Ministry of Higher Education
and Scientific Research

Federal Ministry
of Education
and Research

STC-TUNGER-2015

IB-TUNGER15-072

ALGAEVAL

Project title:

Implementation of a biorefinery concept of green algae.

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Duration:

June 2016 to June 2018

Abstract

Green algae are a promising source of raw materials for the chemical and pharmaceutical industries because of their specific composition. The complete processing of all components of green algae (cellulose, hemicellulose, lignin, extractives and Ulvan) is essential in order to establish a cost-effective process. Accordingly, the green algae must be examined in order to fully exploit their constituents. Therefore, various analytical techniques (DSC, GPC-UV/RI, HPAEC-PAD, HPLC-MS and HPLC-UV) will be used in this project to fully characterize the green algae and to identify new useful materials. Based on these data, the further process steps of extraction, fractionation of the green algae, hydrolysis of the cell wall components, selective production of oligosaccharides and fermentation of the hydrolysis products needs to be examined. Depending on the specific composition of algae and in order to get an economical process, the coupling of individuals steps is required.

The whole biorefinery concept will be studied and proposed for a full exploitation of algal biomass.