

What does red algae contain?

Furthermore, red algae contain fatty acids, phenolic compounds, terpenoids, alkaloids, and other active constituents that have diverse applications.

Can algae and cyanobacteria use solar energy more efficiently?

A single ingenious protein complex makes it possible for algae and cyanobacteria to use and store solar energy more efficiently than any other organism on earth. Scientists at the universities of Utrecht and Birmingham have unravelled the mechanism, which could serve as a source of inspiration for super-efficient photovoltaic cells.

What is the most economically significant algae?

This review emphasizes red algae, which are currently the most economically significant algae, and provides a summary of red algal compounds and their extraction technologies. It aims to serve as a reference for the future high-value and high-quality exploitation of red algae. 2.

Are red algae a high-value resource?

As extraction technologies continue to advance--such as the growing adoption of green methods like ultrasound-assisted extraction and enzyme-based techniques--and as research into their functional components deepens, red algae are poised to achieve high-value utilization across broader sectors.

Can algae convert 98 percent of solar energy?

Algae can convert up to 98 percent of the solar energy. Through mass spectrometry, it has now become clear how.

How does red algae extract work?

The properties of red algae may vary, and the effectiveness of extracting active substances is influenced by several factors including temperature, pressure, reagents, degree of grinding, and extraction time. The extraction process involves the pre-treatment of the algal body followed by the purification of the extracts.

A microalgae culturing system was designed by integrating a dye-sensitized solar cell and photobioreactor to achieve energy self-sufficiency ...

Since the MAAs are the main photoprotective compounds isolated from red algae, the MAA composition of the red algae extracts was characterized. The qualitative and quantitative ...

The present study investigates the usage of a novel natural dye derived from red algae of Morocco in dye-sensitized solar cells (DSSCs) for the first time. The main pigments responsible for ...

Solar container substances of red algae

Fermentation or anoxic metabolism allows unicellular organisms to colonize environments that become anoxic. Free-living unicellular algae capable of a ...

Finally, comparative analysis was performed, and the MPs and OA impacts on unicellular red algae were concluded, which can potentially provide an important reference to ...

Red algae, classified within the Rhodophyta group, have garnered increasing attention for their remarkable therapeutic properties. Constituting around 7000 species, red algae serve as a ...

The main pigments responsible for sensitizing the semiconductor TiO₂ coatings in the red algae were identified as phycoerythrin, carotenoid, and chlorophyll. The efficiency of a DSSC made from red ...

Marine algae are known to produce a wide variety of bioactive secondary metabolites and several compounds have been derived from them for prospective development of novel drugs by ...

Red algae such as *Porphyra* spp. and *Palmaria palmata* are a traditional part of European and Asian cuisines and are used to make other products such as agar, carrageenan, and food additives. ...

Objectives To review red algae bioactive compounds and their pharmaceutical applications. Content Seaweed sources are becoming attractive ...

o The article discusses the distribution and production of major cultured red algae in China. o The active substances present in red algae and their functions are summarized. o The ...

In this paper various adaptive responses of red algae, both in the field and under culture, are discussed in order to compare the physiological and ecological results. All these studies ...

The objective of this review is to summarize the bioactive compounds found in red algae and the techniques utilized for their extraction. The information provided will serve as a ...

Red algae are members of the phylum Rhodophyta, a rich and diverse collection of photosynthetic eukaryotic life forms predominantly seen in ...

Solar drying can be cost-effective for algae drying but is slow and nonuniform due to its reliance on weather conditions. It can be improved by constructing a container that raises the environmental ...

Distribution of major economic red algal aquaculture [3] as well as types of active substances in red algae, extraction technology, and areas of application. (For interpretation of the ...

Among seaweed groups, brown algae had characteristically high concentrations of mannitol, and green algae were characterised by fructose. In red algae, metabolite profiles of individual species should be ...

Red microalgae represent a natural reservoir of beneficial substances with applications in different industrial sectors. They are rich in natural biomolecules known for their antihypertensive, antioxidant, ...

Photoprotective activity of marine red and brown algae have been characterized in many studies; however, up to now very little attention has been given to ...

Algal plants as important primary producers, playing a key role in photosynthesis and oxygen production worldwide, have received great attention from scientific researchers. Algae are a ...

Fermentation is among the oldest recorded preservation methods; originally, it was used to enhance the organoleptic profile and stability of food. Mor...

Abstract Though numerous valuable compounds from red algae already experience high demand in medicine, nutrition, and different branches of industry, these organisms are still recognized as an ...

The aim of this study was to establish the optimal conditions of distinct factors affecting the performance of a closed solar dryer in drying *Gracilaria chilensis*, a commercially important red ...

What kinds of algae are there? Algae are grouped by ancestry. Some groups have a popular name that's based on the coloured pigments they ...

Dye sensitized solar cells assembled using red dyes extracted from Antarctic algae were evaluated. Among all collected algae, the best performances were showed with samples coming from ...

Rhodophyta or red algae are important macroalgae groups containing about 7000 species. They are abundant sources of bioactive substances with a wide structural diversity, including polyunsaturated ...

The red algae (Rhodophyta, Rhodophyceae) are a division of algae, which are colored red by the phycobilin that is involved in photosynthesis. Beside Glaucophyta and Chloroplastida, the ...

Dye sensitized solar cells assembled using red dyes extracted from Antarctic algae were evaluated. Among all collected algae, the best performances we...

Algae produce diverse biological substances with various applications across fields such as food, chemical, carbon elimination, and biofuel industries [8]. With different chemical compositions, ...

In smaller quantities there are xylenes (in red and green algae), ulvans (in green algae) and fucoidans (in brown algae). Macroalgae extract from the sea an extraordinary wealth of mineral elements. The ...

To address this, we assessed the influence of light vs. darkness on OM dynamics of red snow-algal and purple



Solar container substances of red algae

glacier ice-algal blooms in long (24 days) in situ incubations.

Algae beds are a promising resource for bio-energy and gas production, but their productivity is often limited by solar energy harvesting ...

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