmaceuticals used or derived from alga that have significant utility.

Results

The exposition provides an in-depth understanding on the developments that have been made, and attempts to apprise on the future scope available in the research for processes as well as products development, for the optimum utilization of this valuable bioresource. Compiling the article revealed that algal research has provided evidence-based insight into their utility spectra that establishes this botanical as a reliable bioresource for supplementation of food and medical care in the times to come.

Conclusion

Interdisciplinary studies comprising botany, applied science, and product development should be envisaged as a futuristic strategy for algal product development, utilization, and commercialization. This is because standalone approaches could not realize the complete potential of this bioresource. Future research could benefit from using various applications of algal products. Algal products' relevance is more realizable since the said botanical is both affordable and available in plenty (or at least be conveniently harvested). More inclusion of algae-based food products in our regular diet for functional attributes could be also considered as one of the useful outcomes of this review. Natural medicines based on algae could also be more consumed in the near future.

Keywords: Algae, nutraceutical, pharmaceutical, bioresource, marine, nutritive and ceutic.