

Publikationen

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- Industrial Scale Production of Microalgae - Chlorella vulgaris culture in a 600.000 liter Photobioreactor

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Abstract: The largest production plant for microalgae based on photobioreactor (PBR) technology is located in Klötze/Germany. It was built in 1999. The plant consists of 20 PBR's with a total volume of about 600.000 liter of culture solution. The solution is pumped through a 500 km closed glass tube system. Algae are harvested by centrifugation and spray-drying. All internal processes, from raw material purchasing to distribution, are subject to a thoroughly implemented quality management system (HACCP and DIN EN ISO 9001:2000). Our company produces mainly *Chlorella vulgaris* in that patented system. The biomass is used for the production of supplementary food and as raw material for the food and cosmetic industry. Several microalgae species are considered to be suitable for the production in such PBR's. Our research is focused on the further development of the PBR technology, the optimization of the culture methods for Chlorella and other promising algae species and the development of innovative algae based products.

About our company

Most important PBR-patents owned by us
DE 29706379.0 ; EP 0968273 ; HEI-10-542256

Our business

Production of microalgae (mainly Chlorella)
Preparation of starter cultures and scale-up
Downstream processing of biomass
Product development
Sales and marketing
R&D (PBR technology, culture techniques)
Services

Products

Chlorella biomass as raw material
ALGOMED product line
Cosmetic line
Chlorella - crispbread
Chlorella - gummi bears
Chlorella - noodles



Impact of Chlorella for Medicine

The Chlorella biomass contains a lot of ingredients with a pharmacological impact, such as polyunsaturated fatty acids, vitamins, carotinoids, sterines, phenole carbonic acids, glycoproteines and polysaccharides. But most of the physiological effects could be observed after a daily uptake of only 3 gramm. It is considered that some of the ingredients or part of it act as immune modulating substances. Some of them are identified now. The mechanism of unspecific immune modulation leads to an strengthening of the immune system when the immune status is low. Stress strongly influences the status of the immune system via the neuroendocrinic system. That's why most of the positive influences are seen in relation with stress induced disease patterns like kinds of high sensitivity for viral infection, high blood sugar levels in Diabetes II, high blood pressure and high cholesterol levels. Additionally is seen a stimulation of hemotopoesis and an acceleration of differentiation of the immunocompetent cells, an effect which is not fully understood but with some relevance for cancer therapy.

